Assessing a quality assurance tool used to assess educator delivery of a structured self-management education programme: A Case Study

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Abstract

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Background

Recommendations for assessing quality delivery of self-management support interventions for those with long-term conditions, like DESMOND in Type 2 Diabetes, encourage use of direct observation methods.

Aim

Using the DESMOND programme as a case study, this study assessed aspects of effectiveness of the original assessment tool used to observe educator delivery.

Method

A mixed methods approach was used to: (1) Assess the consistency of the original assessment tool with the programmes' underlying theories and philosophy, (2) Develop a revised assessment tool suitable for assessing the delivery of DESMOND, (3) assess the reliability of the revised tool and (4) describe DESMOND delivery in relation to the revised tool.

Results

(1) The original DESMOND assessment tool demonstrated good theoretical content validity. (2) The revised tool consisted of 39 core DESMOND and NON-DESMOND congruent behaviours. (3) Inter-rater reliability of the tool was assessed as moderate. (4) Educators used a number of DESMOND congruent behaviours in their delivery of the programme, but also many NON-DESMOND congruent behaviours. The reasons for this were related to time, professional responsibilities and lack of confidence in knowing when and how to use the DESMOND behaviours.

Conclusions

Current tools used to observe a nationwide structured self-management programme delivery are complex. A stepwise approach can be utilised to improve the validity of these and similar tools. Training needs of both assessors and educators can be identified using structured observation tools.

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List of Abbreviations

AADE	American Association of Diabetes Educators
ADA	American Diabetes Association
ADEA	Australian Diabetes Educator Association
ASSET	Analysis System for Self Efficacy Training
DAFNE	Dose Adjustment For Normal Eating
DESMOND	Diabetes Education for Self-Management: Ongoing and Newly Diagnose
DEN	Diabetes Education Network
DOH	Department of Health
DSME	Diabetes Self-Management Education
DUK	Diabetes UK
Ed.	Educator
HCP	Healthcare Professional
IDF	International Diabetes Federation
IRR	Inter-Rater Reliability
ITRS	Independent Tape Rater Scale
MRC	Medical Research Council
NICE	The National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
QA	Quality Assurance
QD	Quality Development
R&D	Research and Development
REC	Research Ethics Committee
RCT	Randomised Control Trial
SSMPs	Structured Self-Management Programmes
UK	United Kingdom
US	United States of America
YACS	Yale Adherence and Competence Scale

Thesis overview and introduction

The broad topic for my thesis is the role of the educator in the delivery of self-management programmes to people living with long-term conditions and how quality assurance processes relate to their delivery as an educator.

Chapter One examines the requirement for quality assessment of self-management interventions that been developed to support those living with long-term conditions such as type 2 diabetes. I highlight the key role of the educator in the successful delivery of interventions. By reviewing the steps taken by international and national organisations to provide standards of practice in relation to the delivery of self-management education programmes, I conclude that current processes are limited in terms of measurable educator focused competencies and highlight the limited attention paid to the role of the educator in the delivery of self-management education programmes.

In Chapter Two, I report how leaders of structured self-management education programmes describe meeting the current standards for quality assuring educator delivery. Highlighting the inconsistency of approaches, I investigate guidance from the field of intervention fidelity research. I report how, despite a number of guidance frameworks, inconsistencies remain when examining the role of the educator. I highlight three aspects of good practice for assessing educator delivery and develop a set of research questions for further study.

Chapter Three provides the rationale for the use of case study methodology to guide my plan of work. The DESMOND programme and specifically the associated quality assurance tools are highlighted as a suitable case for study. Using a case study framework, I report my research questions as specific research objectives and the plan of study to meet the objectives.

Chapters Four to Seven report the methods and results of four discrete studies to meet the research objectives.

In Chapter Four I report the results of a narrative literature review designed to assess the theoretical content validity of the current DESMOND assessment tool. I compared the current DESMOND descriptions of educator behaviour (n=100) with theory based behavioural descriptions from publications. My examination of the DESMOND assessment tool and the literature highlighted a

number of issues for those who undertake research in relation to the assessment of educator behaviours in the delivery of self-management interventions.

Chapter Five reports how I developed the current DESMOND assessment tool into a structured assessment tool through use of an iterative stepwise approach. The final revised assessment tool combined behaviours from a range of DESMOND related sources, used by educators in their delivery of DESMOND. Each item was reviewed for its clarity using a-priori criteria and were sorted into five categories by use of sort card task method. Finally, the revised tool was assessed for inter coder reliability using percentage agreement and Cohen's Kappa statistic.

In Chapter Six I report on methods used to code taped recordings of actual DESMOND educator delivery to quantify how the 39 behaviours in the revised assessment tool relate to the delivery of DESMOND by educators. By coding the delivery of nine DESMOND programmes, I analysed the use of DESMOND and non-DESMOND congruent behaviours across all the sessions of the programmes. I report on the commonly used DESMOND and non-DESMOND behaviours, the differences between educator pairs and the presence of the behaviours across the 11 sessions of DESMOND.

Chapter Seven reports my use of focus groups to illuminate educator views regarding the current DESMOND assessment tool, the behavioural descriptions in the revised tool and the requirements of a tool that would help them in their delivery of the DESMOND intervention. By drawing on constant comparative analysis method, I demonstrate how educator views provide explanations for the findings in Chapters Five and Six.

Chapter Eight provides a summary of the whole thesis, highlighting strengths and limitations of my work. Additionally; I outline implications for policy, practice and future research in the assessing the quality of educator delivery of structured self-management programmes.

Chapter I: Managing Long Term Conditions: structured self-management education programmes and the role of the educator

1.1 Introduction and overview

This chapter provides an introduction to the rationale for and the development of quality standards in self-management interventions. I begin this chapter with an overview of challenges related to the delivery of healthcare for those with long-term conditions. Whilst the focus of this thesis is not to explore the challenges facing healthcare systems in supporting individuals with long-term conditions, an overview of such challenges provides an initial rationale for exploring the quality for structured self-management education programmes.

I outline why national guidance recommends a structured approach to developing and delivering self-management education programmes to support people with long-term conditions. I use developments in the field of diabetes care to highlight examples, as it could be argued that diabetes is at the forefront of self-management developments and the only condition for which there is national guidance on the structure of such interventions.

I go on to review the challenges for self-management interventions, being complex interventions, in linking the development and delivery of self-management education programmes to outcomes. I highlight the growing recognition of the need to assess the quality of programme delivery with a key component being the programme deliverer or educator.

Finally, I summarise the challenges posed by the current systems of assuring quality of self-management education interventions and argue for more scrutiny of how educators are assessed.

1.2. The demands of long-term conditions on the individual and the healthcare system

Long-term conditions previously referred to as chronic diseases, are health conditions that "cannot, at present, be cured but can be controlled by medication and other therapies"; for example: diabetes, rheumatoid arthritis and chronic obstructive pulmonary disease (Department of Health 2012). Essentially, the focus for care is on managing the condition to minimise short-term (quality of life, acute illness) and long-term effects (increased morbidity and mortality).

Government reports demonstrate increasing demand for services, due to the increase in the number of people with long-term conditions and highlight the intensive (and costly) use of primary care and hospital services (e.g. Department of Health 2012). In the UK, this demand has been characterised as 30% of the population accounting for 70% of the total healthcare spend (NHS 2014). The impact is also recognised at individual level (on physical and psychological morbidity and mortality), family level (e.g. increasing care demands) and societal level (e.g. loss of time from work) (Department of Health 2012).

Furthermore, these increasing demands are not a new problem; the financial and personal demands of such conditions have been recognised for several years (Dixon 2004). Therefore, healthcare systems have been considering new ways of working to improve both personal outcomes (in terms of the effect of the disease on the individual and their family) and the costs to society as a whole. The recent NHS England report for the NHS: Five Year Forward Review ('The Stevens Report') highlights the urgent requirement to change healthcare delivery for these with long-term conditions (NHS 2014).

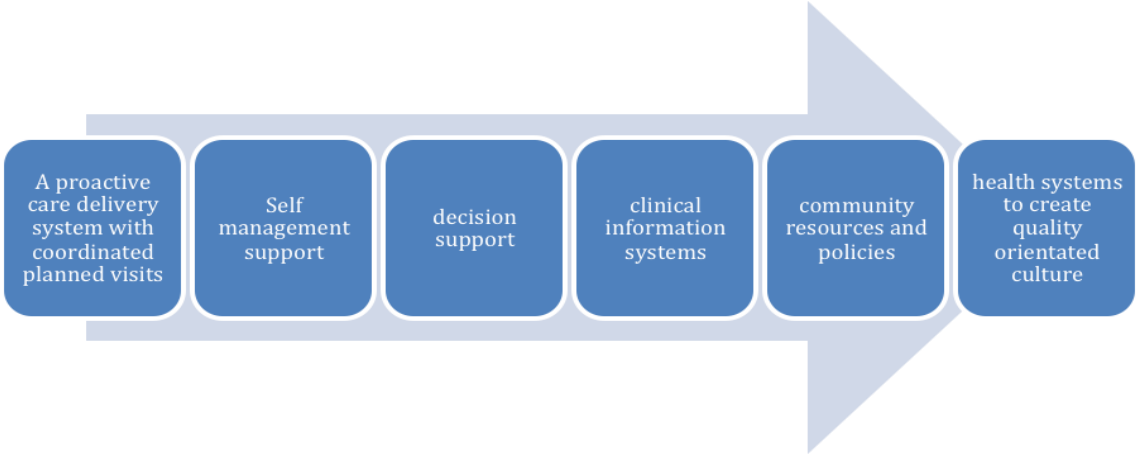
1.3 Long term conditions and changing systems of care

With the increase in demand for services for people diagnosed with long-term conditions has come recognition of the need to improve the services for

supporting effective self-care. The UK Health and Social Care Act (2012) emphasised improving services to those with long-term conditions and highlighted the need for local healthcare commissioners to specifically commission services to engage individuals in self-care. More recently the 'Stevens Report' focused on the requirement for health services to empower patients by helping people to "do more to manage their health" (NHS England 2014 p12).

UK based policies have highlighted the benefits of using the Chronic Care Model developed in the USA (DOH 2012). The model contains a range of components with one relevant to this thesis: that of the requirement for health care systems to support people to be more confident and in control of their condition, to 'reinforce patients' active and central role in managing their illness' (Glasgow et al. 2002). More recently, the language describing this model has evolved from being primarily supportive, to more directive – i.e. ensuring that healthcare teams are prepared and proactive and patients more informed and activated (ADA 2015). The current Chronic Care Model (ADA 2015) comprises six core elements (Figure 1.1), one of which continues to be self-management support. In the US, three national key objectives based on evidence of impact on service improvement, are in place to help healthcare professionals improve their current systems. Each of the three objectives highlight change in the role of the healthcare professional as well as the person receiving care.

Figure 1.1. The Six Core Elements of the Chronic Care Model



It is evident that, to meet the needs of those with long-term conditions, it is not just the patient who needs support for change but also the system of care and those delivering the care, i.e. health care professionals.

1.4 Supporting self-care and the role of structured self-management education programmes

The UK, like many developed countries, has invested in the development of services to support self-care (Rogers et al. 2015). This work has been supported by numerous reports by the Department of Health (DOH 2001), charities (Diabetes UK) and think-tanks (Dixon 2004). The concept of supporting self-care is based on the principle that individuals who are diagnosed with a long-term condition are the main providers and decision makers of their own care, given that most of care happens out with the clinic. Thus, the role of healthcare services is to support them to become more engaged and informed (Wagner 1998, Diabetes 2008). To optimise self-care, those diagnosed with a long-term condition need information and new skills for making lifestyle behavioural changes (in relation to diet, physical activity, emotion management and medication taking).

Supporting self-care through group education programmes

Self-management programmes may be delivered to individuals on a one to one basis or to groups of participants. The latter have been reported as a valuable method of combining educational input and issues identified by participants (Kings Fund 2004). The role of group-based education programmes for people with specific conditions, is specifically mentioned in the NHS Five Year Review as a means of ‘altering the relationship with patients’ (NHS England 2014 p12).

Many of the earliest UK references to group self-management programmes and related national policy documents, refer to services to people with diabetes. For example, in the UK, the National Service Framework for Diabetes included a standard relating to self-management support (Diabetes NSF Team 2001).

Alongside this, structured self-management group programmes are now part of commissioned services to people in England (NHS England 2014).

Diabetes self-management education: a model for the development of group education interventions

Diabetes is a long-term condition that can affect individuals at any age and requires substantial changes by the individual in order to prevent the possible complications of the condition. There are two main types of diabetes: Type 1 which is an autoimmune condition requiring insulin injections and self-monitoring from diagnosis, and Type 2, which refers to 90% of all people with diabetes and linked to obesity and sedentary lifestyle.

The demands of diabetes management include monitoring food intake, and weight, taking and altering medication, being physically active, observing and managing mood, monitoring the impact of all of these on blood glucose levels, and regular checking for the development of long-term complications. The individual with diabetes is largely reliant on self-care; hence, it is not surprising that self-management education was identified as part of care as far back as the 1930s, when doctors recognised the need to help people with diabetes learn to administer their own insulin and test their urine (Tattersall 2009).

Many publications can be found in the literature regarding how to utilise teaching materials to help educate people with diabetes (Baksi 1984) as well as strategies for listening to patients and supporting motivation (Assal 1983). At the time, such publications encouraged any healthcare professional working in diabetes to start to deliver or provide education to people with diabetes. The only skill required appeared to be that of diabetes knowledge, with the skills of listening and supporting motivation being assumed as an inherent part of the healthcare professional role. There was no mandate at this time for additional training for educators to support behaviour change in the people they cared for, an issue highlighted by others (Knight, Dornan and Bundy 2006a, Cradock 1994). This remains true today, with no nationally agreed self-management competencies apart from those related to clinical care (Diabetes UK 2016).

1.5 Outcomes associated with self-care support programmes and the development of national quality standards

Reductions in long-term diabetes outcomes such as cardiovascular fatal and non-fatal events, (for example: renal disease and visual loss) are related to changes in intermediate biomedical parameters. These intermediate outcomes are improvements in glucose control, blood pressure control and weight reduction. Therefore any intervention will be focused on improving such intermediate outcomes. The last two decades have questioned the idea that any teaching works for self-care and highlighted the need to demonstrate the effectiveness of educational interventions on intermediate outcomes. Systematic reviews and meta-analyses have suggested short-term benefits of self-management education (Brown 1992, Brown 1988, Brown 1990, Norris, Engelgau and Narayan 2001, Norris et al. 2002). Where programmes had reported their components, a meta-analysis of what may work was published by Ellis and colleagues (2004) who identified components of programmes linked to 'modest' positive outcomes (Ellis et al. 2004).

Recent systematic reviews of randomised controlled trials (RCTs) of interventions aimed at improving intermediate outcomes in those with Type 2 diabetes highlighted the benefits, in terms of outcome measures, and challenges in defining the most effective components of such interventions (process measures). The reviews concluded that such interventions appear to have beneficial outcomes for people with diabetes including: increased knowledge, improved self-care skills and related self-care behaviours and improved metabolic (glucose) control (Deakin et al. 2006, Loveman, Frampton and Clegg 2008, Minet et al. 2010, Fan et.al. 2009, Coster et.al.2009, Heinrich, Schaper and De Vries 2010). Some studies noted benefits for healthcare system in terms of cost effectiveness and cost saving, based on simulation modelling on their potential effect within a real world setting (Lin 2010). In terms of strategies for delivery, interventions seem to be more effective when they used face to face approaches that facilitate participants' active involvement and collaborative learning (including group sessions), rather than didactic or

interactive teaching methods alone (Fan 2009, Heinrich 2010). One review highlighted the potential for telephone-based interventions as ongoing behaviour change support (Fan 2009). Lastly, interventions appeared to have the same effect whether delivered by a nurse, doctor or dietitian, as long as that person has been trained to deliver the intervention (Deakin et al. 2005).

However, these reviews highlight challenges for delivery of interventions in practice including:

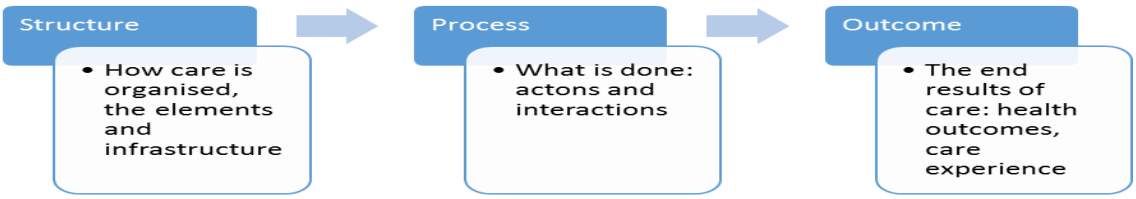
- Variation in outcomes between studies (Loveman, Frampton and Clegg 2008);
- Variable quality of study reporting and methodology (Minet et al. 2010, Loveman, Frampton and Clegg 2008, Heinrich, Schaper and De Vries 2010) and
- Lack of clarity about resources required to ensure the educator can deliver the intervention consistently and reliably (Loveman, Frampton and Clegg 2008)

Whilst there are many patient-related variables that can contribute to the variation in effectiveness of such programmes, the contribution of clinician-delivered elements is highlighted. For example, the success (or failure) may be related to the overall performance and specific skills of the educator, such as developing rapport/using facilitation skills within a group context (Coster, Norman 2009). This has been described as the sensitivity of the education programme to the educator (Loveman, Frampton and Clegg 2008). Therefore, the call for more detailed description, measurement and reporting of process measures of educational interventions would presumably include the performance of the educator (Heinrich 2010, Hoffman et al 2014). The challenge for those developing self-management education interventions continues to include a need to be clear about the active components of the intervention that impact on the educator delivery and the relationship of these to the desired (and possibly undesired) participant outcomes (behavioural and/or biomedical).

1.6 The requirement for standards and quality assurance in self-management education programmes

Much of the focus of quality assurance in the delivery of clinical healthcare services has its roots in the early work of Donabedian (Best, Neuhauser 2004). The Donabedian model of quality assurance in healthcare has three linked sets of standards for healthcare quality: structure (what needs to be in place to provide the care), process (how the structure is used to produce the desired outcomes) and outcome (the anticipated outcomes). See Figure 1.2.

Figure 1.2 The Donabedian model of quality assurance



In his later work, Donabedian critiqued the relative effort that had been placed on the development of quality standards and criteria, rather than the objective assessment of their impact in practice (Donabedian 1988). He suggested that more effort should be placed on reducing assessor bias (i.e. how well the assessor objectively assesses) and focusing on how quality assurance systems improve the quality of the service delivered. Approaches to measuring quality in healthcare mirror the challenges in evaluating the effectiveness of self-management support interventions. When applying this to diabetes self-management education interventions, as well as describing what should happen in the delivery of a programme, there is a need to assess the quality and completeness of delivery, i.e. whether what actually happened was planned to happen.

Methods of establishing quality in diabetes self-management education

Different approaches to measuring quality of self-management interventions

have been devised in different countries and different healthcare systems. At an international level, the International Diabetes Federation has developed standards for the structure, process and outcomes of diabetes self-management services (IDF 2009, IDF 2015). An expert committee approach provided standards at a strategic (related to the local healthcare system) and local (related to the educator) level. Examples of such standards are listed in Table 1.1.

Table 1.1 Examples of International Diabetes Federation standards for diabetes self-management services

Strategic level: S.8.1. Strategic partnerships and referral pathways are developed in order to improve communication and the consistency of services among healthcare professionals, and to maximize the impact of diabetes resources (p19).

Process level: P.3.1 The implementation of Diabetes Self-Management Education (DSME) is learner-centred and facilitates cognitive learning, behaviour change, healthy coping and self-management, and is extended to families, supporters, carers and communities where appropriate (p21).

Outcome level: O.3.1 The physical, psychological, and emotional health of the person with diabetes is improved (p28).

IDF 2009

However, whilst the IDF used the Donabedian model to develop the standards, their approach to establishing effective programmes is limited. First, it does not require the self-management programme to have assessed its effectiveness on participant outcomes (physical, psychological and emotional). Second, there is no formal monitoring system in place for assessing the impact of the standards. Indeed the IDF report suggests that the standards are for benchmarking purposes only (IDF 2009 p5). Last, descriptions of standards may require further explanation as to how they would be observed and assessed in practice. For example, using standard P.3.1 from Table 1.1, the need to include specific descriptors that would suggest the implementation of DSME is ‘learner-centred

and facilitates cognitive learning'.

Two US organisations have identified standards of practice for diabetes self-management education. The American Diabetes Association (ADA) set National Standards for Diabetes Self-Management Education (DSME). (Haas et al. 2014). Ten overarching ADA standards represent Donabedian's structure standards; see Table 1.2 for an example.

Table 1.2 Examples of ADA standards for diabetes self-management education:

Standard 6: A written curriculum reflecting current evidence and practice guidelines, with criteria for evaluating outcomes, will serve as the framework for the provision of DSME. The needs of the individual participant will determine which parts of the curriculum will be provided to that individual.

Standard 7: The diabetes self-management, education, and support needs of each participant will be assessed by one or more instructors. The participant and instructor(s) will then together develop an individualized education and support plan focused on behaviour change

Haas et al. 2014 pS147

Individual self-management support education programmes can seek recognition from the ADA. Local healthcare delivery organisations are responsible for documenting specific process and outcome standards related to their self-management support programmes (American Diabetes Association 2016).

The second US based organisation, the American Association of Diabetes Educators (AADE), has a system to accredit educators across the US. Educator accreditation is based on the professional background and hours of diabetes self-management experience. Individuals apply to become a certified diabetes

educator, which they achieve by undertaking a national certification exam (AADE 2016). Australia has followed the system developed by North America (ADEA 2016) to develop and accredit diabetes educators (ADEA 2016).

In terms of quality assurance, the strengths of the US based systems relate to the existence of standards and associated national accreditation system to encourage their implementation. However, limitations relate to a lack of a process to monitor effectiveness of the interventions. Neither system considers the participant related outcomes of the intervention. With no formal assessment of an educator's delivery of the self-management intervention, there is an assumption that the relevant outcomes will result from whatever the educator provides.

Across Europe, the development of quality criteria for patient education continues be important. Kuske et al. (2015), has distilled the range of international criteria (Department of Health, Diabetes UK 2005, IDF 2015) into 14 high level criteria (for example: core components of the educators'/trainers' roles; monitoring the effectiveness and quality of the programme), providing a brief description for each but with no reported plans to further define, measure and compare how these are put into practice.

In the UK, national guidance on the use of patient-education programmes for diabetes (National Institute for Clinical Excellence 2003) prompted the Department of Health (DOH) and Diabetes UK (DUK) to call for the development of programme specific standards, rather than focus on the role of the educator. A multidisciplinary expert group published the Structured Patient Education Report (Department of Health, Diabetes UK 2005) providing a set of criteria to define a programme as structured. The five criteria and their components are listed in Table 1.3.

The UK standards were developed in the absence of a national approach to accreditation, i.e. there was no system in place to train and accredit those who delivered such interventions, unlike in the USA. The DOH/DUK report, whilst

providing some guidance on structured patient education, left a number of areas requiring further explanation. Firstly there was little guidance regarding a robust process for agreeing and measuring quality assurance criteria. Second, whilst it highlighted the need for competence of the educator, this was in the context of no national agreement of what constituted competence, and therefore reliance on individual programme developers to define and establish competency standards. The report also called for such programmes to be patient-centred and yet acknowledged the lack of clarity about the phrase (Michie, Miles and Weinman 2003). Despite the challenges, these standards continue to be recommended as the basis for such interventions in the UK (Loveman 2008, NICE 2015). How UK based programmes have adopted aspects of the standards is considered further in Chapter Two.

Table 1.3 Key criteria that a structured education programme should meet to fulfil NICE requirements (DOH DUK 2005)

Criteria 1: Have a Philosophy: The programme will be evidence based, flexible to the needs of the individual and dynamic; users should be involved in its on-going development. The programme should have a specific aim and learning objectives, which are shared with patients, carers and family. The programme should support self-management attitudes, beliefs, knowledge and skills for the learner, their family and their carers. **Criteria 2: Have a structured curriculum that is:** Person centred incorporating the assessment of individual learning needs; Reliable, valid, relevant and comprehensive; Theory driven and evidence based; Flexible and able to cope with diversity; Able to use different teaching media; Resource effective and have supporting materials; Written down.	**Criteria 3: Have educators that:** Have an understanding of education theory appropriate to the age and needs of the programme learners; Are trained and competent in the delivery of the education theory of the programme they are offering; Are trained and competent in the delivery of the principles and content of the specific programme they are offering. **Criteria 4: A Quality Assurance programme needs to be in place.** The programme needs to be reviewed by trained, competent independent assessors who assess against agreed criteria the: environment, structure; process; content and use of materials; Whether the programme has actually been delivered; Evaluation and outcome information **Criteria 5: The outcomes from the programme need to be audited**. The outcomes might include: biomedical; quality of life; patient experience; the degree of self-management achieved as a result of the programme

1.7 Describing and assessing educator delivery

While still limited in relation to self-management interventions for long-term conditions, other fields have made more progress in investigating the impact of the deliverer on the intervention's outcomes. Research into educational, psychotherapeutic and behaviour change interventions has investigated the relationship between factors associated with the therapeutic encounter and/or therapist or educator behaviour and positive outcomes in clients (Keijsers, Schaap and Hoogduin 2000, Anderson et al. 2009a, Anderson, Funnell 2008, Hardeman et al. 2008). As a result, more effort has been spent on specifying the role, impact of training and ongoing supervision of the deliverer of an intervention.

Understanding the detail of the relationship has required the development of clearer definitions of behaviours that link to the intervention (Carroll et al. 2000). For example, where a therapeutic intervention benefits the client by them gaining personal insight into their own world, the therapists would need to use a certain set of skills, such as being non-directive and using a more empathic stance to foster such inner exploration. In contrast, where an intervention benefits the client by the adoption of a specific skills (for example, learning to behave differently when faced with a certain experience) the therapist would focus on the clients' ability to acquire skills with which to perform the action. Therefore, having clarity about which therapist behaviours align with which approach assists in the training and development of therapists learning to deliver such skills.

Developing such clarity in relation to educator roles may help improve outcomes related to self-management interventions. However, research into diabetes self-management interventions (group and one to one programmes) highlights the lack of reporting about the impact of training on targeted aspects of the delivery of an intervention (Loveman 2008, Minet 2009, Heinrich 2010). In studies where this has been undertaken, for example where educators and nurses were trained to deliver self-management interventions, subsequent

evaluations demonstrated limited impact of training on performance of educators, and subsequent low fidelity of the delivery of the planned intervention (Anderson, Funnell 2005, Pill et al. 1999). Similar findings have been found in more recent behaviour change interventions: for example, in the ProActive Study, findings demonstrated a median delivery of 44% of behaviours across participants by four educators, leaving the researchers to conclude that the adherence to techniques was modest (Hardeman et al. 2008).

Educators themselves, however, appear to over rate their performance. In two of the studies outlined above, educators' views were gathered on their own performance using different methods. Anderson and Funnell (2005) asked educators to send in an audio-recording of a consultation that they themselves had identified as showing the new techniques; when assessed by the researchers themselves, they were not showing the techniques. Hardeman et al (2008) asked educators, at the end of each intervention session, to rate their own performance using the same checklist used by the independent raters to assess the recorded sessions. Educators rated their own performance as higher (97-100%) than the independent raters (44%).

1.8 Current challenges

An intervention deliverer (the educator) has a key role; some interventions require higher levels of educator delivery fidelity to both content and behaviour as prescribed by the developers. In some cases this requires attention and effort to changing long-established ways of working. Whilst some studies suggest that educators find it difficult to change their behaviour to deliver new interventions, this is based on an assumption that they know what they should be doing and believe they should be doing it. In a study of the impact of an empowerment-based intervention, Anderson and Funnell (2005) commented that educators struggled to deliver the intervention as it required them to undergo a paradigm shift in their belief from being an expert information source and advice giver to a role where they do not give advice or information until the person requests it.

The challenges to educators in changing their behaviour may require additional approaches over and above external training to ensure an intervention is being delivered as designed - for example, training materials with detailed descriptions of the targeted behaviours and the provision of ongoing support (post training). Some of the skills required by educators may be a departure from their usual advice-giving role in standard practice as a healthcare professional and so may present challenges in changing long-established habits in the way they work.

1.9 Summary

Long term conditions and the associated demands on both an individual living with a long-term condition and the healthcare services require significant changes to aspects of health service delivery. Services are being encouraged to increase the number of people who are actively engaged with their condition. Key to this is the need for greater provision of group programmes that support and activate patients' motivation and ability to self-care. While many self-management programmes have been developed to meet this need, they vary widely in content and outcome. Hence, a more structured approach to their design and delivery is needed. The NHS has led the development of criteria and framework for a more structured approach to assessing quality in their delivery. However, the framework is limited in terms of detail and appears to have underestimated the complex issues related to such an approach.

Educators delivering self-management interventions are expected to change the way they work with people with long-term conditions; the challenges to this may have been underestimated. Finding ways of being clear about what educators should do, what they actually do and why, appears vital to being able to assess and influence the impact of intervention delivery on participant outcomes.

There has been limited attention paid to the role of the educator in the delivery

in complex interventions and yet studying this may provide insight into the benefits of different delivery styles. Using research to develop specific descriptions of educator delivery styles that impact on intervention outcomes would also provide quality indicators that could be used to assess the delivery of programmes in the real world of healthcare.

In Chapter Two, I explore quality assurance approaches used by self-management interventions in the UK. I consider how they relate to national guidance and how they contribute to the evidence base for understanding the role of the educator in the delivery of such programmes.

Chapter 2: Quality Assurance and Intervention Fidelity in relation to the delivery of self-management interventions

2.1 Introduction

Chapter One provided an overview of, and rationale for, the development of interventions to support self-management and highlighted the lack of both description and measurement of the elements that make up self-management education programmes (Loveman et al. 2008, Trappenburg et al. 2013, Steinsbekk et al. 2012, Coster, Norman 2009, Fan, Sidani 2009). In some countries, standards have been agreed to support the delivery of self-management interventions, but these are focused on structural aspects of quality assurance, rather than educator 'process' standards related to the delivery of the programme. Identifying educator behaviour standards, that could be measured, would provide a means of assessing the impact of different educator styles on participant outcomes.

This chapter investigates how the quality of educator delivery is assessed from two perspectives. First, in England, there is national guidance for the development of standards related to the description and delivery of self-management interventions, one of which relates to quality assurance processes that focus on the educator role.

Second, from reported approaches to measuring intervention fidelity of complex interventions. Intervention fidelity is the term used when reporting the assessment of quality delivery during complex intervention research (Newman, Mulligan and Steedley 2008). Complex interventions are described as interventions with several interacting components (MRC 2008). For example, a group education intervention has interacting components related to; the participants involved, the design of the programme, the duration of the programme and the role of the educator. Following concerns about outcomes related to psychotherapeutic interventions, standards were developed to

support the development and reporting of intervention fidelity of complex interventions during the research phase (MRC 2008, Bellg et al. 2004), as well as for the implementation of interventions (Carroll et al. 2007, Durlak 2010).

2.2 Chapter Aims

This chapter provides an overview of recommended processes for assessing quality of delivery in both self-management interventions in research and in healthcare delivery practice. Specifically it aims to:

1. Describe how standards for assessment are developed and assessed as part of processes for diabetes related SSMPs in the UK.
2. Describe how standards for assessment are developed and assessed as part of complex interventions in research.
3. Describe approaches taken to focus on the deliverer of the programme (intervention).

2.3 Approaches to assuring quality in the delivery of UK based structured self-management education programmes (SSMPs) to those with diabetes

A report by the Department of Health (England) and Diabetes UK provided guidelines with five overall criteria for a programme to meet for it to be considered a SSMP (DOH/DUK 2005). The guidelines emphasised the role of quality assurance in ensuring the quality and validity of any education programme. The report detailed specific elements to the quality assurance process (Table 2.1) and provided further guidance for both internal and external quality assurance processes, listed in Table 2.2. However, the guidance provided little detailed description as to how to develop the standards and assess them in practice.

In summary, the national guidelines recommended that an SSMP should establish three components of a quality assurance system:

(1) An assessment tool based on the course manual;

(2) Core standards linked to the content, process and philosophy/style of the programme;

(3) Trained assessors who use the tool to observe the delivery and provide feedback to the educator, based on the observed behaviours in comparison with the standards.

The next section provides the results of a narrative literature search for information on how these standards have been adopted and implemented by SSMPs within the UK.

Table 2.1: Key Criteria for SSMPs (DOH/DUK 2005) – Criterion no 4: Quality Assurance

A Quality Assurance programme needs to be in place. The programme needs to be reviewed by trained, competent independent assessors who assess against agreed criteria the: 1. Environment; 2. Structure; 3. Process; 4. Content; 5. Use of materials; 6. Whether the programme has actually been delivered; 7. Evaluation and outcome information. (DOH/DUK 2005 p60)

Table 2.2: Department of Health/Diabetes UK national guidance on quality assurance related to structured self-management education programmes (DOH/DUK 2005)

Three key elements:
Development of a defined programme, with a clear content, structure, curriculum and underlying philosophy which educators are given the necessary training to deliver. The training programme itself is tested and informed by the quality assurance process.
Defined quality assurance 'tool(s)' based on the set curriculum, philosophy and process that identifies a core set of observable behaviours required to deliver the programme. These should be described as standards and a benchmarking process could inform the standards set and review on a periodic basis.
Internal and external process in place to assess the delivery and organisation of the programme itself
Internal Quality Assurance processes:
Practitioners are reflecting on their delivery of the programme.
Reflective practice by the educator on an ongoing basis, via reflective diaries, peer discussions with co-educator
Peer review of the delivery of a colleague trained in this process using the appropriate QA tools
External Quality Assurance processes:
Reviewing the skills of the educators and the observation of courses at that Centre to ensure that the intervention is being delivered according to the set quality standards.
Reviewing the processes the service has in place to ensure that they are delivering the programme according to the philosophy, and set standards; employ video or audio tape to assess skills.
Assessment tools should be based on the course manual or handbook
Core delivery standards set will cover the content process and philosophy/style of the programme
The observation and the feedback should be based on identifiable behaviours and feedback needs to be specific and concrete
The tools used in any quality assurance process need to be agreed by the educators.

2.4 Implementing the national quality standards for assessment of diabetes related structured self-management programmes (SSMPs)

Aim

To identify how UK based structured self-management programmes (SSMPs) for diabetes have implemented the national quality standards.

Methods

The narrative review of the literature sought to identify papers that explicitly described the use of 'structured education' as an intervention and how the quality assurance criteria were reported.

Search Strategy

Two approaches were required to identify relevant reports. The first search using electronic databases to provide a view of what has been reported in the literature. A second, more targeted search strategy was required to identify how the national programmes, including those named in the DOH/DUK report, reported meeting the quality assurance recommendations.

Inclusion criteria:

Searched reports were included if they:

(a) contained a the term 'structured education'

(b) related to an education intervention to people with diabetes

(c) based on primary research, reviews of research or reports

(d) published in the ten years following the publication of the DOH/DUK report

(e) full text available

(f) published in English language

Exclusion criteria

(a) the term structured was not related to an educational intervention

Procedure

The initial database search required the use of two databases to identify

relevant papers. Firstly, using Medline identified 31 papers, of which 3 (after removal of duplicates) related to the criteria. But this search did not identify one of the main UK based structured education programmes (DESMOND, DAFNE or X-Pert) and the second search was undertaken using Scopus.

Each paper identified as meeting the criteria was further examined to identify the following:

1. When authors report an education programme as structured, how do they define this?
2. How many reports of education programmes reference DOH/DUK report or NICE criteria?
3. Which authors cite the use of QA methods?

The second stage of the narrative review was to identify reports using the names and cited authors of the programmes identified from the database search, as a basis to search for programme related publications on the implementation of a quality assurance process. In addition, the UK based Diabetes Education Network website (DEN 2014), cited by Clarke (2011) as providing quality assurance support tools, was also searched for information regarding how SSMPs have developed/delivered their quality assurance processes.

Data Analysis: electronic database search

Each selected paper was examined for each time the phrase 'structured education' was used and how this was defined or referenced.

If the paper referenced NICE criteria for structured education, it was examined further for details of how the standards were implemented.

Results

The database search

The Medline search identified three papers published by two authors, one of which (Yates 2012) was identified in the second search. The second author

(Ridge 2012) referred to DAFNE programme rather than the NICE criteria.

The Scopus search identified 100 papers, only 27% of UK based and 2% of non UK based authors referred to the NICE criteria or the DOH/DUK report when describing their intervention. Many more referred to the three national programmes (DAFNE n=31, DESMOND n=19 and XPERT n=7) mentioned in the DOH/DUK report, but did not specifically reference the criteria for structured education as described by the NICE report.

Seven UK based reports cited the NICE criteria in full, acknowledging that 'structured' means more than the delivery of the intervention itself and reported specifically on the recommendations regarding quality assurance of educator delivery (Deakin 2006, Skinner 2008, Clarke 2011, Daley 2014, Marsden 2009, Price 2008 and Sturt 2008).

Analysis of the meaning of 'structured' in terms of education found definitions of what structured education is rather than what it is not. Education programmes are described as 'complex' and requiring evidence of effectiveness which underpins the criteria recommended by NICE in order for a programme to be described as structured (Jarvis et al 2009, Daley 2014). Structured also seems to imply being organised rather than 'ad hoc' in their design and delivery (Clarke 2011).

The development of quality assurance processes was specifically mentioned by Clarke (2011) in the delivery of the "Diabetes and You' programme, citing the use of a 'peer review form' from the Diabetes Education Network for internal quality assurance and the use of employing organisation internal learning and development department to support external quality assurance. These processes were described as planned rather than implemented similar to Marsden (2009), Price (2009) and Sturt (2008) where an educational intervention had been developed and delivered that they described as 'structured' but had yet to actually put in place quality assurance processes.

<u>Targeted search</u>

Of all the programmes identified in the database search, three programmes reported the development and implementation of a quality assurance programme: DAFNE (Dose Adjustment for Normal Eating) – a five day programme that helps people with Type 1 Diabetes adjust their insulin to match

food intake (DAFNE Study Group 2002, DAFNE 2016). Two programmes for those with Type 2 diabetes (T2DM): DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) – a six-hour programme designed to help people with newly diagnosed T2DM (Davies et al. 2008b), DESMOND 2016) and XPERT - a twelve hour, six-session programme for people with established T2DM (Xpert Health 2016, Deakin et al. 2006). These three programmes also presented details of their QA processes at a Diabetes Education Network conference in 2008, with presentations of their work being available on the network website.

The extent to which each of the programmes meet the recommended criteria for quality assurance of their programmes is listed in Table 2.3.From this search, it was possible to identify that all three programmes had developed many of the recommended QA processes in line with the national recommendations. However, there were some differences.

How did the programmes develop their standards?

Both the DAFNE and DESMOND programmes describe assessing the delivery of the programme during the RCT study phase and used these results to inform their standards. The DAFNE randomised controlled trial (RCT) reported assessing fidelity during the trial phase. This is described as visiting each centre at least once to “ensure that the course was taught to high standards” and using the information gathered to compare sites (DAFNE Study Group 2002). The paper does not specify details or report on how fidelity was independently measured and if any differences in the delivery of the intervention were found. There is no published evidence that the X-Pert programme did this.

What type of standards are described as being observed?

All three programmes described observing information based standards, described either as content delivery or learning outcomes for participants. Only DESMOND and DAFNE describe observing behaviours of the educators. DAFNE describes observing educator behaviours related to the DAFNE philosophy and adult learning. DESMOND describes observing behaviours in

relation to both quantity (talk time) and quality (educator behaviours based on delivery of the study).

How are inconsistencies in delivery identified and fed back into the development of the programme and/or the quality assurance processes?

The Xpert programme provides no reported instances of inconsistencies, nor how these are reviewed and rectified. The DAFNE team report that they identify inconsistencies of delivery and that feedback of these may lead to improvements in the local internal quality assurance processes, there is no reported detail as to how and what this actually means. The DESMOND quality assurance processes received acclaim when awarded the 2007 Health Service Journal Award for Skills Development. However, concerns have been noted about the level of agreement between assessors, when using the assessment tools to observe the same delivery (Cradock et al. 2011).

Table 2.3 The UK based structured education programmes and how they meet the national recommendations for quality assurance

QA recommendations	DAFNE	DESMOND	XPERT
Defined quality assurance 'tool(s)' based on the set curriculum, philosophy and process that identifies a core set of observable behaviours required to deliver the programme.	*Learning outcomes *Educator behaviours	*Curriculum Content *Educator behaviours *Educator talk time	*Learning outcomes
These should be described as standards and a benchmarking process could inform the standards set and review on a periodic basis.	Based on fidelity assessment of delivery during RCT	Based on fidelity assessment of delivery during RCT	No evidence
Internal and external process in place to assess the delivery and organisation of the programme itself	Yes	Yes	Yes
Internal Quality Assurance processes:			
Practitioners are reflecting on their delivery of the programme.	Required	Required	Required
Reflective practice by the educator on an ongoing basis, via reflective diaries, peer discussions with co-educator	Required	Required	Required
Peer review of the delivery of a colleague trained in this process using the appropriate QA tools	No evidence of training in the use of the tools	No evidence of training in the use of the tools	No evidence of training in the use of the tools

Table 2.3 contd. The UK based structured education programmes and how they meet the national recommendations for quality assurance

External Quality Assurance processes:			
Reviewing the skills of the educators and the observation of courses at that Centre to ensure that the intervention is being delivered according to the set quality standards.	Yes	Yes	Yes
Reviewing the processes the service has in place to ensure that they are delivering the programme according to the philosophy, and set standards; employ video or audio tape to assess skills	Yes	Yes	Yes
Assessment tools should be based on the course manual or handbook	Yes	Yes	Yes
Core delivery standards set will cover the content process and philosophy/style of the programme	Yes	Yes	Yes
The observation and the feedback should be based on identifiable behaviours and feedback needs to be specific and concrete	No evidence	No evidence	No evidence
The tools used in any quality assurance process need to be agreed by the educators.	No evidence	No evidence	No evidence

Summary

The three UK based SSMPS all report the development of quality assurance processes, with varying levels of detail. Two specifically report their standards

being based on the evidence from the original research study and curriculum, whereas the Xpert programme based their standards on ‘session learning outcomes’ (for participants) rather than educator behaviours (Xpert Health 2016). Although Xpert and DAFNE describe training assessors to carry out external observations of educator delivery, DESMOND remains the only one with publicly available reports about the assessment of educator delivery quality and the challenges faced in developing and assessing the effectiveness of its quality assurance approach (Cradock 2010, 2011).

As quality assurance processes are complex and resource intensive, they may not represent value for money; this is critical if publicly funded (i.e. by the NHS in the UK). However, quality assurance is vital to ensure that programmes are implemented in the way that was found to be effective in an RCT. Understanding the challenges involved in such processes could lead to improvements, thereby justifying or reducing the costs incurred.

The development of self-management programmes for long-term conditions other than diabetes is likely to increase. Hence, there is a need to create an accepted method for developing generalisable quality assurance processes, with guidance on how to develop standards for assessment, train quality assessors and support educators. Given the recommendation for UK based SSMPs to focus on a person-centred philosophy using adult learning principles (DOH/DUK 2005), developing a set of core standards that can be applied across programmes would provide an opportunity to develop a national consensus. Finally, in order that programme developers can assess whether the key educator components relate to the participant outcomes, it is also important to develop observation tools that have proven validity and reliability.
I have so far focused on assessing quality in UK SSMPs. An understanding of the approaches used to assess quality in other areas of complex intervention development and delivery may provide further guidance.

2.5 Quality and complex interventions: Intervention and implementation fidelity

When designing and testing complex interventions, the measurement of quality of delivery have been described as intervention fidelity. Intervention fidelity, as a construct, arose in the 1980s following reports of differences in outcomes of psychotherapy interventions (Mars et al. 2013). Alongside this, its prominence in the literature is related to concerns regarding the changes made and uptake of interventions following their original design. For example, the use of motivational interviewing (Miller, Rollnick 2009).

Intervention fidelity is described as referring to strategies used to monitor and enhance the reliability and validity of behavioural interventions (Bellg et al. 2004). A related construct, Implementation fidelity is described as the degree to which programmes are implemented as intended by the programme developers (Dusenbury et al. 2003). Implementation Fidelity includes aspects of intervention fidelity, with both approaches having a focus on the appropriate delivery of an intervention, by identifying active ingredients of the intervention and assessing the delivery of the components (Carroll et al. 2007, Bellg et al. 2004, Borrelli et al. 2005).

Intervention fidelity strategies have been recommended as being classified into five categories: design, training, delivery, receipt and enactment (see Table 2.4) (Bellg et al. 2004). The categories were accompanied by a framework for their assessment that focuses on developing clear definitions and strategies for developers of behaviour change interventions (Borrelli et al. 2005). Borelli (2005) provided specific guidance for these approaches with the purpose of them becoming a standard approach to the conduct and evaluation of the studies and as a means of avoiding Type 3 errors - errors related to the intervention not being delivered as designed. Each intervention fidelity category is further expanded into specific components. The **delivery** category consists of nine components (Borrelli 2011) (see Table 2.5).

When deciding on which methods to use to observe or measure the presence of the components of delivery (Table 2.5), possible strategies are reported to include:

- Audio- or video-record the encounter and review recording with provider;
- Review recordings blinded to intervention allocation
- Check for errors of omission and commission (not doing something or adding something in) in intervention delivery;
- After each encounter, check that providers have completed a behavioural checklist of intervention components delivered;
- Ensure provider comfort in reporting deviations from intervention manual content. (Bellg 2004)

Table 2.4 Intervention Fidelity strategies

Design - can the study adequately test its hypotheses in relation to underlying theory and clinical processes?
Training - have the intervention providers been adequately trained to deliver the intervention?
Delivery - is the intervention delivered as intended?
Receipt - do the participants understand and perform intervention related behavioural skills and cognitive strategies during intervention delivery?
Enactment - can the participants perform intervention-related behavioural skills and cognitive strategies in real life? (Borelli 2011)

Table 2.5 Specified intervention DELIVERY components (from Borrelli 2011)

1. There is a method to ensure that the content of the intervention is delivered as specified
2. There is a method to ensure that the dose of the intervention is delivered as specified
3. There is a mechanism to assess if the provider actually adhered to the intervention plan
4. There is assessment of non-specific treatment effects
5. There is a treatment manual
6. There is a plan for the assessment of whether or not the active ingredients were delivered
7. There is a plan for the assessment of whether or not proscribed components were delivered (e.g., components that are unnecessary or unhelpful)
8. There is a plan for how will contamination between conditions be prevented
9. There is an a-priori specification of treatment fidelity (e.g., providers adhere to delivering >80% of components)

Recommendations for assessing Implementation Fidelity came from studying the diffusion of innovations (Carroll 2007). Studying the fidelity of implementation is suggested as going a step further than studying the fidelity of the intervention itself. By focusing on what changes were made to the delivery of an intervention, rather than focusing on what should have been delivered (as in intervention fidelity) and how these related to the desired outcomes, can inform the development of future interventions and the training required to support effective delivery (Carroll 2007). The emphasis on quality of the delivery, rather than just an assessment of whether an aspect was delivered, seems to be one of the differences between the two models.

Hence, the implementation framework appears to provide a useful model for assessing the delivery of complex interventions, but there is no agreed, formalised and adopted process through which to apply the framework to interventions such as SSMPs. To consider how aspects of the frameworks have

been applied, the next section describes how the frameworks are used in practice, with a specific focus on how intervention developers assess the fidelity of self-management interventions.

2.6 The implementation of the frameworks for assessing quality of the delivery

A brief literature search using SCOPUS database for papers reporting fidelity of self-management interventions, identified two recent systematic reviews. Both reported the use of fidelity frameworks in relation to assessing the delivery of self-management interventions delivered by physiotherapists (Toomey et al. 2015) and self-management interventions delivered to people with diabetes (Schinckus et al. 2014). Toomey (2015) describes assessing implementation fidelity reporting yet uses the Bellg (2004) and Borelli (2011) as the method of benchmarking, highlighting the overlap of use of the models in practice.

Toomey reviewed studies of group based self-management interventions delivered by physiotherapists, using the Health Behaviour Change Consortium Treatment Fidelity Checklist (Borrelli 2011). They reported low levels of adherence to the described model of intervention fidelity, a decade on from the original Bellg (2004) recommendations (Toomey et al 2014). Despite 22 studies identified as reporting strategies, overall reporting of the strategies was described as poor, with the mean intervention score (the proportion of adherence to intervention fidelity components) very low at 30% with only one paper scoring over 80%. Toomey (2014) reported these results as varied, in terms of the extent to which the specific treatment delivery aspects were used, with no paper reported all suggested aspects. The most commonly reported aspect of delivery fidelity being ‘dose delivered as specified’ (Toomey et al. 2014 p290). Dose was described as the amount of intervention in terms of duration and frequency, not related to the content or quality of delivery.

The second systematic review related to implementation fidelity reporting of diabetes self-management interventions, using Carroll’s model (Carroll et al.

2007) and identified twenty self-management interventions (Schinckus et al. 2014) These consisted of fifteen empirical studies and five literature reviews/theoretical papers, identified as reporting at least one of the seven self–care behaviours recommended by the AADE (2013) and at least one aspect of implementation fidelity. Six papers reported the quality of delivery made by observation of delivery. Three of these papers used direct observation (Di Loreto et al. 2003, Perrin et al. 2006, Rothschild et al. 2012) and three reported using audio or video recordings to assess actual delivery (Huizinga et al. 2006, Castro et al. 2011, Lakerveld et al. 2012), the latter two were described as combining the observed assessment of delivery with a provider checklist of delivery. I reviewed all six papers in more detail to identify processes used to assess quality of intervention delivery of an intervention.

Huizinga et al (2006) reported assessment of a nurse-led telephone intervention to people with diabetes, with fidelity described as the extent to which protocol-based checklist items were delivered by the nurse. Differences between nurses were reported, in terms of consistency of delivery compared with the protocol. It is difficult to determine from the paper as to whether this assessment was undertaken via direct observation or otherwise as the method was described as using 'qualitative descriptions of the extent to which (the) phone calls were consistent with the intervention protocol' (Huizinga et. al. 2006 p.4). The use of a checklist by raters is reported but with no mention of who the raters were and how they were trained. The level of intervention fidelity was reported by the authors as excellent, with 80% of the protocol items being delivered and with educators not differing significantly.

The TEAM physical activity intervention RCT examined the quality of a telephone-based intervention delivered by professionals or volunteers and consisting of ten curriculum content areas (Castro et al. 2011). Three measures of delivery quality were described: the presence of discussion regarding ten content areas of self-management concepts, whether 'tip sheets' were sent to participants and whether goals were set by participants during the phone call. A single researcher assessed recordings of telephone interventions for each of

the three aspects of quality. Although the study found that volunteers were able to deliver the intervention as well as professionals, the reported fidelity was in relation to how well the peers delivered the intervention in relation to the professionals, not how well the intervention was delivered against planned fidelity levels.

The HOORN diabetes prevention study consisted of six (one-to-one) counselling sessions delivered by practice nurses (Lakerfeld et al. 2012). First, delivery quality was assessed using a questionnaire to assess nurse confidence pre- and post-delivery. Second, counselling sessions were audio-recorded and two recordings per nurse were identified at random and transcribed. Two researchers independently analysed each transcript for the key intervention components of three areas: Motivational Interviewing (MI) and Problem Solving Treatment (PST), using previously validated rating scales, and for counselling competence. Intervention delivery by nurses was reported as sufficient and satisfactory for MI related skills and good for PST skills. However, the intervention showed no benefit on outcomes to people with diabetes and Lakerfeld commented how this may have related to mastery of the complex counselling method by the nurses, as sufficient levels of reflection to question ratio were noted in only 37% of sessions (Lakerfeld et al. 2012).

The MATCH study involved community health workers delivering a community based self-management intervention to people with diabetes (Rothschild et al 2011). Methods of assessing intervention fidelity were reported as each community health worker completing a worksheet for each visit, documenting the diabetes behaviour that was the focus for that visit and the self-management strategies that were taught. A psychologist reviewed audio recordings of visits and reported back to the community health workers on their delivery. No details were reported about how the three fidelity monitored items were described and assessed. A previous publication provided the details of the self-management training techniques and the training of the community health workers (Swider et al. 2010). The MATCH investigators described intervention fidelity being of critical importance in a behavioural clinical trial but did not

expand on this. The intervention was reported as being delivered using the protocol-defined content but without further details of how this was defined (Rothschild et.al. 2011).

Di Loretto and colleagues (2003) designed an intervention to be used by physicians to promote increased physical activity in people with diabetes. Three physicians (the authors) used a seven item checklist to self-report their delivery. Physician adherence to the protocol was reported as 'complete' and the method used to confirm this was described as all three physicians accurately following the counselling strategy (Di Loretto et.al. 2003). The seven items within the checklist combine a heading (for example: motivation) and a related instruction (for example: explain benefits of regular activity), but with no further details reported as to how these items were assessed as being delivered (Di Loretto et al 2003).

Lastly, Perrin et al (2006) studied aspects of delivery of a previously evaluated self-management programme during its replication in another geographical area. They report using a standardised checklist, developed prior to the observations to assess a sample of the programme delivery. The authors report that systematic observation was used to focus on aspects of delivery related to the organisation of the session, educator knowledge of the curriculum (content), the educator competency as a teacher and the educator's ability to respond to questions. There is no further detail as to the meaning of these behaviours. Intervention fidelity was reported in general terms, describing delivery style 'varying between sites' to deliver the same content and suggesting that this variation had little impact of participant knowledge and understanding. However, there was no objective data analysis reported to explain how this conclusion was arrived at.

Of the six studies discussed, three described using at least two of the study team members to review the presence of desired intervention components. The remaining three studies either used a single rater (usually the lead researcher) or did not clarify this. Only one study used validated observation tools to assess

the delivery of the intervention (Lakerveld et al 2012), the others used checklists related to the key aspects of the delivery.

There appeared to be little consistency in how fidelity levels were reported; Toomey (2014) and Schinckus (2014) both concluded that approaches used to assess quality in the delivery of self-management interventions were rarely mentioned and reported. Even when they were reported, there was a lack of consistency in the approaches used. Both self-report and observation methods were used to assess aspects of the delivery. However, the aspects of delivery observed were not always observed in a systematic way using clear definitions, or by using existing validated tools. Only one study described detailed analysis of the delivery by using previously validated tools, others reported a percentage of protocol elements delivered as a measure of fidelity and others simply described fidelity as complete.

The two reviews have highlighted inconsistencies in the assessment and reporting fidelity components related to the delivery of behavioural interventions, including diabetes self-management interventions. Developing and implementing systems for assessing intervention fidelity and other quality processes is complex and resource-intensive both in terms of clear guidance and financial support. As some SSMPs already have processes in place, for example DESMOND that has a process of external observation by assessors, there is merit in examining which existing processes could be further improved.

The literature related to fidelity monitoring of intervention delivery introduced me to the concepts of educator adherence and competence. These concepts are not described in the national quality assurance standards for SSMPs but may offer guidance for assessing educator delivery. The next section considers how educator competence and adherence is described, assessed and reported in relation to complex interventions.

2.7 Assessing the performance of the deliverer of interventions: competence and adherence

This section describes how the developers of different interventions have approached describing, assessing and reporting the performance of the intervention deliverer in terms of required and proscribed behaviours. In particular I outline how the delivery relates to the constructs of adherence and competence considered as two separate aspects of delivery quality (Carroll 2007).

Adherence and competence have been considered important in the assessment of behavioural interventions for over two decades (Waltz et al. 1993a, Mars et al. 2013, Forgatch, Patterson and DeGarmo 2005). The requirement for skilled delivery of complex interventions is likely to involve competence in dealing with the needs or demands of those receiving the intervention (Waltz 1993, Mars et al 2013) and in knowing what to deliver (curriculum content) and how to deliver it (for example by group discussion, role play).

Adherence is defined by Mars (2013) as the extent to which the intervention is observed during delivery; in other words, the extent to which the therapist does as he/she was trained to do and specified in the protocol, in terms of essential content, delivery strategies and theories. Waltz (1993) developed the concept of competence in terms of skilful adaptation, i.e. how a therapist adapts aspects of adherence (prescribed strategies) in response to the client-related context. Mars (2013) agreed with Waltz (1993) for the definition of competence as the level of skill used to deliver the intervention, but suggested the definition is less objective than that of adherence. Defining and measuring competence remains the subject of debate due to the complexity associated with collaborative relationships between those delivering and receiving an intervention (Mars 2013).

One example of a widely used scale is the Yale Adherence and Competence

Scale (YACS) (Smith et al. 2014). This contains 49 items and was developed to assess the delivery fidelity of therapists working in addiction research (Carroll et al. 2000). It contains 49 items, each of which focuses on the behaviour of the therapist and is rated in two dimensions: Quantity/Adherence: the degree to which the intervention item was present in the session and Quality/Skilfulness: the skill with which the therapist delivered the intervention. Both are assessed using a 5-point Likert scale with response categories including: not at all, a little, somewhat, considerably and extensively. YACS, and its subsections continue to be used to assess evidenced based treatments related to drug and alcohol abuse. Its detailed manual guides raters assessing the fidelity of the delivery. However, it is considered a complex scale, with many items requiring expert assessment (Smith et al 2014).

More recently, Mars and colleagues (2013) studied the level of adherence and competence in the delivery of a group self-management intervention, to support those living with chronic pain, delivered by healthcare professionals and lay facilitators. The programme contained 24 course components, seven of which were used as the focus for assessing fidelity in terms of adherence and competence due to the link with behaviour change techniques and strategies underpinning the intervention. Adherence being defined as: whether or not specific components, described in the facilitator manual, were delivered or not. Adherence was assessed by scoring systems of whether a component was delivered (score 2), not delivered (0) or unsure (1). Competence was defined in generic terms and related to how well facilitators created an environment for participants to share their experience and learn new skills. Competence was measured using an overall measure of the facilitator's behaviour, for example their ability to generate group discussion, via a scoring system of whether a behaviour was demonstrated (2), not demonstrated (0) or unsure (1). Independent raters assessed samples of audio recorded delivery and inter rater reliability was assessed using 10% sample of the recordings and percentage agreement.

Whist Mars and colleagues (2013) demonstrated that their intervention was

delivered competently and as intended they highlighted a number of challenges when using this approach to assess fidelity of delivery. Specifically, the relationship between competence and adherence; that low adherence can relate to high competence. For example, a competent facilitator, adapting the course to meet the needs of the participants, may score low levels of adherence, as they did not include all of the 'prescribed' content behaviours. Conversely, an adherent facilitator could perform in a mechanistic way, scoring all the points for delivering all of the key elements but due to the mechanistic performance, demonstrate low levels of competence.

However, definitions and assessment of both adherence and competence require judgement to be made on what prescribed intervention elements are essential to the delivery of the intervention, and what elements are optional.
Providing a comprehensive assessment of the delivery fidelity in relation to competence and adherence requires a number of steps. First, defining prescribed delivery behaviours within a protocol. Second, highlighting which are vital and which are optional. Finally describing the components of competent delivery. However, observing and assessing what is specified as included in an intervention may not be sufficient. Indeed studying what else is happening, in terms of unanticipated delivery components, may be important (Hardeman and Michie 2009). A recommended framework for assessing all aspects of delivery was described by Waltz (1993) and appears pertinent here given the complex work of those delivering complex interventions. This involves the following tasks:

1. Define competence in relation to the intervention
2. Measure adherence using a yes/no scale of item delivered or not
3. Measure and define behaviours within an intervention as (a) unique and essential to the intervention (b) essential but not unique (c) compatible but not necessary or unique and (d) proscribed

2.8 Developing tools for effective observation (monitoring) of delivery of SSMPs or related programmes.

The literature reviewed so far demonstrates the need to precisely define behaviours of intervention deliverers, but, unlike laboratory assay measures used in drug studies, the assessment and measurement of such behaviours relies on human observers. As human observers have been shown to be unreliable, it is now commonplace for researchers to provide training for those who can, in turn, observe the performance of others. The literature on the development of tools for assessing programme delivery suggests intervention specific fidelity monitoring tools are typically designed during the research phase. These tools are then typically used to assess other interventions based on the original intervention. See for example, (Miller 2000, Forsberg et al. 2007, Carroll 2000 and Segal et al. 2002). Other observation tools have been developed by adapting pre-existing tools, such as the Independent Tape Rater Scale (ITRS) designed to assess counsellors' adherence and competence in implementing motivational interviewing (Martino et al. 2011).

The use of intervention fidelity tools to assess programmes that are currently being provided appears to be challenging. This may be due to the need to validate the tools used to assess the intervention delivery, train the assessor and establish inter-rater reliability (Carroll 2000) and the complexity required may be too resource-intensive (Madson, Campbell 2006).
Before summarising this chapter, I return to the recommendations for SSMPs to be based on a philosophy of person centredness and how the use of such phrases warrants further consideration when developing intervention fidelity assessment tools.

2.9 Defining the intervention and its key components: The requirement for clarity in the terms used for the delivery of SSMPs.

UK based SSMPs are recommended to be based on patient centred

approaches (DOH/DUK 2005), yet there is no established agreement regarding the components of a patient centred intervention. Indeed, where studies do report a patient-centred intervention, there are differences in how they describe the components of the intervention (Michie, Miles and Weinman 2003). Furthermore, Michie and colleagues (2003) demonstrated how the reported approaches to support person-centredness were not just different, but resulted in different patient outcomes.

Published descriptions of interventions are typically not reported in sufficient detail to allow replication and/or comparison with other interventions (Loveman 2008, Hoffmann et al. 2014). In addition, concepts relating to the theory underlying an intervention can be used and defined differently. For example, the concept of empowerment is described as a theory in one intervention (Deakin 2006), a philosophy in another (Skinner 2006) and not always sufficiently defined (Skinner, Cradock 2000a, Asimakopoulou et al. 2012). Similarly, commonly used phrases, such as 'patient-centredness' and 'empathy' are defined in many different ways (Knight, Dornan and Bundy 2006b, Mead, Bower 2000, Pedersen 2009). In order to understand the delivery behaviours that are informed by theories, the requirement for clear and agreed definitions is vital.

2.10 Chapter Summary

Available information from the UK programmes highlights that, whilst they developed quality assurance processes to support the delivery of their programmes, little attention has been paid to the description of the core components for educator delivery. There is also little reported evaluation of the tools used to support external assessment and also little acknowledgement of the potential for inter-assessor variability. If the tools are not valid in what they assess, and are used ineffectively by the assessors, then this is likely be contributing to the delivery of a costly but ineffective process.

Reviewing the approaches used to assess delivery quality highlighted challenges to measuring the fidelity of delivery, I wanted to establish markers of

good practice for assessing quality of delivery of current SSMPs.

From the models outlined in this chapter, there are three aspects of good practice for assessing the quality of delivery of an SSMP, which could include:

- A clear description of the core components of the intervention, described in terms of prescribed and proscribed educator behaviours.
- A valid and reliable assessment tool, designed to observe the delivery for the presence of prescribed and proscribed educator behaviours.
- A treatment manual and self-reflection tool that support educators to know what they should be delivering and how.

The limited publications relating to how well current SSMPs meet the national quality assurance criteria highlight a need to understand the how the three aspects of good practice. An in-depth study of one of the programmes, using case study method (Yin 2003), would provide a means of answering such questions. Using a diabetes SSMP as a case, one that has attempted to meet the national criteria, provides an opportunity to consider how to improve current systems for assessing the quality of delivery of SSMPs in diabetes care within the UK.

The questions for such a study are:

1. How well are the educator behaviours described in the current SSMP assessment tool?
2. How representative are the educator behaviours described in the assessment tool with the core components of the SSMP programme?
3. How do the behaviours in the assessment tool relate to educators' delivery of the programme?
4. Which behaviours in the assessment tool do educators think are important and relevant to their delivery of the SSMP?
5. How reliable is the assessment tool when used by others?
6. How and why is the assessment tool used for self and peer reflection?

As the DESMOND programme has already highlighted a need to review the reliability of its quality monitoring processes (Cradock 2010), it is an appropriate

programme to choose for studying further, and is described in full in the next chapter of this thesis.

Chapter 3: Case Study Design and research plan to investigate the DESMOND assessment tools

3.1 Introduction

In Chapter One, I highlighted the increasing demand for services to support people with long-term conditions and specifically the development of structured self-management programmes (SSMPs) to help people look after themselves effectively. I highlighted the role of the educator delivering such programmes as a key component in the delivery of programmes, as approaches they use can influence participant related outcomes of the programme. In Chapter Two, I reviewed the literature to understand how the quality of intervention delivery is assessed. I examined publications from three UK based SSMPs programmes that reported quality assurance (QA) processes and highlighted issues for further investigation. One of these programmes, the DESMOND programme, had already identified a need to further examine the effectiveness of quality assurance processes currently used to assess educator delivery of SSMPs. Using findings from intervention fidelity approaches other research fields, I described three aspects of good practices for further review. I generated six research questions and identified the DESMOND programme as a potential case for further study. The rationale for choosing DESMOND is expanded in this chapter (section 3.3).

This chapter describes the rationale for use of case study approach, using DESMOND and its quality assurance tools as the case. Use of case study methodology provided me with a framework to investigate the original DESMOND assessment tool in relation to the research questions. This chapter outlines the structure of the remainder of the thesis, which involved four separate studies to answer the research questions; the methods and results of each are described in the subsequent chapters.

The specific aims of this chapter are to:

1. To provide an overview of case study as a method for answering my research questions and the rationale for choosing DESMOND as the case.
2. To describe the elements of the chosen case that are key to studying the quality assurance process.
3. To outline the research plan and specific study objectives that provide the structure for this thesis.

3.2 Case study as a research method

Case study research is described as a method of studying an issue through the use of one, or more, case(s) that is set within a context that has clear boundaries (Creswell 2008, Hyett, Kenny and Dickson-Swift 2014). An exploration of a defined case, through detailed and in-depth data collection, can provide answers to questions that may not be amenable to being answered by other research methods (Cresswell 2008). It is a method used to provide insight into the delivery of complex interventions (Hasson, Blomberg and Dunér 2012, Sanetti, Collier-Meek 2014, Macnaughton, Goering and Nelson 2012). Case study methods have also been used to examine the specific behaviour of the deliverer of interventions. For example, to assess the implementation of a teacher based behavioural support plan (Sanetti et al 2014).

To be effective as a research method, case study research requires a clear description of (1) the case and its boundaries and (2) the unit of analysis of the case(s), meaning ‘what’ or ‘who’ is being analysed (Yin 2003, Stake 1995). The strength of case study research is its reliance on multiple sources of evidence to triangulate data in order to confirm the validity of its processes and findings (Yin 2003). The requirement to triangulate data requires the use of mixed research methods to incorporate qualitative and quantitative data sources can include structured observations, interviews, audio-visual material, documents and reports (Cresswell 2008, Greenhalgh et al. 2010).

A strength of adopting a case study research design is the iterative and flexible

approach. The questions I seek to answer, or understand more about, are reliant on the information from one another. For example, if the key delivery components of the programme are not well described, a means of describing these objectively will be required before comparing them to the delivery of the programme. Another strength of adopting case study as a research design is how the findings from the use of an instrumental 'case' to answer research questions, can be generalised to other similar cases. Using a Diabetes related SSMP to answer the research questions will inform other diabetes SSMPs who seek to assess the educator behaviours used in the delivery of the programme.

3.3 Rationale for using the DESMOND Quality Development system as both an instrumental and a descriptive case for investigation

My research focuses on the effectiveness of the quality of tools currently used for assessment of educator delivery in a SSMP. I therefore needed to identify an example of an SSMP with a quality assurance system already in place. The DESMOND newly diagnosed programme presented an ideal example; it had an established quality assurance process with associated tools and a curriculum with training and guidance materials specifying details of essential and desired aspects of the programme (The DESMOND Collaborative 2010). As potential shortcomings have been noted about the effectiveness of the DESMOND programme's current quality assurance processes, the DESMOND collaborative was already starting to question these and were therefore open to the idea of allowing the processes to be scrutinised, with the aim of improving them. Lastly, as the DESMOND team develops new programmes, those involved in the development of new interventions would gain from knowing more about issues related to assessing the quality of educator delivery of their programmes.

The DESMOND SSMP: The context of the case

The DESMOND newly diagnosed programme arose from a collaboration of interested healthcare professionals in response to the call for well-designed and studied SSMPs (Diabetes NSF Team 2001, Skinner et al. 2006). The development of DESMOND was contemporaneous with the development of the national quality standards for SSMPs and was cited by the Patient Education Working Group (DOH/DUK 2005) as an example SSMP that met the agreed quality standards, including: a structured, written curriculum, trained educators and with quality assurance and audit processes.

The programme involves eleven discrete sessions when delivered across a whole day or 12 sessions when delivered over two days (two weeks apart). Two educators deliver the programme to a group of up to 12 people with Type 2 diabetes and their partners. A randomised controlled trial (RCT) of the intervention was delivered across a range of UK sites, by a range of trained educators. The aim of the intervention was to see if the change in health beliefs resulted in the predicted self-management behaviour changes (physical activity, weight change, depression and quality of life) within the individual, which in turn aimed to reduce the risk of diabetes related complications. The RCT showed modest, but significant, changes in the desired direction but recognised that further interventions would be required to sustain health belief and health behaviour changes (Davies et al. 2008b).

Core Components of the DESMOND programme.

Core components of an intervention are those aspects that are deemed essential for the outcomes of the intervention. In terms of educator behaviours, the core components would be the design aspects of the programme that influence how the educator should behave. The DESMOND programme is described in the educator curriculum as having a theoretical basis, with an emphasis on self-management and an explicit person centred philosophy.

Specifically, social learning theory, dual processing theory, the common sense model of illness perceptions and an empowerment based person centred approach are described as underpinning the delivery of the programme and therefore influence the role of the educator (Davies et al. 2008). Each of these core components is discussed further in Chapter Four.

Assessment of educator delivery quality during the DESMOND study

The report of the pilot study (Skinner et al. 2006) mentioned the importance of quality assurance methods but did not describe any details of how aspects of delivery quality were determined. The RCT report mentions that the educators were supported by a quality assurance component of internal and external assessment to ensure consistency of delivery, and mentions that an overview of the quality assurance was reported previously. While no specific detail about the quality assurance processes undertaken was provided in these initial publications, the team reported that the 34 educators were trained over two days and were quality assured throughout the trial. (Davies et al 2008; Skinner et al. 2006).

A subsequent report on educator delivery highlighted the nature of quality assurance processes during the DESMOND RCT (Skinner et al. 2008). Educators were observed during six sessions, but there was no mention of the observation tool used to observe the quality of the delivery. However, the quantity of talk time by the educator in relation to participants was assessed by the use of an event coding method (Flanders 1968). The observer recorded who was talking at 10 second intervals, facilitated by the delivering the sound of a bleep every ten seconds through headphones. In the RCT, the talk time data was compared to the data on illness perceptions before and after the intervention. Analysis of the talk time data suggested a link between less educator talk time and a positive change in participant health beliefs, as anticipated from the modelling of theories that fed into the intervention (Skinner 2008). For example, the less the educator spoke, the more likely participants were to believe that diabetes was serious and that they themselves could make

a difference to the outcomes. Therefore highlighting the importance of supporting participants to talk more during self-management interventions.

However, the analysis of the talk time data revealed that none of the pairs of educators managed to restrict their talk time to the targets set for each session (40 to 65%), determined by assessing the delivery of the programme during the pilot phase. This led to the conclusion that educator behaviour change requires more that initial training and that the DESMOND quality assurance process should support the use of the assurance tools for educators and trainers for self-reflection.

In addition to the impact of talk time by educators, the qualitative aims of the educator role were highlighted as follows:

(1) To elicit learning rather than teach (Davies 2008),
(2) To deliver the intervention using a non-didactic approach (Davies 2008) and
(3) To provide an environment that could be described as providing scaffolding for the learning process (Skinner 2006).

However, there is no reported detail of how these were assessed as part of fidelity monitoring the delivery of the intervention. My involvement in the development of the DESMOND programme and the RCT study has provided me with insider knowledge, which I acknowledge further at the end of this chapter.

Current assessment of the quality of educator delivery

The DESMOND educator curriculum (The DESMOND Collaborative 2010) describes the DESMOND quality assurance approach as including both quality assurance and professional development components labelling the whole process as quality *development* (QD) rather than quality assurance.
The nine stated aims of DESMOND QD process detailed in the same curriculum are listed in Table 3.1 and can be mapped onto Donabedian's model

of quality, described in Chapter One; with aims 5, 6, 7 and 9 being the planned outcome standards. Aims 1, 2, 3 and 4 relate to process standards; the how to achieve the outcomes. These four aims link with my research questions. Item 8, providing feedback for the on-going development and improvement of the programme is one of the outputs from this thesis.

Table 3.1 Aims of DESMOND quality development process

1. Assisting educators to achieve and maintain competence;
2. Providing an opportunity for continuing development of skills, and supporting the development of educator behaviours congruent with the philosophy and educational theories of DESMOND;
3. Providing a framework for reflection on practice;
4. Providing a framework for peer review and feedback;
5. Ensuring that the curriculum is being delivered in a consistent way and is underpinned by the DESMOND philosophy and educational theories;
6. Ensuring that the DESMOND intervention is reliable;
7. Ensuring that the DESMOND intervention is consistent across centres and between educators;
8. Providing feedback for the on-going development and improvement of the DESMOND programme;
9. Providing a process of accreditation of educators delivering DESMOND.

The original DESMOND quality assessment tools

The quality development process involves the use of observation tools as a ‘more objective measurement of educator skills and behaviours’ to assess the delivery of the programme (The DESMOND Collaborative 2010) p5). Additionally, the ‘reflection and action plan’ provides the educator with a support tool to help the educator reflect on how well they are delivering the desired behaviours and content described in the observation tools.

The observation tools are described as assessment tools and focus on three aspects of educator delivery for assessment:

(a) Educator behaviour and facilitation skills: generic (whole programme) and specific (those that are more important in some sessions)

(b) Content framework: the expected content within each session.

(c) Interaction talk time: a measurement of the ratio of educator to participant talk.

Educators are assessed and formally accredited by a DESMOND assessor, who attends a delivery of the programme in person and uses the assessment tools to judge the educator's performance. DESMOND assessors are educators who have been formally accredited in the delivery of the intervention and received further training in assessment. Training of assessors combines face-to-face training followed by personal mentoring of their performance in the field.

The current DESMOND quality development process has been used to accredit over 350 educators (personal communication from DESMOND national office in 2015) across the UK, Ireland, Gibraltar and Australia. This means that fully accredited DESMOND educators have received two external observation visits by trained assessors.

Challenges for the original DESMOND assessment tools and its associated processes

The current process has resulted in the successful accreditation of the more than 95% of educators (personal communication from DESMOND national office in 2015). However, work undertaken during 2010 highlighted specific issues relating to the assessment process. First, inaccuracies when using the talk time system to assess educator talk time were identified (Harding et al. 2011). When the length of the session being observed was compared with the 10-second tally marks on the event-coding scheme, they did not always match. Such inaccuracies were linked with the burden on assessors, who are expected to observe, assess and document observations related to the content, educator

behaviours and educator talk time simultaneously, for each of the sessions being assessed. Second, assessors themselves have raised concerns about the complexity of the paperwork. Third, consistency has been examined by comparing the results of twelve assessors documenting their observation of the same pre-recorded DESMOND session delivery. The results demonstrated that, if the assessment had been an actual assessment, the educator would have been accredited by two assessors and failed by the other ten (Cradock et al. 2010). Whilst ten out of twelve assessors being in agreement could be acknowledged as a good level of agreement, the discussions between assessors afterwards illuminated a need to enquire further into the differences. The differences between assessors were greater when assessing educator behaviour delivery (for example, whether the educator used open questions and reflections) rather than when assessing content delivery (for example: whether the educator mentioned insulin resistance). This further highlighted the potential complexity of the behavioural descriptions in the assessment tool. Therefore, with behaviours being interpreted differently by different assessors, concerns about reliability were raised (Cradock 2010, 2011).

The DESMOND collaborative has sought educator views on the use of DESMOND assessment tools (Taylor et al. 2011). 252 educators (155 not yet accredited and 97 accredited) responded to a request to complete the online survey. Educators reported that the self-reflection and peer review documents were of some/great help to them. However, the findings contrast with the anecdotal experience of DESMOND assessors that there is little evidence in practice that educators use the QD tools for their reflection. Educators requested further optimisation of the QD tools to help them with their personal reflection and feedback to their peers.

In sum, recent internal reviews of the DESMOND quality development process suggest three areas of concern:

- The observation process is complex for assessors;
- The reliability of the assessment tools is questionable;
- There may be lack of use of DESMOND assessment tools by educators

for personal reflection.

3.4 DESMOND Case Study Design and related components

Establishing the ‘case’ to be studied relates to the research questions. Whilst the DESMOND programme is the subject of the case study, considering the research questions, it is clear that the case to be studied is the assessment tool itself.

The boundaries of the case

A suitable case should have clear boundaries (Stake 1995). This prevents the potential blurring of the investigation boundaries, as well as allowing generalisation of potential study outcomes. My research questions provide the boundaries, identifying the limits of exploration of the study. My study will therefore be limited to four items within the case.

1. The DESMOND description of the key delivery components, to be found in the written curriculum for the programme. Such key components may include the theories and philosophical approaches described as guiding the development of the programme.
2. The delivery of the DESMOND programme and its relationship to the behaviours in the tool.
3. The views of the Educators on the use of the DESMOND assessment tool and the relationship of the educator behaviours to their delivery.
4. The reliability of assessors when using the assessment tool.

Elements of the research design.

Case study design should involve five components: the research questions, its propositions or a clear purpose, its units of analysis, a determination of how much data are linked to the proposition and lastly, criteria to interpret the findings (Yin 2003). Using Yin’s five design components and my research questions, the design of my approach is detailed in Table 3.2.

Table 3.2 Case study design for my research

Research Question	Purpose?	Unit of analysis? (the who or what is being studied)	How much data?	Criteria to interpret findings
1. How well are the educator behaviours described in the current DESMOND assessment tool	To investigate the descriptions of the behaviours in the current DESMOND assessment tool	The observability of each behavioural item.	Determined by the number of behaviours described	Defined *a-priori* criteria for a suitable behavioural item
2. How representative are the educator behaviours described in the current assessment tool of the core components of the DESMOND programme?	To consider how the core components are represented in the assessment tool; to assess content validity of the tool.	The behaviours within the assessment tool and the described key delivery components	All of the behaviours in the assessment tool.	Mapping of core component related behaviours to DESMOND behaviours from the assessment tool: identifying those that are related and those not.
3. How do the behaviours in the assessment tool relate to the educators' delivery of the DESMOND programme?	To investigate how many of the assessment tool behaviours are delivered in the programme, and what behaviours are missing from the delivery.	Observation of the presence of DESMOND prescribed and proscribed behaviours in recorded sessions delivered by educators in the real world.	Up to ten programmes delivered by a range of accredited educators	The presence of prescribed DESMOND behaviours; the presence of proscribed DESMOND behaviours and differences between educator pairs.

Table 3.2 Case study design for my research (contd.)

Research Question	Purpose?	Unit of analysis? (The who or what is being studied)	How much data?	Criteria to interpret findings
4. Which behaviours within the assessment tool do educators think are important and relevant to their delivery of DESMOND?	To gain insight into the views of educators about the assessment tool behaviours in relation to their perception of DESMOND delivery.	Qualitative interviews/focus groups from educators in relation to each of the assessment tool behaviours.	Data from each educator whose delivery is observed from Question 3.	The relationship of educator views regarding the importance and relevance of each behaviour
5. How reliable is the assessment tool when used by others?	To determine the inter-rater reliability of assessment tool behaviours when observed by more than one observer.	Data from two pairs of coders providing coded observations of educator behaviours using the assessment tool.	Up to 75% of all data coded for question 3.	Percentage agreement and Kappa coefficient between pairs of coders
6. How and why is the tool used for self and peer reflection? If the tool is not used, why not?	To understand educator perspectives on use of the original tools for personal reflection/development and what could be improved.	Qualitative interviews from educators observed to answer Research Question 3.	Responses to each question from each educator.	Specific reasons for the use or not. What would a tool have to be like to help them use it to develop their practice as a DESMOND educator?

3.5 The Thesis plan of work

To establish a plan of work for collecting and analysing data to answer the research questions, I developed a set of objectives and related actions to underpin my study.

Study Objectives

Objective 1: Review current DESMOND assessment tool and its behaviours.

(a) Review the original tool's consistency with underlying DESMOND theories/philosophies

(b) Identify other behaviours from the DESMOND curriculum

(c) Review the presentation and description of behaviours within the current DESMOND assessment tool.

(d) Identify problems with the original tool

Objective 2: Develop a revised assessment tool suitable for assessing the delivery of DESMOND

(a) Produce initial draft of revised tool

(b) Modify draft tool to account for further relevant (to DESMOND) behaviours occurring in the delivery of DESMOND and identify proscribed (NON-DESMOND) behaviours.

Objective 3: Produce, evaluate and test a revised DESMOND assessment tool

(a) Produce 2nd Draft of revised tool

(b) Test usability of the revised tool

(c) Assess the acceptability and feasibility of the revised tool.

(d) Measure reliability of the behaviours in the revised tool

Objective 4: Describe DESMOND delivery in relation to the revised tool

(a) Investigate which DESMOND behaviours are more likely to be used by educators?

(b) Investigate which DESMOND behaviours are less likely to be used by educators?

(c) Establish which additional (NON-DESMOND) behaviours are more likely to be used by educators?

(d) Establish which DESMOND sessions are most likely to involve educators performing DESMOND behaviours (to l provide guidance as to which sessions could be observed to capture the 'majority' of desired DESMOND behaviours)

(e) Investigate the differences between educator pairs in terms of DESMOND and non-DESMOND behaviours used (to provide guidance on which behaviours are more likely to be used by ALL or FEW educators).

Objective 5: Outline recommendations for DESMOND revised assessment tool and associated processes

Outline revised tool and assessment process (to include training of assessors and potential revision of training to educators)

The Thesis Chapters

The research questions and the study objectives are now combined to show how I report them in the remaining chapters:

Chapter Four: Assessment of Content Validity of the original DESMOND assessment tool.
A narrative literature review identified possible educator behaviours that underpinned the core components of the DESMOND programme. These were then compared to educator behaviours described in the DESMOND quality assurance tools to provide an assessment of the content validity of the tool.

(Research Questions 1/2 and Study Objective 1a)

Chapter Five: Developing and testing a revised DESMOND assessment tool.
An iterative approach was used to review and revise the current assessment tool. All possible DESMOND educator behaviours were identified, examined for overlapping items and classified into objective behaviours using a set of a priori criteria. The objective behaviours were then sorted into a usable assessment framework by the use of sort card task groups. The revised assessment tool was assessed for its level of inter rater reliability.

(Research Question 2/5 and Study Objectives 1b, 1c, 1d, 2a, 2b, 3a and 3d)

Chapter Six: Assessing the presence of DESMOND and non-DESMOND behaviours in the delivery of the DESMOND programme.
The revised assessment tool was then used as a structured observation tool to observe and code for the presence (or otherwise) of the DESMOND behaviours in the delivery of nine video-recorded programmes, delivered by DESMOND educators.

(Research Question 3 and Study Objectives 3b, 4a, 4b, 4c, 4d and 4e)

Chapter Seven: The views of educators.
The use of focus group data and constant comparative analysis provided insight

into the views of educators in relation to the use of the current/future QD tools and the relevance/importance of the revised educator behaviours to their delivery. The results of the analysis of their views was then used to illuminate the findings in chapters five and six.

(Research Questions 4/6 and Study Objective 3c)

Chapter Eight: Thesis summary and conclusions.

Study Objective 5.

3.6 Reflection on my role

At this point in my thesis it is important to reflect on my experience led me to design and undertake this piece of research. As a nurse working to support people with diabetes, I developed an interest in self-management education (Cradock 1994, Cavan 2010) which led to my involvement at a local level with the development of a group programme for people with newly diagnosed Type 2 diabetes (Skinner et al. 2003) – the origin of DESMOND. Alongside this, I had been aware of both the lack of training in skills to support self-management and the challenges facing healthcare professionals in their adoption of an empowerment based approach (Skinner, Cradock 2000, Anderson, Funnell 2005). Working as a founder member of the DESMOND collaborative, I was able to start bringing these two interests together and experience the same challenges faced by others, while being a DESMOND trainer and assessor, as well as continuing to deliver DESMOND as a DESMOND educator.

I had a role in developing the quality assurance tools that are described in this thesis. As we developed methods to assess the assessor, my awareness of how people's perceptions and interpretations of the behaviours in the assessment tools differed markedly, started my thinking about ways of gaining clarity and agreement the DESMOND behaviours and their importance. Additionally, I started to reflect on the meaning and complexity of one of the founding approaches of the DESMOND programme - empowerment.

My interest in this, alongside my work within both the Leicester Diabetes Centre and the DESMOND national programme team, has provided me with an opportunity (this PhD plan of work) to systematically study these issues, whilst simultaneously informing the refinement of the DESMOND assessment tool. As an assessor, I am accustomed to sitting quietly and observing DESMOND educators' delivery and mentoring educators who are keen to be the best educators they can be. It is this experience that has driven me to understand more about how to develop a system of assessment that is meaningful to researchers (providing results which can be used to link to programme

outcomes), and to trainers (so they can focus their training), as well as providing clear guidance for educators and assessors about what prescribed DESMOND behaviours look like in practice.

However, whilst my involvement in the programme provides me with a rich understanding of the issues and opportunities within the programme, it also means that my ability to be detached and open-minded could be judged with some suspicion by others. My ability to adopt a position that is as unbiased as possible needs to be explicit (Denscombe 2008). For example, I am partisan to the cause of ‘empowerment’ and this may encourage me to be positively biased in my reporting of findings that support this approach. Another example may be that my use of questions during focus groups may be biased towards exploring any behaviours related to those I believe to be more important than others. Hammersley (2000) suggests that all research will have some bias in it and what is required is that the researcher makes their bias explicit.

To reduce the impact of my personal bias, I used others wherever possible (resources permitting) to provide input to decisions required and to provide some insight into the objectivity of my observations in Chapter six, by assessing the inter rater reliability of the tool that I used to observe and code educator delivery. Chapter five provides an example of this where I used a range of colleagues to provide input to decisions regarding the design, content and use of the revised assessment tool.

Chapter 4: Assessment of Content Validity of the original DESMOND Assessment Tool

4.1 Introduction

Chapters One and Two introduced the concept of structured self-management programmes, their value in delivery of care for people with long terms conditions and the importance of training and assessment of educators to the successful delivery of such programmes. Whilst many programmes are now tested for their effectiveness in terms of participant outcomes, I highlighted limitations of the current approaches to assess the delivery of programmes by educators. Chapter Three introduced case study as my research method, using the DESMOND and its related assessment tool as the case as a mean to answer my research questions.

This chapter focuses on how representative the educator behaviours described in the current assessment tool are with the core components of the DESMOND programme. This means investigating the content validity of the original DESMOND assessment tool used to observe and assess the educators' delivery of the programme. Before assessing inter-rater reliability (the degree to which two or more individuals agree about the coding of an item) of such an assessment tool, behaviours in the tool need to be assessed as valid. That is, the content of the tool should represent what it intends to measure.

Theories used to underpin self-management interventions can be described as providing some of the active components referred to in Chapter Two. For such theories to be objectively assessed as being delivered (or not), requires them to be described in behavioural terms, as in what the educator would be seen to be doing by an onlooker.

The aim of this chapter is to describe the methods used to assess the content validity of the current DESMOND assessment tool. I report on the operational clarity, theoretical relevance and representativeness of the educator behaviours contained within the current DESMOND assessment tool, and to present the findings from this piece of work. The chapter starts with a brief overview of content validity assessment, which has provided me with a framework for reviewing the literature to identify potential educator behaviours that would be representative of the theories.

4.2 Content validity: identifying a model of assessment

Establishing the content validity of any theory based assessment tool will be dependent on how well the theory has been defined and operationalised. This means taking a theory that is described as underpinning a structured education programme and defining it clearly so that it can be identified by observation. For example, using the theoretical concept 'self- efficacy' from Social Learning Theory, a description of how the educator would 'support self-efficacy' would need to be defined in terms of specific behaviours or activities expected to be observed in an intervention.

The DESMOND programme used a number of concepts (theories, models or philosophies), operationalised them in terms of educator behaviours and listed them in an assessment tool designed to assess the behaviour of an educator. There has been little systematic evaluation of the content validity of this tool. Indeed, as mentioned in Chapters Two and Three, there is evidence of the subjective nature and potential low inter-rater reliability of the tool.

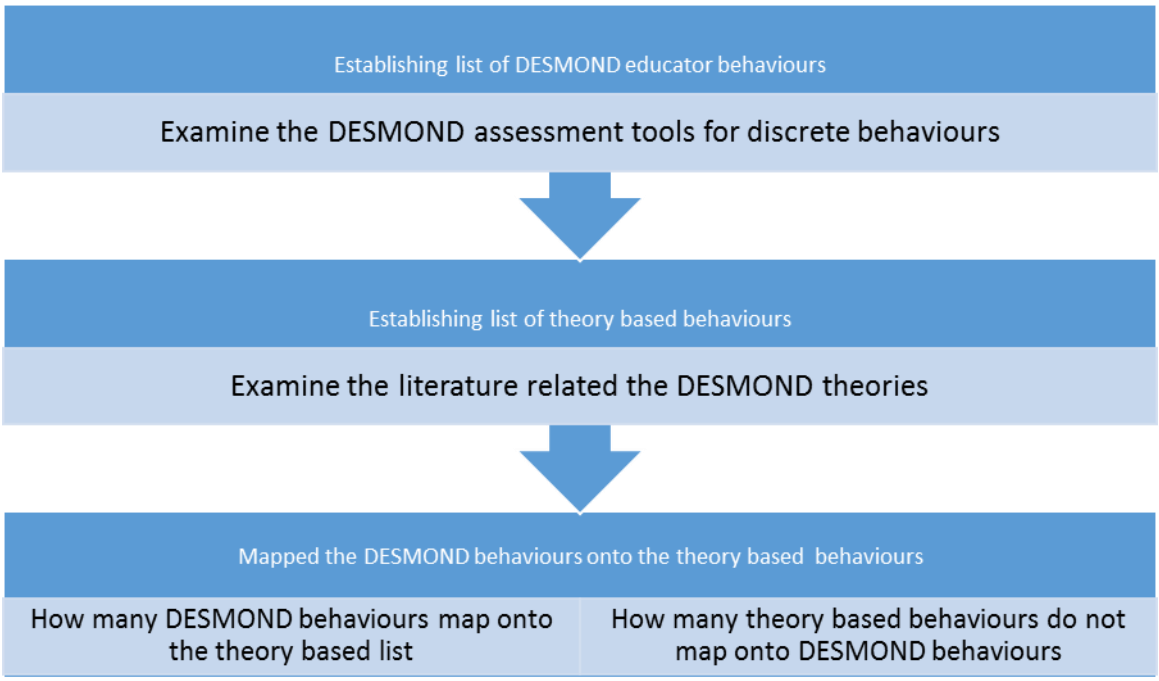
Establishing content validity is just one aspect of assessing overall validity of an observation tool. However, it is the next step beyond face validity and is described

as a more systematic approach to assessing whether the content of an assessment or coding tool “appears logically to examine and comprehensively include, in a balanced way, the full scope of the characteristic or domain it is intended to measure” (Bowling 2009 p167). Whilst it is not the only aspect of assessment that is required to ensure a tool is as valid as it can be, without confirmation of the validity of the content within it, any tool is more likely *not* to measure the concept it intends to.

Content validity is reported as the most common assessment of validity in the literature (Beckstead 2009); a number of methods have been used to assess it. Assessment of content validity is described as a three-step process, the first step being a detailed review of the literature relating to the concept to be described, the next step being defining concepts as behaviours that can be operationalised and the third step being the judgement by others of the operationalised concepts (Lynn 1986, Sridhar 2013, Wynd 2003). The most commonly reported process of establishing content validity is the final step: expert judgement. This step involves using a panel of subject experts, ranging from three to over fifty, who are asked to rate each of the included items in the tool for *relevance* and *representativeness* to the concept (Hayden 2014, Beckstead 2009).

The development of content for the current DESMOND assessment tool indicate that step 3 was followed, as subject matter experts (the clinicians and psychologists who developed DESMOND) generated behaviours from their knowledge of the concepts and grouped these together (through personal communication and experience). However, there is no reported evidence that the behavioural descriptions were formally assessed. Additionally, there is no evidence to suggest that step 1 and 2 were undertaken. My first step in assessing the content validity of the original DESMOND assessment tool was therefore to undertake steps 1 and 2. Figure 4.1 provides an overview of the steps I took to undertake this task.

Figure 4.1: Flowchart representing my approach to establishing content validity of the DESMOND assessment tool



4.3 Establishing the DESMOND behaviour list

Aim

To identify a list of educator behaviours from the original DESMOND assessment tool to be able to compare them with a theory based list of behaviours.

Method

<u>Materials used:</u>

Any tool that contains educator behaviours and used to assess the delivery of the

DESMOND programme: the DESMOND educator curriculum and assessment tools.

Procedure

I examined the separate components of the original DESMOND assessment tool (see Appendix 1 for the current DESMOND observation tool and Appendix 2 for the current DESMOND core behaviours tool) for behaviours that related to the educator delivery of the programme. To ensure that the behaviours in the DESMOND list could be easily compared to those in the literature based list, each behaviour was further examined for its specificity, using the following questions:

- Does it relate to a single item of behaviour?
- Does it relate to the behaviour of the educator?

Results

A total of 100 behaviours were identified from the DESMOND assessment tools. Table 4.1 lists the sources of the behaviours, i.e. which session in the programme they related to. Each of the identified behaviours were then examined for its suitability as an observable item.

During the process of examining each behavioural description, I found reasons that may explain why assessors had reported the current tool as complex and cumbersome. First, 40 original behaviours contained more than a single behaviour. For example: 'uses open discovery questions, reflection and visual tools to…enable participants to work out treatment options for managing blood glucose levels'. This example shows three potential behaviours (uses open discovery questions, uses reflection and uses visual tools), which contain three elements and in their current format cannot be separately assessed. I therefore separated such behaviours out into single behaviours for inclusion in the final list.

Second, many of the same 40 behaviours, despite being listed as educator behaviours, included specific knowledge content. This suggested potential for duplication of content (what to teach) and process (how to teach), as well as

confusion for the educator or assessor on what to focus on. For example; ‘uses open discovery questions, reflection and visual tools to enable participant to work treatment options for managing blood glucose levels’. Yet the DESMOND assessment tool also includes separate sections for knowledge content-related behaviours.

Lastly, I noted behaviours that may give rise to misinterpretation or be difficult to observe. Examples include ‘works with co-educator to deliver this session’ and behaviours that contained the word ‘reflection’. For the former example, working with co-educator could mean delivering the session as a pair, or could mean that one educator takes the lead and the other manages the time. The phrase reflection implies a process of interaction which may include a range of specific educator behaviours.

Despite these last two observations, I decided neither to remove any content originally included as part of an educator behaviour assessment nor to make any major changes to the individual behaviours at this stage until I had identified behaviours from the literature.

Table 4.1 Sources of educator behaviours from the current DESMOND assessment tools.

DESMOND Session ID	DESMOND Session Title	No of Educator Behaviours and Facilitation Skills
A	Introduction	8
B	Patient Story	4
C	Professional Story 1	6
D	Taking Control 1	9
E	Monitoring	8
F	How am I doing	2
G	Reflections	5
H	Professional Story 2	10
I	Physical Activity	6
J	Taking Control 2	9
K	Self-Management Plan	8
L	Burning Questions	3
CORE Behaviours (across the whole programme)		22
TOTAL		100

4.4 Identifying literature based behaviours

As identified in Chapter Three, the DESMOND programme used three theories and a philosophy to guide the development of the intervention. I start this section with an outline of each theory before reporting the results of literature reviews related to each. I considered the literature from two perspectives. Firstly, I consulted the DESMOND publications and looked for words or phrases used to describe the delivery of the programme in relation to the behaviour of educators. Secondly, I searched the literature for interventions reporting to draw on the same theories, to see how they had described educator behaviours.

DESMOND theoretical concepts

Social Learning Theory was originally described as Social Cognitive Theory (Bandura 1997) and has been widely used in the development of interventions to support behaviour change (Zinken 2008). It comprises of three inter-related concepts: self-efficacy, outcome expectations and social support. It proposes that human behaviour is often learnt by observing and modelling the behaviours of others. Self-efficacy is described as the 'beliefs (of people) in (their) capabilities to organise and execute the courses of action required to produce given attainments' (Bandura 1997 p3). Such beliefs relate both to the confidence that the individual has in their ability to perform the behaviour and the belief that the outcome of behaviour change is a positive one (outcome expectancy).

The Common Sense Model (Leventhal 1984) describes how people create mental representations of their illness based on sources of information in order to make sense of and manage it. These representations are usually derived from what people already know (from observing and interpreting the experiences of people around them), what they are told (by healthcare providers or others) and what they experience in relation to the problem (for example, symptoms or no symptoms). How people then interpret this information becomes the first step towards seeking help and making changes or not doing anything.

Dual Processing Theory is described as a model of information processing and is used to understand how better to communicate health messages (Chaiken 1999). The dual aspect refers to the potential for messages to be received and/or interpreted either using heuristics or short cuts, for example 'stop smoking' or 'take the stairs', or a systematic approach, where learning is built using a scaffolding or building upon the current understanding of the learner. The latter requires more effort to understand the message. Dual processing theory is also described as a 'persuasion model', referring to its use when trying to influence messages received

by participants (Cameron 2009). Advocates of this theory argue that messages developed using a systematic approach are more sustainable, as systematic processing encourages an individual to think through and evaluate for themselves the correct message. On the other hand, messages received through heuristic processing use less effort and can be easily changed or influenced (Maheswaran, Chaiken 1991).

The fourth underpinning concept reported by the DESMOND collaborative is the ‘empowerment based’ approach developed originally by Anderson and Funnell (2000). Approaches to support patient empowerment are frequently referred to in the academic and policy literature as an alternative approach to delivering care to people with long-term conditions (NSF Diabetes 2001). Anderson and Funnell’s approach stems from a set of beliefs about people with diabetes and a set of principles of practice for the healthcare professional. It is described as an approach that recognises the central role of the person living with diabetes to manage most of their care themselves (Anderson et al. 1995). Anderson and Funnell’s model is based on the work of Carl Rogers related to ‘client centred therapy’, where the role of the therapist is non-directive (Rogers 1966). The model proposes that people tend to make decisions that are right for them at the time, given their perception of their current situation, and unless healthcare professionals consider this, then advising their patient of potential change strategies may be fruitless. It is an alternative to traditional medical advice giving and as such, it has implications for the role of the health care professional.

4.4.1. Literature based behaviours reported in the DESMOND publications

Aim

To identify behaviours reported in the DESMOND publications to support educator delivery of the underpinning theories.

Methods

I reviewed the key DESMOND publications (Skinner et al 2006 and Davies et al 2008) to search for descriptions of educator behaviours related to the DESMOND theories and philosophy. I looked for words and phrases used in the publications to describe any aspect of educator delivery of the programme, for example, how a theory was used to guide activities.

Results

1. Social learning theory: the DESMOND collaborative described this as guiding activities that support the participant to focus on their goals and action plans.
2. Dual processing theory: this was described as guiding the design of the teaching and learning component of the programme, with the aim of guiding the educator to encourage the participant to be actively engaged in learning.
3. The common sense model of illness representations: this was described as guiding the educator to support participants to explore their own personal model of diabetes.
4. The empowerment-based approach to person centred care: this was reported as guiding the professional responsibilities within the programme *(*Skinner et al. 2006).

As the DESMOND collaborative stated that the content and process of the programme have been developed from these theories, one would expect that the educator behaviours in the DESMOND assessment tools would be related to these approaches. One DESMOND publication (Skinner et al 2006 p373) tabulated how

the theories related to the various sessions within the whole programme (Table 4.2). But this only describes three of the theoretical concepts. The DESMOND collaborative describes empowerment as grounding the programme (Skinner et al 2006), and therefore it can be assumed that any behaviour linked to such an approach would be seen across the delivery as a whole. However, the DESMOND publications do not specifically mention the relationship of the theories to specific educator behaviours.

However, in relation to in implementing the empowerment-based approach in healthcare delivery, the DESMOND collaborators acknowledged potential challenges (Anderson and Funnell 2005, Skinner et al 2006). For example, the empowerment approach is often described as a way of being i.e. what the healthcare professional should believe about the changes that the person with diabetes should make, rather than a concrete set of professional behaviours. Hence, the DESMOND collaborative developed a set of 'professional responsibilities' in relation to the principles of this approach as a way of describing behaviours that would represent the beliefs (Skinner et al 2006 p. 371).

Table 4.2: The DESMOND programme and linked theories (Skinner et al 2006 p373) – table as published

	Theory	Sample Activity	Mins
Introduction			10
Patient Story	CSM	Participants asked to tell their story of how they discovered they had diabetes and their current knowledge of diabetes	40
Professional Story 1	CSM DPT	Use participants stories to support them learning how the body regulates blood glucose	55
Taking Control 1	SLT DPT	Knowledge and Skills for food choices to control blood glucose	40
Monitoring	SLT DPT	Supports participants exploring benefits of monitoring and how to use it for feedback	30
How am I doing	SLT	Participants reflect on what issues have come up from the program so far	5
Reflections	SLT	Participants reflect on what issues have come up from the program so far	15
Professional Story 2	CSM DPT	Uses participants' stories to support them discovering how other risk factors (BP, Lipids, depression etc.) affect diabetes and the development of complications	45
Physical Activity	SLT DPT	Exploration of benefits and barriers to physical activity	20
Taking Control 2	SLT DPT	Knowledge and Skills for food choices to reduce risk factors	55
Self-Management Plan	SLT	Patients supported in developing their own self-management plan	30
Burning Questions	CSM	Check that all questions raised by participants throughout have been answered and understood	10
What happens next		Follow up care outlined	5 min

CSM (Common Sense Model
DPT (Dual Process Theory)
SLT (Social Learning Theory)

Whilst Table 4.2 shows how the theories are linked to sessions within the programme, there is no further reported detail about what one would be expect to be observed in practice. In addition, the linkages are not explicit between this table and the session specific DESMOND assessment tool (Appendix 1). The DESMOND publications contain little explanation for the above table not linking to the assessment tools.

In sum, examination of the DESMOND publications did not provide me with specify or report theory based educator behaviours. However, the publications cited a number of sources related to the theories. I next examined these to identify any educator behaviours.

4.4.2 Theory based behaviours from the DESMOND reported references

Aim

To develop a comprehensive list of behaviours related to the underpinning theories of the DESMOND programme.

Method

I scrutinised references cited in DESMOND publications for descriptions related to theoretical concepts. I identified and tabulated key statements, words or phrases used in the papers to describe behaviours related to the specific theoretical approaches. For example, how educators would behave when delivering an empowerment based intervention. I then looked for educator behaviours that could be used to populate a theory-based list.

Results

The two key papers reported in the literature related to the development and delivery of the DESMOND intervention (Skinner et al 2006, Davies et al 2008). These contained ten references related to theoretical underpinnings of the

programme. Seven of these related to the originator of the theory (Bandura 1997, Leventhal et al. 1984, Cameron, Leventhal 2003, Leventhal, Meyer and Nerenz 1980, Chaiken, Wood and Eagly 1996, Chaiken, Trope 1999, Chaiken, Ledgerwood 2012), two were expert opinions (Skinner and Cradock 2000 and Anderson et al (in Snoek and Skinner 2000) and one reported on the delivery of an intervention (Anderson et al 2005).

I examined each paper, looking for descriptions of *how* the theory would or should be implemented to support delivery of an intervention. On reviewing these, it became clear that there were a range of operational descriptions, i.e. not just descriptions of educator behaviours, but I noticed that these could be categorised; so I devised a table (Table 4.3) to sort them into the following groups:

1. Behaviours that focused on the strategy (direction, plan).
2. Behaviours that described a behavioural technique (a procedure to complete a task - but not specifically on the role of the educator).
3. Behaviours that focused on the role and behaviour (range of physical or verbal actions) of the participant.
4. Behaviours that focused on the behaviour (range of physical or verbal actions) of the educator.

Table 4.3 Potential theory related operational behaviours extracted from DESMOND cited papers

(1) Social Learning Theory Self efficacy (Bandura 1977)

Theory related strategy (direction, plan	Theory related technique (procedure to complete a plan)	Theory related participant behaviour	Theory related educator behaviour
Performance Accomplishments (Mastery)	Participant modelling Performance desensitisation Performance exposure Self-instructed performance	No descriptions found	No descriptions found
Vicarious Experiences	Live modelling and symbolic modelling		
Verbal Persuasion	Suggestion Exhortation Self- instruction		
Emotional Arousal	Attribution; relaxation; biofeedback; Symbolic desensitisation Symbolic exposure		

Table 4.3 contd.

(2) Potential theory related operational behaviours extracted from DESMOND cited papers: Common Sense model of illness perceptions (Leventhal et al 1980. Leventhal et al 1984 and Leventhal et al 2003)

Theory related strategy	Theory related technique	Theory related participant behaviour	Theory related educator behaviour
Interventions must be holistic and integrative: taking into account all aspects of the model Interventions must follow diagnosis Hierarchical strategies are needed to maintain motivation: to allow for surprises or failures to occur in the reappraisal of the model	Correcting existing systems of beliefs	No descriptions found	No descriptions found

Table 4.3 contd. Potential theory related operational behaviours extracted from DESMOND cited papers: (3) Dual processing theory: Heuristic-Systematic processing (Chaiken et al 1996, Chaiken et al 1999, Chaiken et al 2012)

Theory related strategy	Theory related technique (procedure to complete a plan	Theory related participant behaviour	Theory related educator behaviour
Use systematic processing when messages/actions are important	Systematic processing is more likely when careful thought is given so that it generates judgment confidence Systematic processing is more likely when the message is particularly relevant to the person; their goals or their interests	No descriptions found	No descriptions found

Table 4.3 contd. Potential theory related operational behaviours extracted from DESMOND cited papers : (4) Empowerment based approach (Skinner and Cradock 2000, Anderson et al 1995, Anderson et al (in Snoek and Skinner 2000)

Theory related strategy	Theory related technique	Theory related participant behaviour	Theory related educator behaviour
Acceptance of decision-making rests with participant Unconditional positive regard for the person by the HCP. Emotional exploration part of the consultation content Autonomy of the participant Alliance	Helps the person change what they want to change Explore emotions that the person associates with the problem Assisting people to make informed choice Providing them with information they need, in an environment that enables them to use it. Help people understand the impact of the self-care choices on the control of their diabetes Identify and set realistic goals Apply a systematic problem solving process to eliminate barriers to achieving those goals Cope with circumstances that cannot be changed Manage the stress caused by diabetes Identify and obtain appropriate social support Improve their ability to be self motivated	Participant is responsible for the majority of the content of the consultation Active participation	HCP role is to: Refraining from judging, condemning or in any way conveying any negative assessment of the participant. Be a very active listener; checking understanding Guide the participant actively through the process. Action of the HCP is influenced by the participant Act as a mentor, advisor and coach rather than of complete control and responsibility

As demonstrated in table 4.3, the DESMOND referenced literature contained many descriptions of strategies and techniques, but very few behavioural descriptions related to the educator were identified in relation to three of the four theories. There were more behavioural descriptions derived from the literature related to principles of empowerment; with behaviours being described from two perspectives: what the educator should do and what the educator should not do. For example: 'being a very active listener: checks understanding' and 'refraining from judging, condemning or in any way conveying any negative assessment of the participant'. However, a problem with educator behaviours that were described, was that some behaviours would require further definition for them to be observed objectively. For example, 'HCP [Healthcare professional] role is that of mentor, advisor and coach rather than of complete control and responsibility'.

Altogether, the many gaps in the table made it difficult to develop a comprehensive list of behaviours to compare the DESMOND assessment behaviours with. However, the identified strategies, techniques and participant-focused behaviours could be developed further in into educator behaviours, as identified as one of the steps to undertake during assessment of content validity (Lynn 1986, Sridhar, Pluye and Grad 2013). As the descriptions did not allow for a list of theory based behaviours to be compiled, I decided to review a wider range of theoretically related literature for how others may have operationalised the theories.

4.4.3 Review of the wider literature for descriptions of educator behaviours

<u>Aim</u>

To identify, from a wider search of the literature, theory based educator behaviours for delivery of interventions based on the DESMOND related theories.

Method

A structured literature search was undertaken to identify published literature for studies that reported interventions based on the DESMOND related theories: Social Learning Theory, Dual Processing Theory, Common Sense Model and empowerment-based principles. This included identifying papers written by the originators or developers of the theories.

Search Definitions

The terms ‘self–management’ and ‘intervention’ were used to identify an initial group of articles in each of the four searches. To then specify studies that applied to the above theories, I added the following key terms in turn:

- Social Learning Theory and/or Self-Efficacy
- Dual Processing Theory and/or Heuristic Systematic processing
- Common Sense Model
- Empowerment-based

The details of the search strategy and results for theory based behaviours are provided in Appendix 3.

Inclusion criteria:

Type of intervention: Papers were included if they related to face-to-face interventions with adults and were published in English. Internet based approaches were included if they were delivered alongside face-to-face interventions;

Article Types: Papers were included if they were original and review articles.

Study Design: As descriptions of behaviours were sought, rather than outcomes of the intervention, all types of study design were included.

Exclusion criteria

Articles were excluded of they were delivered to children; internet based only and/or related to non-health based interventions.

Search Procedure to identify theory based behaviours:

A five-step process was utilised for each of the four DESMOND related theories and identification of behaviours.

Step 1: Two databases were used to identify relevant articles: Medline and Scopus, using the search terms outlined above. These databases were chosen as they covered a broad range of subjects (healthcare and social sciences) where relevant papers would expect to be published. Both databases were searched for published articles between 2000 and 2014. The year 2000 was chosen as the start year to provide a 15-year time frame for the search, to account for years before and after the development of the DESMOND intervention (started 2004). Articles from previous years were included if they were cited by articles identified by the search and related to the work of originators of the theories.

Step 2: Titles and abstracts were read to identify relevant papers. Each paper was then assessed for the following

- Did the paper report the theory?
- Did the paper report the originating author of the theory?
- Was the paper related to an intervention?
- Did the paper mention theory related techniques?
- Did the paper mention potential educator behaviours?

Step 3: Any publication that mapped onto at least three out of the five criteria was then scrutinised in detail by myself to identify words or phrases that specifically

described how the target theory was operationalised.

Step 4: The words and phrased identified from the literature were combined to create a comprehensive list of potential educator behaviours relating to the DESMOND related theory.

Results

The results for each of the search and review steps for each DESMOND theory are now presented separately.

Search Results: Social Learning Theory

Using the steps outlined above identified 164 papers, 32 of which were extracted after reading titles and abstracts. The 32 were reduced to 16 papers by assessing each against the five criteria. One of these was a previously examined DESMOND publication, and therefore not included in step 3. The details of the final 15 papers are listed in Table 4.4.

I then scrutinised each of the 15 papers for words and phrases that provided behavioural descriptions for how social learning theory had been operationalised in the reported intervention. Many of the papers reported on the use of the self-efficacy aspect of the theory, firstly in terms of how to define it using concept analysis techniques (Liu et al 2012 and Zulkowsky 2009). Secondly, how to use self-efficacy in practice, but with differing terms ‘defining elements’ (Liu 2012), ‘antecedents’ (Zulkowsky 2009), ‘source of information’ (Kasikci 2011), ‘elements that build self-efficacy’ (Martin 2008) and ‘sources of self-efficacy enhancing information’ (Wu 2011, Zinken 2008). As well as different words being used to describe the same thing, words used in many papers appeared complex, for

example ‘fostering self-efficacy enhancing skills’ (Liu 2012) or ‘helping participants to modify existing maladaptive behaviours’ (Zulkowsky 2009) without any further description regarding what educators would do to support this.

Table 4.4: The final papers used to identify educator behaviours related to Social Learning Theory

Reference	Report theory	Included phrase 'Self Efficacy'	Described intervention	Included details of specific concepts related to Social Learning Theory or Self Efficacy	Included details of educator behaviours
Liu 2012	√	√		√	
Kaşıkçı 2011	√	√		√	√
Shi, Ostwald and Wang 2010		√	√	√	√
Zulkosky 2009		√		√	√
Martin et al. 2009	√		√	√	
Krichbaum, Aarestad and Buethe 2003	√	√		√	
Wdowik et al. 2000	√	√		√	
Maindal et al. 2010	√			√	
Bastiaens et al. 2009a	√		√	√	
Jones 2006	√	√		√	
Jack Jr. 2003	√	√		√	
Zinken K. M. et al. 2008	√	√		√	√
Allen N.A. 2004	√	√		√	√
Lee, Arthur and Avis 2008	√	√		√	
Koopman-van den Berg, Dorine JEM, van der Bijl, Jaap J 2001	√	√		√	

Only one out of the 15 papers identified specific educator behaviours, specifically describing behaviours related to supporting self-efficacy (Zinken 2008). Descriptions for self-efficacy supporting behaviours included being person-centred (Maindal 2010) and not being one where participants are in a passive information-receiving role (Zulkowsky 2009). Maindal (2010), reporting challenges from educators in the delivery of self-efficacy based intervention, provided one example of a negative educator behaviour: educators should not give the information they thought was important.

Zinken (2008) developed a tool to assess the delivery of these in practice and recommended that, as the self-efficacy based strategies are quite broad, they need to be developed into specific verbal techniques to allow for assessment of educator delivery, drawing attention to the need to consider ‘what is said’ as well as ‘what is done’. To do this, Zinken created a compendium of verbal techniques from a review of intervention studies that were based completely or partially on social learning theory.

My findings of few detailed educator behaviours was supported by Jack (2003), who called for those developing self-management education programmes to be more specific and detailed on how they utilised theories such as social learning theory in their interventions.

I mapped items found in the 15 identified papers using four headings (Strategy, participant focus, techniques and educator behaviour) to identify the overall descriptions of operalisation of Social Learning Theory. The mapping details are listed in see Table 4.5.

Table 4.5 Words and phrases reported in the literature relating to operalisation of Social Learning Theory

Strategy	Participant Focus	Possible Techniques	Educator Behaviour
Performance Accomplishments	Participant Modelling Performance Desensitisation Performance Exposure Self-instructed performance	Establishing small goals (Lee LL) Personalised, individualised and valued goal setting (Lee LL; Wu and Jones) Make the performance visible by the use of personal diaries (Lee LL). Use of small group discussions (Shi) Hands on activities (Widowk) Practising skills (Zulkosky)	*Facilitates pro-active self*: facilitator supports patients in taking responsibility for their learning outcomes, well-being, illness management and setting benchmarks (e.g. what questions do you have that will better help you understand the topic?) *Successful Trial:* facilitator brings patients to practice new skills, guides through the task (e.g. use the instructions to help you use the pen) *Self-Reflection:* facilitator asks questions which bring people to self-reflection and self-learning based on previous and current experiences. (e.g. what did you learn from the experience?) (Zinken).

Table 4.5 contd. Words and phrases reported in the literature relating to operalisation of Social Learning Theory

Strategy	Participant Focus	Possible Techniques	Educator Behaviour
Vicarious Experiences	Live modelling Symbolic modelling	Meeting with others; use of videos of role models; ensuring comparable role models (Lee LL) Sharing and peer support (Wu) Watching others (Zulkowsky) Learn new behaviours through modelling and observation (Zulkosky) Successful role models (Shi; Widowik) Stories and videos from role models (Jones) Group sessions (Maindal; Martin)	Creates the opportunity to observe others in action *Competent other*: Facilitator who has personal experience of chronic illness management/Facilitator provides the opportunity for expression of successful attainment (e.g. what exactly did you do to avoid bruising from injections?) *Group Solving*: Facilitator brings group to solve someone else's problem (e.g. if this was you, if this was your problem, how would you solve this situation?) *Sharing Obstacles:* Facilitator asks the group about the obstacles met and the difficulty of the task (e.g. has anyone in the group ever had a similar problem?) (Zinken)

Table 4.5 contd. Words and phrases reported in the literature relating to operalisation of Social Learning Theory

Strategy	Participant Focus	Possible Techniques	Educator Behaviour
Verbal Persuasion	Suggestion Exhortation Self-Instruction Proactive coping	Encourage people to interpret experience as a success (Lee LL) Caution with encouragement: unrealistic expectations from others can weaken confidence (Lee LL) Reinforcement and persuasion strategies/verbal praise (Shi; Wdowik) Provision of specific feedback (Jones) Support to detect ambivalent feelings regarding self-management (Jones; Lee LL). Praise efforts (Kaskci)	Encouragement from healthcare providers The facilitator appraises an individual's skilfulness (Zinken). *Planning for obstacles:* Facilitator guides participants in finding a solution, supports in making a plan (e.g. how would you know that lemon tea raises your blood sugar levels?) *Positive Feedback:* facilitator praises success and anticipates future success by targeting skilfulness (e.g. if you monitor and apply these priciples, what you will find with time is that you will be able to make sense of the information) *Elicitation of knowledge*: Facilitator elicits knowledge and explores beliefs about diabetes (e.g. what do you know about monitoring?) (Zinken)

Table 4.5 contd. Words and phrases reported in the literature relating to operalisation of Social Learning Theory

Strategy	Participant Focus	Possible Techniques	Educator Behaviour
Emotional Arousal	Attribution Relaxation,	Enhance positive physical states, teach stress management techniques (Kaskci)	The facilitator creates the opportunity for the individual to attribute physiological and affective symptoms
	Biofeedback		*Exploration of physiological state:* facilitator guides recognition and correct attribution of illness specific physiological symptoms (e.g. how did you feel when having a hypo?)
	Symbolic desensitisation	Methods to encourage individuals to cognitively appraise self-management of symptoms. (Jones)	
	Symbolic exposure	Consider alternative interpretations towards physical symptoms Discuss emotional issues (Wdowik)	*Exploration of affective state:* facilitator guides recognition and correct attribution of illness specific emotions (e.g. when you say you feel burned out, could you describe how it feels for you (Zinken)

Table 4.5 contd. Words and phrases reported in the literature relating to operalisation of

Social Learning Theory

Strategy	Participant Focus	Possible Techniques	Educator Behaviour
Outcome Expectancies	Identifying areas of concern for the person with diabetes		Facilitator guides the anticipation of outcomes (benefits and costs) resulting from diabetes related performances (e.g. if you had some information about food, what difference would it make for you?) (Zinken)

Social Learning Theory: key educator behaviours

To develop a list of educator behaviours that support the use of Social Learning Theory, I used the labels from the ‘strategy’ column in Table 4.5 and added specific educator behaviours based on the items in the ‘educator focus’ column. I then provided each of the potential behaviours with an identification label (e.g. SLT 1) to allow easier mapping against the list of DESMOND behaviours that I had already developed.

Mastery Experience: (within self)
SLT1 Facilitates proactive self by using open questions to assist the patient to take responsibility for their learning outcomes, well-being, illness management and setting benchmarks
SLT2 facilitates the development of successful trials by supporting participants to practice desired activity and guides through the task
SLT3 Facilitates self-reflection and self-learning based on previous and current experiences
Vicarious Learning/Role Modelling: (within group)
SLT4 Facilitates the expression (what did you do and how did you do it) of successful attainment by a competent other role model
SLT5 Facilitates the group to solve a problem from within the group, seeks strategies from within the group
SLT6 Facilitates exploration of obstacles met by others during goal attainment
Verbal persuasion:
SLT7 Facilitates participants to find a solution, make a plan
SLT8 Facilitates positive feedback, helping participants interpret the experience as success
SLT9 Facilitates elicitation of knowledge in relation to the desired solution/behaviour
Physiological and Affective States:

SLT10 Facilitates the exploration, recognition and correct attribution/interpretations of specific physiological symptoms (How did you feel…)

SLT11 facilitates the exploration, recognition and correct attribution off illness specific emotions.

Increases Outcome Expectancies by

SLT12Facilitating reflection by individuals on outcomes/consequences (benefits and costs) resulting from diabetes related performance.

Search results: Common Sense Model

Using the steps outlined above I identified 60 papers, 32 of which were extracted after reading the titles and abstracts. The 32 were reduced to 14 papers by assessing each against the five criteria. The details of the final 14 papers are listed in Table 4.6.

All of the papers described studies of health beliefs in people using the common sense model and called for interventions to assist both the exploration and techniques to assist correcting unhelpful beliefs. However, the reported interventions lacked clarity on the components to be delivered and indeed, what was delivered in the intervention. For example, 'provision of information' was often mentioned without detail of how, what, or when information should be delivered. Whilst alluding to the need to influence unhelpful beliefs in people with long term conditions, and being recognised as important frameworks for the development of interventions (Van Puffelen et al 2014, McAndrew et al 2008), none of the 14 papers contained specific behaviours related to educator delivery of an intervention. Six papers described the relationship between illness perceptions/illness beliefs and their impact of self-management of long-term conditions (Malanda 2011, Kaptein 2010a, Kaptein et al 2010b, Hagger and Orbell 2003, Hale 2007 and Horowitz 2003), but did not focus on how this should or could be achieved. In the four papers reporting an intervention designed to test the impact of a common sense model on self-management behaviour beliefs, there was no description of educator behaviours (French et al 2008, Breland et al 2013, Harvey and Lawson 2009, and Phillips et al 2012).

I mapped items found in the 14 identified papers using four headings (Strategy, participant focus, techniques and educator behaviour) to identify the overall descriptions of the operalisation of the Common Sense Model. The mapping details are listed in see Table 4.7.

Table 4.6 The final papers used to identify educator behaviours related to Common Sense Model

Reference	Reported theory	Included reference to Leventhal	Described intervention	Included details of specific concepts related to Common Sense Model	Included details of educator behaviour
Breland et al. 2013	√	√		√	
Malanda et al. 2011	√	√	√	√	
Kaptein et al. 2010a	√	√	√	√	
Kaptein et al. 2010b	√	√	√	√	
Harvey, Lawson 2009	√	√		√	
French et al. 2008	√	√	√	√	
McAndrew et al. 2008	√	√	√	√	
Hale, Treharne and Kitas 2007	√	√		√	
Fowler et al. 2007	√	√	√	√	
Hagger, Orbell 2003	√	√	√		
van Puffelen et al. 2014	√	√	√	√	
Kasteleyn, M.J.et al. 2014	√	√		√	
Horowitz, C.R. , Rein, S.B. , Leventhal, H. 2004	√	√		√	

Table 4.7 Words and phrases reported in the literature relating to operalisation of the Common Sense Model

Strategy	Possible Techniques	Participant Focus	Educator behaviour/Focus
Use all 5 domains of the CSM and identify individual personal meaning (all papers)	Focus on illness beliefs before discussing goals (Van Puffelen et al 2014)	Support participants to teach themselves to become expert self-managers (Breland et al 2013)	Explore participants illness representations before action plan(McAndrew et al 2008)
Use a bottom up approach focusing of behaviours when self-monitoring of symptoms is possible. (McAndrew et al 2008)	How to perform self-monitoring	Explore their own important outcomes. (Van Puffelen et al 2014)	Assess, explore and challenge emotional responses to illness perceptions (positive and negative) (Phillips et al 2012, Fowler et al 2007)
Use a top down approach to provide a conceptual framework when symptoms are absent. (McAndrew et al 2008)	Performance review – monitoring effects of changes (e.g. changes on BG levels of diet and exercise) (Breland et al 2013)		Noting beliefs (Fowler et al 2007)

Table 4.7 contd. Words and phrases reported in the literature relating to operalisation of the Common Sense Model

Strategy	Possible Techniques	Participant Focus	Educator behaviour/Focus
Emotional exploration (Fowler et al 2007) Target key CSM steps (Breland et al 2013) for self-blood glucose monitoring Explore, change and review illness beliefs (Van Puffelen et al 2014)	Group discussion: Identifying beliefs associated with poor outcomes and influencing these (Van Puffelen et al 2014) Integrate cognitive and behavioural techniques (McAndrew et al 2008)		Give information to provide symmetry between disease and symptoms. (Fowler et al 2007) Teach skills related to how to test, how to interpret results, how to respond to results and how to appraise response efficacy. (Breland et al 2013)

Common Sense Model - key educator behaviours

Developing a list of behaviours supporting the use of the Common Sense Model proved difficult due to the lack of descriptions in the papers. This is evidenced by the lack of information in the educator behaviour column in the Table 4.7. I reviewed and summarised the items in the table as potential educator behaviours and labelled each with a code to allow later mapping against the DESMOND behaviours as follows:

The educator will:

CSM1: Explore and challenge currently held cognitive beliefs in relation to the five aspects of the model (Cause, Consequences, Controllability/Cure, Identity, and Timeline)

CSM2: Listen and assist in forming accurate representations of the illness

CSM3: Provide information that assists in the forming of accurate representations of the illness

CSM4: Explore and challenge currently held emotional beliefs about the illness.

CSM5: The use of ‘sensory monitoring’ to correctly attribute symptoms to the illness.

Search Results: Dual Processing theory (the Heuristic Systematic Model)

Using the steps outlined previously, I did not identify any papers. However, as I was keen to see how the literature reported the use of this model, I searched just using the terms the Heuristic Systematic Model. Medline search provided 82 papers and Scopus 696. I reviewed each of the abstracts of the 82 Medline search and the titles of the Scopus search. I retrieved 21 papers that were reduced to ten papers following detailed review using the four questions. Each of the ten papers is listed in Table 4.8.

Ten papers were identified that met three or more secondary criteria, and provided information to complete Table 4.9. Many of the papers explored the complex nature of decision making in relation to risk information, but did not illuminate specific HSM related behaviours that a healthcare professional could use to assist people to process risk information. For example, interventions described how tailoring paper based messages impact on decisions related to smoking cessation (Webb Hooper et al 2013); reducing intake of junk food (Yan c et al 2014); increasing physical activity (Suri et al 2014); and providing general risk information (Kahlor et at 2003). One explored the benefits of using heuristic processing methods versus systematic processing to increase uptake of messages related to risk of prostate cancer (Steginga et al 2004).

I mapped items found in the ten identified papers using four headings (Strategy, participant focus, techniques and educator behaviour) to identify the overall descriptions of the operalisation of the Dual Process Theory (Heuristic Systematic Model). The mapping details are listed in see Table 4.9.

Table 4.8: The final papers used to identify educator behaviours related to Dual Process Theory (Heuristic Systematic Model HSM)

Reference	Reported concept: Heuristic Systematic Model	Included reference to Chaiken	Described intervention	Included details of related concepts to HSM	Included details of educator behaviours
Suri et al. 2014	√	√	√	√	√
Webb Hooper M et al.	√		√	√	
Gibbons, Houlihan and Gerrard 2009	√	√	√	√	
Etchegary, Perrier 2007	√	√		√	
Ryu, Kim 2015	√	√		√	
Yan 2015	√	√	√	√	
Smith et al. 2013	√	√	√	√	
Jonas, Schulz-Hardt and Frey 2005	√	√		√	√
Steginga, Occhipinti 2004	√	√		√	√
Kahlor et al. 2003	√	√		√	

Table 4.9 Dual Process Theory (Heuristic Systematic Model): Words and Phrases

Strategy	Possible Techniques	Participant Focus	Educator Behaviour/Focus
If time available: Promote systematic processing of a positive health message (Suri et al 2014)	Provide information and then stimulate cognitive processing – deep thinking – about how it applies to the person (Suri et al 2014; Gibbons et al 2009)	To engage in systematic processing the individual must have cognitive ability and capacity in relation to the decision task (Smith et al 2013)	Ask open questions (to explore) Avoid commands Provide time for processing Provide follow up (Gibbons et al 2009, Etchegary and Perrier 2007 and Steginga et al 2004))
Induce deeper analytical thought: elaboration (Chaiken et al 2001 Etchegary and Perrier 2007)	Personalised, tailored leaflet (Webb Hooper et al 2013) Target the reasoned path: encourage the person to think about the behaviour before it happens (Gibbons et al 2009) Target 'disadvantage' frame in ambivalent individuals	The level of interest of the participant is linked with increased systematic processing (Etchegary and Perrier 2007)	Provide unbiased information (simple clear messages) (Etchegary and Perrier 2007)

Dual Process Theory (Heuristic Systematic Model): key educator behaviours

Developing a list of potential behaviours appeared initially easier due to number of specific entries in the educator behaviour column in Table 4.9. I was conscious that I did not want to lose the meaning of the behaviour related to the theory. For example: using the words ‘use open questions’ appears to be theory unrelated. Hence, I have added the potential theory related purpose behind the use of such questions.

The educator will:

DPT1: provide the least possible information, facilitating the exploration of knowledge and information within the group

DPT2: use open questions to keep the participants of the group engaged in dialogue related to the subject/topic

DPT3: use open questions and reflective discussion to enable participants to explore in a deeper, analytical manner.

Search Results: Empowerment based principles

I repeated the steps outlined in section 4.4.2 to search for literature related to Empowerment-Based Principles. However, the initial search using the term ‘empowerment’ highlighted many results (for example, the Medline search retrieved 29781 articles) that appeared to be unrelated to developing an intervention based on empowerment principles. Many used the term empowerment as an outcome measure rather than as an underpinning construct. A review of a sample of papers relating to the approach described by Anderson and Funnell, found that the term empowerment-based was more useful and specific. I used this term for the search, as it focused the search more on interventions and practical applications of related principles.

Using the steps previously outlined, but using the key word ‘empowerment-based’ rather than empowerment, identified 434 papers, 39 papers were extracted after reading titles and abstracts. The 39 were reduced to 22 papers by assessing each against the five criteria. The details of the final 22 papers are listed in Table 4.10.

Empowerment Based Principles: Words and Phrases

I scrutinised each of the 22 papers for words and phrases that provided behavioural descriptions for how empowerment-based principles had been operationalised in the reported intervention. Anderson, Funnell, and one of their research associates, Tricia Tang, published eleven of the 22 papers. The majority of the papers related to the development of an intervention underpinned alone by empowerment based principles or used empowerment based principles alongside other theoretical approaches and provided a rich source of descriptors - see Table 4.11.

Table 4.10: Search Results for Empowerment based principles and application of secondary inclusion criteria.

Reference	Reported theory	Included reference to Anderson and Funnell	Described intervention	Included details of related concepts Empowerment based principles	Included details of educator behaviour
Kuo, Lin and Tsai 2014	√	√		√	
Arvidsson et al. 2013	√	√	√	√	√
Tang, Sohal and Garg 2013	√	√	√	√	√
Tang et al. 2012a	√	√	√	√	
Spencer et al. 2011	√	√	√	√	√
Tang et al. 2011a	√	√	√	√	√
Loukanova, Molnar and Bridges 2007	√	√		√	
Siminerio, Piatt and Zgibor 2005	√	√	√		
Funnell et al. 2005	√	√	√	√	√
Anderson et al. 1995	√	√	√	√	√
Yeung, Oh and Tang 2014	√	√	√	√	
Tang 2012	√	√	√	√	
Kyung Chang, Fritschi and Kim 2012	√	√	√	√	
Tang et al. 2012b	√	√	√	√	
Tang et al. 2010	√	√	√		
Tang et al. 2011	√	√	√	√	√

Table 4.10 contd. Search Results for Empowerment based principles and application of secondary inclusion criteria.

Reference	Reported theory	Included reference to Anderson and Funnell	Described intervention	Included details of related concepts Empowerment based principles	Included details of educator behaviour
Naik et al. 2011	√	√	√	√	
Tang et al. 2014	√	√	√	√	
Anderson et al. 2009b	√	√	√	√	√
Bastiaens et al. 2009	√	√	√	√	

Seven papers (five from Funnell and Tang) provided educator behavioural descriptions; however many used challenging phrases to describe the delivery aspects of the intervention. For example, educating patients to promote informed decision-making rather than adherence/compliance. The word ‘education’ implies the giving of knowledge, and would need greater description to support ‘informed decision-making’ rather than supporting ‘compliance’. It appeared likely that being described might not be sufficient to be understood as operationalised behaviour. My observation was supported by the findings of a systematic review/meta-analysis empowerment based interventions (Kou et al 2014).

Lastly, Anderson and Funnell (2012) commented that ‘the empowerment approach does NOT *(their capitals*) involve convincing, persuading, ‘‘empowering,’’ or changing patients (or getting them to change).’ This was another potential behaviour identified in terms of what would not happen in an intervention.

Table 4.11 Empowerment based principles: words and phrases

Strategy	Possible Techniques	Participant Focus	Educator Behaviour/Focus
The major elements of empowerment based approach: Building partnership; Identifying ones problems or concerns; Goal setting and action planning; Utilization of resources; Communication with HCPs; Overcoming obstacles; problem solving and reflection or review of changes (Kuo et al 2014) Approaches based on motivational interviewing (Spencer 2011)	Initiates patients to take responsibility for managing their own condition; enhances problem solving skills and increases SE (Kuo et al 2014)	Self-awareness and self-motivation; (Kuo et al 2014)	Elicit participants goals and help them formulate their own action plans (Siminario et al 2005) Elicit participants experiences and requests for information to be provided during the sessions (Spencer 2011)

Table 4.11 contd. Empowerment based principles: words and phrases

Strategy	Possible Techniques	Participant Focus	Educator Behaviour/Focus
Order and flow dependent on participants needs Affirming that the person with diabetes is responsible for and in control of the daily self-management of diabetes; Educating patients to promote informed decision making other than adherence/compliance; Learning to set behavioural goals so that patients can make changes of their own choosing; Integrating clinical, psychosocial, and behavioural aspects of diabetes self-management (Funnell et al 2005)	Requires flexibility and excellent facilitation skills to ensure that all patients have a chance to speak and have questions answered and to ensure that educators can respond to misinformation provided by group members. (Funnell et al 2005)	Reflecting on their self-management experiences Discussing emotional experience of living with diabetes (Funnell et al 2005)	Facilitate discussion of emotional experience of living with diabetes Answer clinical questions rather than providing pre-determined content (lecture) Engage in systematic patient centred goals setting and problem solving (Funnell et al 2005)

Table 4.11 contd. Empowerment based principles: words and phrases

Strategy	Possible Techniques	Participant Focus	Educator Behaviour/Focus
Affirming the participants as experts on their own learning needs; Affirming the ability of participants to determine an approach to diabetes self-management that will work for them; Affirming the innate capacity of patients to identify and earn to solve their own problems; Respecting cultural, ethnic and religious beliefs of the target population; Creating opportunities for social support; and Providing ongoing self-management support. (Funnell et al 2005	Use metaphors to increase engagement of participant (Funnell et al 2005) Problem based learning to stimulate participants to dare to be active in the discussion: to ask questions; activate prior knowledge and appraise new knowledge and its application in their own lives (Arvidsson et al 2013) Participant's self-management questions and concerns guide the group discussions. (Tang et al 2012)		Demonstrate 5 step behavioural goal setting process Demonstrate the process of problem solving Demonstrate group based facilitation of 'evaluating the behavioural experiment' Demonstrate empowerment based facilitation (*) *Active listening *Asking open ended questions *Making reflections *Clarifying personal values (Tang et al 2011, 2012 and 2013)

Empowerment Based Principles: key educator behaviours

Identifying potential ‘Empowerment Based Principles’ educator behaviours was less of a task, as many of the columns in Table 4.11 contained items. But again, to avoid losing the meaning of the behaviour, I needed to include a purpose in some of the behaviours.

The educator will use open questions and reflection to facilitate:

EMP1: Prompting of exploration of challenges with self- management

EMP2: Prompting of exploration of the fact that participants are the ones who can effectively manage their condition

EMP3: Prompting of problem solving by the participant

EMP4: Prompting of exploration of meaning

EMP5: Prompting exploration of feelings

EMP6: Prompting personalised goal setting/action planning

EMP7: Prompting personal commitment to action

EMP8: Use interactive teaching strategies that assist personalised learning from content developed by participants

EMP9: Spend more time listening than giving advice

EMP10: Avoid Lecturing: defined as not presenting information not brought up by the group

EMP11: Avoid Judging – both positive (well done) and negative (that is not good enough)

Summary: review of the wider literature for descriptions of educator behaviours.

By reviewing the literature related to the DESMOND theories, I developed a set of 31 behaviours across the four theories, to compare with the behaviours in the current DESMOND assessment tool. However, whilst I identified a number of behaviours directly from the search, many authors did not describe their interventions specifically in terms of individual behaviours. Hence, in order to provide a comprehensive list, I had to interpret their words into possible behaviours. As noted throughout this section, there is a clear need for interventions to be specified in greater detail regarding what and how educators should be doing, and not doing.

Following the identification of behaviours for each theory, I combined these to form a full list of theory based educator behaviours in readiness to compare with the DESMOND list of behaviours.

4.5 Assessment of the content validity of the DESMOND assessment tool.

This section describes how I used the two lists of educators to assess the content validity of the DESMOND assessment tool. By identifying the entire domain of content related to the DESMOND theoretical concepts, I created a list of 31 theory based educator behaviours, as described section 4.4. I next compared how many of the DESMOND educator behaviours (n100: described in section 4.3 and listed in Appendix 4) could be mapped onto the theory based list. By doing this, a percentage based level content validity could be established in terms of the percentage of DESMOND behaviours that mapped onto the theory based behaviours.

Aims

To assess content validity of the DESMOND assessment tool by calculating the percentage of DESMOND behaviours that are congruent with theory based behaviours.

Method

Two lists were developed and compared using a three-step process:
Step 1: For both lists, each behaviour was identified using a discrete code (see section 4.4).
Step 2: The behaviours from the DESMOND assessment tool (n=100) were compared with the theory based behaviours. This process identified theory based behaviours from the literature that were not present in the original DESMOND assessment tool list.
Step 3: The behaviours from the literature-based list were then mapped onto the DESMOND list to identify behaviours that DESMOND had included but were not included in the list identified from the literature.

Results

Overall, 77/100 of the DESMOND behaviours mapped easily onto the literature-based list, suggesting that the content validity, based on the literature, is acceptable (Wynd, Schmidt and Schaefer 2003).

23 DESMOND behaviours could not be mapped (these are listed in Table 4.12) and I reviewed these further to understand how they related to the delivery of DESMOND. Of the 23 behaviours not linked to the DESMOND theories, ten were related to setting up the session (A1-A6, A8, G1, G3 and L3) and six to group management strategies (A7, B3, J9, K2, L1 and CO5). Three related to supportive activities (D9, H10 and K3) and the last four related to emotional processing or being non-judgemental (F2, CO10, CO12, CO16). One of the last group of behaviours highlights the complexity of some of the DESMOND behaviours:

Demonstrates empathy using words or phrases (reflective questioning) that show you have recognised what life is like for that individual (entered the persons world) and/or recognised their emotions; noticing their unique experience. (C10)

This behaviour may relate to the empowerment based ‘exploration of feelings’, however for it to be objectively assessed would need to be more specifically

described.

When comparing how many of the theory based list could be mapped onto the DESMOND list, five of the 31 behaviours could not be accounted for. Further examination of these (listed in Table 4.13) showed that four of them related to generating views, experiences and expectations of participants, with the fifth one relating to the talk time of participants. The five behaviours that could not easily be mapped need to be considered further as to how they could be incorporated into a future DESMOND assessment tool. For instance, item EMP9 ‘spend more time listening than giving advice’, seemed to be related to the quantitative aspect of the DESMOND assessment of ten second event coding of talk time, that measures who is doing most of the talking within a session, highlighted in Chapter Three.

Table 4.12: Behaviours from the DESMOND list that were NOT found on the theory based list

A1	Prepares room and resources for the programme
A2	Begins the session on time and introduces themselves/any observers and their roles
A3	Welcomes participants and their accompanying person
A4	Provides necessary housekeeping, health and safety information
A5	Explains the aim of the day and the rationale for the course
A6	Outlines the style of the sessions
A7	Answers questions relevant to this session
A8	Introduces the Patient Handbook and the Action Plan
B3	Ensures everyone in the group is heard and given time to tell their story
D9	Supports participants to plot their own HbA1c results onto their own My Health Profile
F2	Acknowledges feelings
G1	Have all flip charts visible
G3	Outlines main topics covered in the rest of the programme
H10	Facilitates completion of the My Health Profile
J9	Avoids giving unsolicited generic healthy eating messages.
K2	Works with co-educator to deliver this session
K8	Provides individual time for those with specific needs
L1	Uses flip chart to review individuals burning questions
L3	Brings session to a close and thanks participants for their contributions
CO5	Uses participants words/phrases and analogies when working through the session content
CO10	Demonstrates empathy using words or phrases (reflective questioning) that show you have recognised what life is like for that individual (entered the persons world) and/or recognized their emotions; noticing their unique experience.
CO12	If people attend but choose not to make changes, that is respected by the Educator
CO16	Facilitates participants to contribute in a way in which they feel comfortable by acknowledging contributions

Table 4.13: Behaviours from the theory based list that were NOT included in the DESMOND list

EMP2	Prompts exploration of the fact that participants are the ones who can effectively manage their condition
EMP7	Prompts personal commitment to action
EMP9	Spend more time listening than giving advice
SLT8	Facilitates positive feedback, helping participants interpret the experience as success
SLT12	Increases Outcome Expectancies by facilitating reflection by individuals on outcomes/consequences (benefits and costs) resulting from diabetes related performance

4.6 Chapter summary, discussion and limitations

This chapter documented the steps I took using Wynd's (2003) initial steps to assess the content validity of the original DESMOND assessment tool. Operational descriptions of the theories underpinning DESMOND were identified from a structured literature review. Comparison of the DESMOND behaviours with the theory based list provided me with an initial measure of content validity in that 77% of the items were backed by theory. The 23 remaining DESMOND behaviours that could not be mapped to the theory based list related to group management and facilitation. When reversing the mapping process, five theory based behaviours were not found in the assessment tool, these will be reviewed in the final chapter of this thesis.

This work highlighted a number of issues that should be considered by those who are responsible for the development of assessment tools for programmes. First, the process confirmed the complex nature of the original behaviours in the DESMOND assessment tool. Such complexity is likely to result in different interpretations of the observed behaviour by assessors, leading to a low level of reliability in the use of the tool to assess educators.

Second, I have highlighted how reports of interventions rarely describe how the underpinning theory was operationalised in the intervention and specifically, how the target behaviours are expected to be delivered by educators. Hence I argue that many interventions are theory *inspired* rather that theory based (Michie and Prestwich 2010). Furthermore, the majority of the papers I included did not report whether a process was included for checking if the techniques purported to be included in their intervention were delivered. Intervention fidelity monitoring in relation to the delivery of interventions appears to be elusive.

Third, the need to ensure any quality assessment tool for an intervention incorporates all key aspects of its underpinning theories to provide a comprehensive assessment of the delivery of the theory as a whole, rather than in part. This chapter has highlighted how, whilst the development of the DESMOND programme was

informed by the four theories, its assessment tool does not take into account all of the relevant aspects of these, for example, the explicit mapping of theory related educator behaviours onto each session delivery.

The final issue relates to the use of meaningful words and phrases to represent theories in action. How intervention components were described varied across the reviewed literature. I summarised descriptions into four types of descriptive categories.

1. Descriptions of the planned strategies, for example building partnerships and using approaches based on motivational interviewing.
2. Descriptions of the techniques, for example, “use metaphors to increase engagement of participants”.
3. Descriptions of the desired behaviours of the educator, for example “eliciting participants’ experience”.
4. Many interventions described strategies and techniques together.

However, overall, there was no systematic framework for describing an intervention in terms of educator behaviours.

It is important to reflect on the strengths and limitations of the work reported in this chapter. The search strategy was successful in identifying a number of papers that reported the use of the theory-based concepts. The Empowerment and Social Learning Theory searches provided larger numbers of papers than the other two searches. This appears to suggest that they are being used widely in the development of such interventions or potential interventions. The initial search did not identify some interventions that I would have expected to see in the results, for example the Xpert Programme (Deakin 2006) which describes using an empowerment approach to develop a structured education programme.

I chose to use two databases to provide the literature for pragmatic reasons. Given the programme of work in my PhD, I was aware of the time available for each step of my research. However, if I had used a wider number of databases, I may have identified different literature.

A lack of clarity about what intervention providers would be expected to do, prevented me from developing a list of behaviours that I was certain matched each other entirely. Ideally, I would have undertaken a method of gaining agreement by a range of experts. Indeed, to have agreed definitions is possible, as shown by the detailed work undertaken to create the Behaviour Change Taxonomy v1 (Abraham, Michie 2013).

A recurring theme in the literature on empowerment-based interventions was that the subject content of these programmes is generated from the participants and not guided by a curriculum. The DESMOND educator curriculum contains a sample script, which is often followed by the educators in some detail (as I have observed). The manual suggests that the script should be used to support new educators as they start to deliver the programme. The script provides a detailed menu of content-based discussions that may focus the educator more on the content rather than the actual delivery process e.g. how to engage participants. However, this seems to be in contrast to developing content based on the needs of the participants in the group.

I undertook one aspect of content validity assessment, the relationship of the literature to the behaviours. To fully assess content validity of the behaviours of the original DESMOND assessment tool would require a review agreement by a panel of experts. Before doing this, the DESMOND behaviours, which were complex and overlapping, would need to be constructed into single, observable, educator behaviours rather than a mix of behaviour, programme content and participant related purpose. Many papers did not describe the approaches taken to assess/check whether the stated techniques/strategies were actually delivered as planned (fidelity assessment). There appeared to be an inherent assumption that they were. If steps had been taken to assess the fidelity of delivery of the interventions, researchers may have recognised the lack of clarity in their operational definitions. This purpose of this review, however, is not to discover the effect of the interventions but to see how such interventions are operationally described. There have been recent calls for better reporting of intervention components and fidelity assessment (for example: (Kuo, Lin and Tsai 2014, Chen, Ruey-Hsia and Tang 2011, Radhakrishnan 2012, Loveman, Frampton and Clegg 2008, Hoffmann et al.

2014). My review echoes this.

This chapter has provided some evidence that the DESMOND assessment tool has some validity in relation to theory based content. However, given the challenges I found during this process, further study needs to be undertaken to ensure that the behaviours in both lists are agreed as relevant and representative of the concepts. I undertook this work to provide me with confidence in the potential of the original DESMOND assessment tool to act as an effective coding tool for use in my research. Operational definitions that could be taken forward to a new assessment tool were hoped to be identified, but this part of my study has highlighted the need for further consideration of what makes an operational definition of behaviour. The next chapter (Chapter Five) focuses on how the behaviours within the original DESMOND assessment tool were assessed further regarding their operational definition in order to develop them into a reliable assessment tool to analyse the delivery of DESMOND.

Chapter 5: Developing and testing a revised DESMOND Assessment Tool

5.1 Introduction

Chapter Four described how I evaluated the content validity of the original DESMOND assessment tool, by comparing the behaviours in the tool to behaviours identified from a structured literature review relating to the four theories and principles underpinning DESMOND. I was able to demonstrate that the assessment tool showed good content validity in relation to the theoretical literature.

However, during the process of reviewing the DESMOND behaviours, I identified a number of concerns that potentially undermined the assessment tools' objectivity and reliability, echoing the findings of previous evidence (Cradock 2011). First, the large number (100) of behaviours for observation by assessors could contribute to observer burden. Second, many behaviours combined descriptions of both content and the process of delivery, which could cause confusion for assessors about which aspect they should be trying to observe. Third, the subjectivity of the language used for some behaviours (i.e. 'the educator uses reflection; the educator uses appropriate humour') is likely to further reduce assessor reliability, as it is reliant on interpretation by the assessor.

The revised assessment tool is a potential replacement for the original tool used to assess DESMOND educators and as such would be used by a number of assessors. Before others can use an assessment tool reliably, the target behaviours need to be as specific as possible. Objectively observing educator delivery of predefined behaviours may be likened to the method of structured observation. Making observation structured requires explicit rules for both the observation and recording of the educator behaviours (Bryman 2008). In order to develop the original assessment tool into a more objective and reliable version, I was guided by other work in this field and planned a stepwise

approach for the development of explicit rules in relation to: what should be observed, when to observe this and how to record the observation.

Structured observation is described as a method of observing behaviours using well designed tools to support the collection of data in relation to what people do in defined situations, rather than relying on what people say they do (Bryman 2008, Bryman 2015, Denscombe 2008). A well designed, structured observation tool has a number of functions: It enables observers to look for the same things, it allows for the observations to be recorded systematically and thoroughly, producing data that can be analysed. Finally it enables relatively accurate observation with reduced observer bias, allowing the observation tool to be used by a number of observers (Denscombe 2008). However, for a tool to fulfil these functions, its development requires systematic attention to a number of steps (Bryman 2015, Denscombe 2008). These steps form the structure of this chapter and are outlined in Figure 5.1 below.

Chapter Aims

The overall aim for this chapter is to describe the steps taken in the development of a revised DESMOND assessment tool suitable for use as a structured observation tool.

The specific aims of this chapter are to report the methods and results from a series of small studies used to answer the following questions:

(1) What DESMOND behavioural descriptions should be included and how suitable are they for inclusion into the revised DESMOND assessment tool?

(2) What is the optimum design and coding procedures to incorporate the behaviours into a structured observation tool?

(3) What training of coders and changes to the revised tool are required to optimise its use by coders.

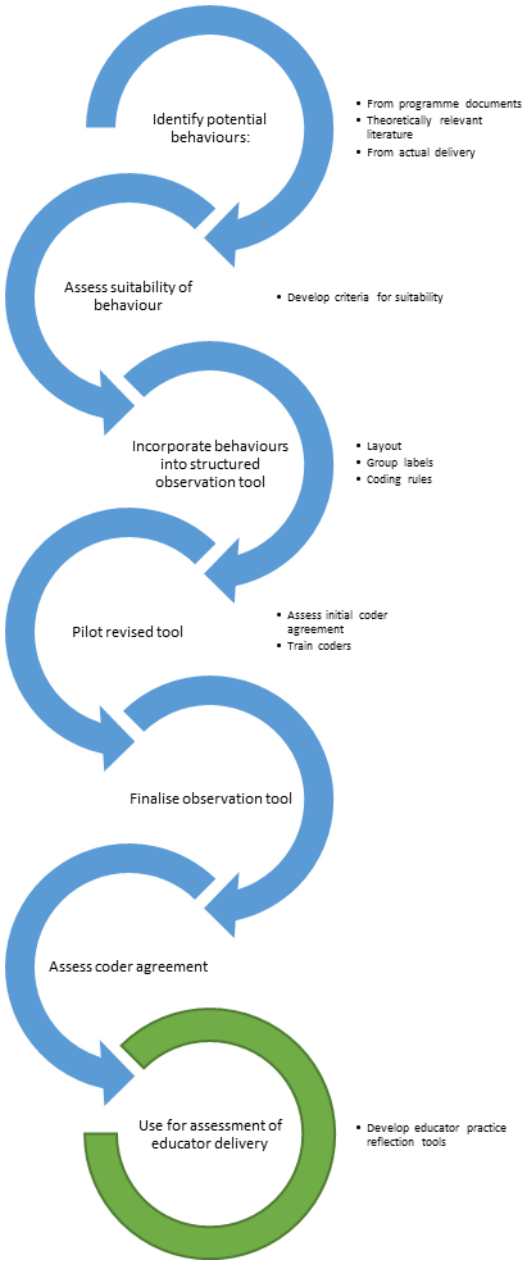
(4) What is the inter-coder reliability of the revised assessment tool?

My personal bias

Given my involvement with the development of the original DESMOND

assessment tool and my interest in this work, I decided to use an open and facilitated approach, involving others, for all of the steps involved in the revision of the DESMOND assessment tool. Facilitating others to discuss and make key decisions allowed my own views to be taken into account but along with others.

Figure 5.1 Overview of steps taken to revise DESMOND assessment tool



5. 2 Identification of suitable DESMOND behavioural descriptions to be included in the revised DESMOND assessment tool.

I reported in Chapter 4 that the original DESMOND assessment tool contained many behaviours used to observe and assess educator behaviour. Whilst revising the DESMOND assessment tool, I decided to consider other DESMOND congruent or proscribed (non-DESMOND congruent) behaviours that educators may use as part of their delivery and which might not be currently included in the assessment tool. Identification of such behaviours provides additional information about the fidelity of delivery (Waltz et al. 1993a). Such behaviours could potentially be found in the DESMOND educator resources, the DESMOND Educator Manual and curriculum that are provided during educator training. The educator curriculum combines a description of the desired behaviours (outlined in a box at the front of each session) with a detailed session plan, described as "containing all the prescribed activities" (The DESMOND Collaborative 2010) Chapter 8 p2). . As noted in chapter 4, many of the behaviours from the original assessment tool were complex and as such may not be suitable for inclusion in the final assessment tool. Following identification of a behavioural description, I needed to ensure its suitability for inclusion into the revised tool. To do this, I needed to decide upon the criteria for classifying the specificity of a behaviour's description.

Aim

To identify DESMOND educator behavioural descriptions and their suitability for inclusion in the revised assessment tool

Method

<u>Procedure</u>

First, the identification of observable behaviours likely to be used by educators in the delivery of DESMOND required review of any resources provided to educators to support their delivery of the programme. Second, each of the identified behaviours were assessed for their suitability as an objective behavioural description.

Sample

The first set of behaviours were taken directly from the DESMOND Core behaviours list (Appendix 2). Additional behaviours were identified from the written curriculum provided to educators following training. As the DESMOND programme is delivered over six hours, supported by the large detailed curriculum, I considered that reviewing the whole of the curriculum would be too large a task, given available resources, and I opted for a pragmatic approach to identifying additional behaviours. First, I reviewed one of the larger curriculum sessions (larger in terms of time and amount of educator activity): Session C: Professional Story 1, and identified additional behaviours. Second, I reviewed the curriculum chapters that specifically related to the operationalisation of the underpinning theories and philosophy (chapters 3, 4 and 5) and facilitation skills (chapter 6).

Data collection

Each DESMOND educator resource was read through in order to identify possible phrases that represented instructions to the educator on how to behave.

Data Analysis

Following identification of potential behaviours, each description was assessed using *a priori* criteria for a suitable behaviour:

(1) The item focuses on the action of the educator (i.e. not the action of the participant)

(2) The item is observable (i.e. it can be seen to be delivered rather than, for example, be inferred).

(3) The item description starts with an active verb (e.g., ‘asks’)

I mapped each of the possible behaviours against the criteria. Those that met the criteria were added to the list of behaviours to be included. Behaviours that did not meet the criteria were reviewed and considered how they could be changed to meet the criteria. For example, if an item contained both a behavioural description and also referred to the behaviour of the participant, then I would remove the part related to the participant behaviour. To allow me

to review the changes I made to the original DESMOND assessment tool, I created a database of the origins of each of the behaviours. As I reviewed each item, I revised the current DESMOND behaviour database of the possible behaviours (Appendix 5) in relation to their origin in terms of the DESMOND resources and the changes made. This was a complex task and my assessment of the behaviours was checked by, and discussed with two of my supervisors (HE and WE).

Results

The potential DESMOND behaviours

From the educator manual and curriculum, I identified 69 potential behaviours: 43 from the manual sections related specifically to Session C and 26 from curriculum chapters 3, 4, 5 and 6. These were then added to the 36 behaviours already identified from the original DESMOND assessment tool. The final list included 105 potential behaviours, shown categorised in Table 5.1, and listed in full in Appendix 5. Each behaviour was then allocated a unique code.

Table 5.1: Sources of additional potential behaviours to review for inclusion in the revised DESMOND assessment tool

DESMOND Behaviour Source	No. of behaviours identified
Core Behaviours from original DESMOND assessment tool	22
Educator behaviours from Assessment tool for Session C	14
Educator Manual: Session C sample script	43
Educator Manual chapters	26
TOTAL	105

Determining the suitability of each behaviour

Following my initial assessment and changes, for example by removing the content or participant behaviour, and the addition of an active verb, 39 behaviours met all three criteria. A further nine behaviours were able to be refined to meet the criteria. The remaining 57 descriptions consisted of behaviours that duplicated others and/or had very detailed actions (e.g. points to flip chart). The process of mapping and revision reduced the initial 105 to 48 behaviours (see Appendix 6) that were retained for inclusion in the revised DESMOND assessment tool.

As I reviewed the 105 behaviours, themes emerged amongst the behaviours in relation to the type of item they represented. I identified ten overall themes into which each of the 105 behaviours could be placed and that may be a useful guide for others developing behaviours in future work. These are shown in Table 5.2. I noted thirteen behaviours that warranted further consideration of their relationship with the delivery of the programme, despite them not meeting the criteria. As I had retrieved them from the DESMOND resources, I did not want to completely discard them at this stage of my research. These behaviours appeared to be important for the delivery of the programme yet were not specific behaviours; for example, 'facilitates participants to contribute in a way in which they feel comfortable, by acknowledging contributions'. I categorised each of these as complex and documented these separately for consideration later in my research.

Summary of findings

By focusing initially on session C from the DESMOND programme, I had identified a potential 105 behaviours for inclusion into the revised DESMOND assessment tool. Examination of the DESMOND educator curriculum chapters and a single session from that manual (session C) suggested a potential 57 behaviours, which justified the decision I made regarding initially focusing on one of the sessions, due to the large numbers of behaviours generated from the resources for a single session.

Developing three criteria to assess each of the 105 behaviours and a strategy for amending them allowed me to identify 48 behaviours to include as observable behaviours in the revised assessment tool. I now had a list of 48 potential behaviours for developing into an assessment tool focused on delivery of Session C of the DESMOND programme. However, they were not yet organised into a revised assessment tool that could be used by others.

Table 5:2 Overview of characteristics of 105 original behaviours

Characteristic	*No*	*Example*
1. Attitude of educator	2	If people attend but choose not to make changes, that is respected by the educator
2. Combined educator behaviour and content	14	Uses visual tools to enable participants to work out treatment options for managing blood glucose levels.
3. Combined educator behaviour and intended outcome	4	Uses open discovery questions to elicit information from participants so as to develop a picture of what happens in the body with type 2 diabetes
4. Overlap of item with another*	9	Facilitate a discussion to explore what the group know about Type 1 diabetes
5. Intended outcome with unclear behaviour	6	Assist participants to explore misconceptions and gaps in knowledge
6. Potential behaviour but includes subjective meanings	2	Appropriate body language, tone of voice and non-verbal communication
7. Suitable behaviour for inclusion	9	Uses participants words/phrases and analogies when working through the session content
8. Potentially suitable behaviour with small change (e.g. removal of content or making explicit by addition of active verb)	11	Provides time for participants personal reflection including the use of silence
9. Complex item – needs further review**	13	Facilitates participants to contribute in a way in which they feel comfortable by acknowledging contributions
10. Overly detailed action	29	Indicate this by using the diagram of the cell and the rusty locks.

* 30 of the behaviours were noted also to be duplicates as a secondary characteristic

** Behaviours reviewed in section 5.4

5.3 Incorporating the behaviours into a structured observation tool: initial design and coding procedures.

To increase the usability of the revised assessment tool, organising behaviours into groups with meaningful labels would mean the tool was designed in a way that made sense to potential users. Categorising behaviours myself would have introduced a large element of bias, given my role in the design of the DESMOND educator materials and the labels used in the original tool.
As the revised DESMOND assessment tool would be used as a coding tool for observing the delivery of DESMOND as part of my research and potentially as a quality monitoring tool by DESMOND assessors, involving others in the design of the tool would provide feedback at an early stage about aspects of layout and explicitly formulated rules for coding procedures.

5.3.1 Study Design

I used an exploratory study design, incorporating results of one step with the next step. This was partly due to my wish to be as open minded and facilitative as I could be, using the views of others to inform the decisions made about the content, design and layout of the revised assessment tool.

5.3.2 Determining meaningful labels

Aim

To incorporate the 48 revised behaviours into a usable framework that others can use reliably to observe the behaviours of interest during the observation period.

Method

Sort card task

I chose a Sort Card Task method to develop meaningful categories in a systematic way (Rugg, McGeorge 2005). Card sorting provides a level of insight into the mental models of the ‘sorters’ and the meaning they are applying to particular words. Identifying the varied meanings and clarifying these within a

group to reach agreement can help in the design of a tool and optimise its usability. The method involves asking a number of people to sort a number of cards (with each card displaying an individual item to be sorted) into meaningful categories. I decided on a two-stage sort card task, using two different cohorts of users, and considered how to choose the most suitable users to take part in the task (Rugg, McGeorge 2005).

Setting and participants

Previous researchers who had used the sort card task method suggested an ideal range of 6-12 participants in a group, and a lower limit of 35 behaviours to sort (Paul 2008). For the first sort card task, I wanted my participants to have an understanding of social and behavioural science applied to health, but with no direct involvement with DESMOND. I recruited departmental colleagues via email and invited them to a planned 1-hour group session.

Procedure

Once I had introduced the session and explained the task, I provided participants with the cards arranged in a random order by shuffling the cards, each card displaying one of the 48 behaviours as an item to be sorted, and provided the participants with the questions on a flip chart as follows:

- What meaningful groups can be identified within the 48 behaviours?
- Which behaviours should be grouped together?
- Which groups should be linked with each other?
- What other labels should be used to (better) describe the behaviours on the cards?
- Which behaviours overlap?

The sorters worked in two groups. During the hour, I facilitated the group to aid their focus on the task. Before and during the session, I responded to any questions to clarify the task, but left the sorters to work. I photographed the final sorted card groupings to keep a record.

Analysis

A structured open sort card method using established behaviours was the

sorting method of choice, as I wanted pre-defined behaviours (the behaviours were the structure) sorted into categories which the participants would name themselves (Paul 2008). The results from both groups were compared to identify common labels and groupings.

Results

Both groups allocated the cards into ten groups, although one group had a remaining ungrouped item. Both groups provided labels for each group. The labels and the number of behaviours allocated to each label are detailed in Table 5.3 below. The full list of behaviours grouped under each label can be found in Appendix 7.

Table 5.3: Item labels generated from two groups in sort card task 1

Labels developed by Group 1 (n=4)	Labels developed by Group 2 (n=3)
Uses Flipcharts to record (n3)	Non Judgemental approach (n3)
Focuses on what comes out of learning for practice: moving from discussion to action (n4)	Reflecting back content from the group (n8)
Dealing with issues of factuality/facticity (n7)	Checking understanding (n3)
Problem solving (n2)	Functional delivery (n3)
Ask and answer own questions (n2)	Group dynamics (n3)
Prompting discussion (n8)	Planning and Goal Setting (n6)
Time to think (n1)	Non Didactic delivery (n6)
Interpersonal and Facilitation skills/Reflecting back/Summarising (n10)	Empathic delivery (n5)
Making it real (n2)	Elicits thoughts, feelings and beliefs (n5)
Responding to emotion (n9)	Responding to emotions (n5)
	Group did not allocate item 38

There was only one label that both groups used: ‘Responding to emotions’, although the numbers of behaviours allocated to this label differed between the two groups: group 1 allocated nine behaviours, yet group 2 allocated only five behaviours, all of which overlapped with those of group 1. In terms of the other

labels, there was some overlap between the two groups' allocations, albeit with different labels (see Table 5.4).

Due to the lack of congruence of labels allocated by the two groups, the next stage was to take the labels from both groups and use a second sort card task to further refine into meaningful categories.

Table 5.4 Groupings of behaviours from stage 1 sort card task

Behaviours allocated together	Group 1 label	Group 2 label
6 and 22	Uses Flip chart to record	Reflecting back from the group
29,33 and 39	Focuses on what comes out of learning for practice	Planning and Goal setting
40 and 41	Dealing with issues of factuality/facticity	Non Didactic delivery
22 and 37	Problem Solving	Planning and Goal Setting
4 and 5	Ask and Answer questions	Non Didactic delivery
7,8, 10 and 14	Prompting discussion	Elicits thoughts feelings and beliefs
3,25 and 47	Interpersonal and facilitation skills	Functional Delivery
26,43,44 and 45	Interpersonal and facilitation skills	Empathic delivery
12 and 28	Making it real	Reflecting back from the group
16,17,18,19 and 20	Responding to emotion	Responding to emotions
24,46 and 48	Responding to emotion	Group Dynamics

5.3.3 Finalising meaningful labels

Aim

To develop meaningful categories from the labels identified by sorters from the first sort card task.

Method

I used the same Sort Card Task method as before, however with a different

group of sorters.

Setting and participants

I used a structured sort card task (as in stage 1), but this time I provided the sorters with the labels developed at the previous stage. I used DESMOND experts as sorters to finalise the organisation of the assessment tool based on the labels used from the first group. I recruited two members of the DESMOND team (CT and MH), both of whom were identified by the funding organisation as coders to be involved in the reliability assessment of the tool. CT was a DESMOND educator, trainer and assessor, with many years' experience of working with the DESMOND programme. MH was a DESMOND educator. Given this, I decided that involving them in these final stages of the development of the tool and its behaviours would assist in the future tasks.

Procedures

I facilitated this sort card task more actively than the first one, with the aim of establishing consensus within a short period of time. Firstly, the labels developed by the first cohort of sorters were reviewed by the two expert sorters and reduced to a number of labels that they agreed fitted with the DESMOND programme. These labels were then used to sort the individual behaviours by reviewing each one in turn and, following discussion and agreement, placing them in the most suitable label.

Analysis

The questions for this sort card task were:

- Which labels, and behaviours contained within, seem to make most sense?
- Which labels should be rejected?
- Which behaviours belong to which labels?
- Which behaviours are left that need a new label?

<u>Results</u>

The expert sorters mapped all of the labels and behaviours from the first sort card task onto five labels. The expert sorters decided that three pairs of

behaviours overlapped (behaviours 26 and 43 both related to open body language, behaviours 3 and 6 both related to prompting discussions about emotions and behaviours 13 and 14 both related to sharing stories) and therefore these were combined. Two behaviours were deemed confusing/ambiguous and were therefore reworded to allow ease of understanding by coders. Three behaviours could not be added to a category. The final numbers of behaviours were reduced to 46 within five labelled groups (Appendix 8). Table 5.5 shows the final labels (with number of behaviours) and how they related to the previous two sets of labels from the first sort card task.

Summary of findings and next step

The use of the sort card task method succeeded in providing five group labels, incorporating the 46 behaviours. The first group of sorters highlighted the challenge of language used to describe labels and behaviours, i.e. the different possible meanings that one word or phrase can have for individuals. The results of the first groups of sorted behaviours and labels provided a useful basis for the second group of sorters. The expert coders (sort task group 2) identified labels that represented those identified by the first sort task group. These labels then provided a structure to allocate the behaviours. The total number of behaviours were reduced by two following identification of further duplicates. After this stage, the draft revised DESMOND assessment tool now contained 46 behaviours sorted into five categories.

Table 5.5 The relationship of findings from sort card task 1 labels (from groups A and B) to those from sort card task 2

Stage 2 Labels	Stage 1(Group A) Labels	Stage 1 (Group B) Labels
A. Eliciting and Responding to Emotions (5 behaviours)	Responding to motion	Empathic delivery Elicits feelings Responding to emotions
B. Planning and Goal setting (7 behaviours)	Focuses on what comes out of learning for practice: moving from discussion to action Problem solving	Planning and Goal Setting
C. Facilitates non-judgemental engagement of all participants (9 behaviours)	Time to think Interpersonal skills	Non Judgemental approach
D. Overall Group Management (5 behaviours)	Facilitation skills	Functional delivery Group dynamics
E. Facilitates reflective learning (20 behaviours)	Uses Flipcharts to record Dealing with issues of factuality/facticity Ask and answer own questions Prompting discussion Reflecting back Summarising Making it real	Reflecting back content from the group Checking understanding Non Didactic delivery Elicits thoughts, and beliefs

5.3.4 Developing the initial design, coding procedures and comprehensiveness of the revised DESMOND assessment tool.

Introduction

Using the sort card task methods with different groups of sorters resulted in a revised assessment tool that contained 46 behaviours sorted into five categories, with agreed labels. The next stage was to develop these into a structured and reliable assessment tool to assess the delivery of the DESMOND programme. To increase its reliability when used by others, a structured observation tool needs to be easy to use by coders, with clear procedures about how to use it (Bryman 2008).

This next stage involved me continuing to work with the DESMOND experts from sort card task 2 (hereafter referred to as expert coders) to help decide on a number of procedural decisions including the initial layout of the behaviours in the tool.

Working closely with the coders allowed consideration of the comprehensiveness of the developing tool in terms of DESMOND behaviours. To do this, I needed to review two groups of potential behaviours that I had put aside in the early stages of identifying behaviours. First, the thirteen behaviours previously labelled as 'complex' (from study 1) and potential behaviours from the other eleven DESMOND sessions, as so far the tool had been developed with a focus on behaviours from Session C.

Aim

To develop the initial layout, coding procedures and comprehensives of the revised DESMOND assessment tool by:

- Reviewing initial coder agreement to highlight those behaviours that need reviewing.
- Agreeing how the behaviours previously labelled as complex should be considered for inclusion in the tool.
- Reviewing all the remaining eleven DESMOND sessions and highlight any additional behaviours.
- Agreeing and finalising the procedural aspects of the observation process by use of a non-study recorded DESMOND delivery to rehearse

the use of the revised tool.

Design

At this stage, I became more actively involved with the process. My role was twofold: to act as a facilitator of the process and as an expert coder. Although the four steps appeared separate, I used an iterative design process that involved all three expert coders (myself and the two expert coders), combining the following four steps. For example, inter coder agreement highlighted behaviours requiring more attention, which in turn highlighted potential protocol issues related to observing the behaviour.

Determining initial inter-coder agreement

Assessing the initial inter-coder agreement provided an opportunity for the three coders to experience coding a DESMOND session with the list of behaviours to start highlighting issues of layout, meaning, and possible areas of confusion between us as a coding group.

Method

Participants: the three coders consisted of myself and two DESMOND educators (part of the Leicester Diabetes Team), one of whom was also a DESMOND trainer and assessor. The additional coders were allocated to my study based on available time in their schedule and the potential for them being users of the revised DESMOND assessment tool.

Sample

Coders were asked to code a single recorded delivery of a DESMOND session (session C)

Procedure

Each of the three coders (the two expert coders and myself) independently viewed a video recording of a single DESMOND session (a video usually shown during the first part of educator training), and used the revised assessment tool to code the observed educator behaviour. Each behaviour was coded for whether the behaviour was observed in one of three ways: yes (‘seen’) no (‘not

seen') or N/A ('not applicable').

Data Analysis

Each of the behaviours within the three sets of coding results were analysed for percentage agreement of whether there was complete agreement (all three coders agreed), some agreement (two out of three coders agreed) or complete disagreement (none of the coders agreed).

Results

Assessment of the initial coder agreement found just nine (18%) of the 48 behaviours had complete agreement (all three coders agreeing), with thirteen (27%) behaviours showing complete disagreement. The remaining 26 (55%) behaviours showed moderate agreement, with two out of three coders agreeing.

The low percentage agreement provided a benchmark for future assessments of agreement as well as a means to highlight which behaviours required further discussion. Additionally, the experience provided coders with questions on how the tool in its current state needed to change to increase its usability as a structured coding tool.

5.3.5 Inclusion of additional 'complex' behaviours

Aim:

To determine if any of the complex behaviours are already/should be considered for inclusion into the final list of behaviours.

Method

Sample:

All descriptions of behaviours labelled as 'complex' previously put aside for further review (section 5.2 p127)

Procedure:

Each behaviour was discussed in turn by the three coders using the question:

‘Is the behaviour already included in the current list of 48 behaviours or the five labels?’ If the answer was yes, then we excluded the behaviour. If no, then we considered whether the behaviour could or should be included and whether it met the previously developed criteria for inclusion. Disagreements were resolved by referring back to the criteria.

Results

Five of the previously labelled thirteen complex behaviours were identified as already covered in the list of 48 behaviours for the revised assessment tool. Of the remaining eight complex behaviours, two were considered worthy of including as part of the next stage of development of the tool (behaviours Cb19 and DM16). Table 5.6 outlines the decisions made for each behaviour.

Table 5.6: The decisions made following review of behaviours previously identified as complex during review of the overall DESMOND behaviours

Code	Behaviour Detail	Already included	?include
Cb16	Facilitates participants to contribute in a way in which they feel comfortable by acknowledging contributions	Partly	No
Cb17	Uses the curriculum to support the structure of the sessions whilst adapting it to meet the needs of the group	No	No
Cb18	Educators work as a team to deliver a person centred programme	Partly	No
Cb19	Uses time effectively to ensure that the key messages are explored	No	Yes
Cb22	Uses appropriate humour to support group engagement	No	No
CSS (c)6	In order to manage time it may be helpful to park some of those questions by informing the group about the food activities taking place later in the course	Partly	No
CSS (c)36	If any participants are on newer therapies the following explanation of these may be used. If there is no one on these therapies there is no need to discuss them. Participants may be able to explain to the group how the medication works, or the educator may explain in simple terms:	No	No
DM2	Support participants to process and understand new information	Yes	n/a
DM3	Educator behaves in a non-judgemental way to all participants and their decisions.	Yes	n/a
DM4	Educator acts in an empathic and warm manner	Yes	n/a
DM6	Ensuring individuals are supported in developing general self-management skills such as goal setting, action planning and problem solving	Yes	n/a
DM10	Ensures active engagement of all participants throughout the programme	Yes	n/a
DM16	The educator does not lecture or dictate, they use questions (mainly open questions) to elicit the information from the group	Partly	Yes

5.3.6 Inclusion of additional behaviours from the remaining eleven DESMOND sessions.

Aim

To identify any potential behaviours (i.e. a behaviour described but not yet included in the current list of behaviours) from the DESMOND sessions not previously reviewed.

Method

Sample

I developed a list of additional potential educator behaviours from the original assessment tool for the remaining DESMOND sessions (A,B,D,E,F,G,H,I,J,K and L).

Analysis

The expert coders and I reviewed each behaviour, using the previously described criteria (section 5.3) and the questions used for scrutinising complexity as in (2) above. Using the previously developed criteria, potential behaviours were identified. These were further examined for duplication with any of the current behaviours, and if not, were allocated to the most relevant category.

Results

A total of 65 potential behaviours were identified from the remaining DESMOND sessions. Using the previously developed criteria, eight additional potential behaviours were identified and were added to the relevant category in the revised tool. These are listed in table 5.7.

5.3.7. Agree initial layout and coding procedures.

At this stage, with all additional behaviours reviewed, reworded and/or removed, the final number of behaviours for the revised assessment tool totalled 37, organised into the five labels. However, whilst the tool now contained a comprehensive list of DESMOND behaviours, to help make it

suitable as a structured coding tool, a number of procedural issues needed to be decided upon.

Aim

To finalise the coding procedures for the use of the revised DESMOND assessment tool to code educator delivery of the programme.

Method

Procedure

The expert coders and myself discussed options related to three procedural aspects, decided on an initial approach and used it to assess the recording. Each procedure was discussed following its use for coding and a final decision on the choice of procedure was made in relation to each of the following:

1. The time frame in which to code the target behaviours. For example, using a defined time sample (5 or 10 minutes) to assess its presence or assessing the target behaviours presence over the duration of the observed session.
2. The most suitable method for recording the target behaviour's presence. Examples include: cumulative counting of occurrences and simple recording of yes/no of its presence; use of a Likert Scale to assess range of use of target behaviour (for example: most of the time, some of the time, little of the time and none of the time); or general impression of presence i.e. coding as 'tends to' or 'does not tend to'.
3. The optimal layout for the tool.

Results

The group discussed each of the procedural options and agreed initial approaches. The choice was based on what approach appeared to be the easiest to operationalise and would provide the information required for assessment of coder agreement.

Time sampling: initially we agreed to use ten minute time sampling to assess the presence or absence of each behavioural item. The decision to use ten minutes followed a period of practice, and was chosen as it helped keep the attention of the coder on the task. The focused attention allowed the coders to

become more familiar with the task and highlight errors in coding earlier.

Coding the presence or absence of the target behaviour: we decided to use just two parameters, ‘present’ or ‘not present’.

Optimal layout: we identified paper in a landscape orientation with a separate page for each group of behaviours, as the initial format.

Table 5.7 Behaviours identified as potential new behaviours from remaining DESMOND sessions

New behaviours included	DESMOND Session	Assigned to group label
Explains overview of day/session	A and G	Overall group management
Outlines style of sessions	A	Overall group management
Provides time for people to tell their story/quietly reflect on their plan/support specific needs	B	Overall group management
Clarifies understanding of participant's contribution	B	Facilitates non- judgemental engagement of all participants
Supports participants to plot their results on health profile/complete their plan	D	Supports behavioural change, planning and goal setting
Facilitates self- talk about how key messages apply to them as individuals	F	Facilitates reflective learning
Prompts reflection of changes participants have already made (in between session 1 and 2)	G	Supports behavioural change, planning and goal setting
Avoids giving unsolicited general healthy eating messages	I	Facilitates non-judgemental engagement of all participants

.

5.3.8 Summary

Working with the two expert coders provided a means of establishing the initial level of agreement when using the behavioural descriptions in the early development stages of the revised DESMOND assessment tool. Whilst only 18% of the 48 behaviours showed complete agreement, this was unsurprising at this stage and provided evidence for inter coder discussions on the meaning of the words and the rationale for coding decisions.

Working as a team, the expert coders and I were able to agree on the inclusion of outstanding behaviours in order that the revised tool represented a comprehensive set of DESMOND derived behaviours. We were able to practise using the tool and decide upon some initial coding procedures.

The work described thus far led to further development of the revised DESMOND assessment tool, developed as a structured observation tool, and ready for piloting.

5.4 Piloting and final optimisation of the revised assessment tool.

To have confidence in the findings of observation based research, the tool used to generate the observation data should demonstrate reliability when used by more than one observer. The low inter-coder agreement (section 5.3.2) of the first draft of revised DESMOND assessment tool, suggested that the tool was not ready to be used with confidence. Further work was required to optimise the tool in order to improve inter-coder agreement before the assessment tool could be used by others to code educator delivery. Increasing inter coder agreement can involve ongoing training of coders and the development of a coding guidance manual (Torrey 2012).

Assessment of coder agreement can be established by using a range of methods (Shen & Ary 2014). Such methods range from estimates of percentage agreement to more complex statistical methods of reliability including Cohen's Kappa. The use of percentage agreements can highlight areas of concern and can help inform other decisions, for example, about the layout of a tool (Bakeman and Gottman 1997). However, percentage agreement does not account for the agreement occurring due to chance. Once an acceptable level of agreement has been reached, then a more robust assessment of the reliability of the revised tool, using methods that take account of agreement by chance (for example, Cohen's Kappa) should be undertaken (Hallgren 2012). At this early development stage of the revised assessment tool, I chose to assess percentage agreement only. This would allow me to highlight areas of concern related to the layout and structure of the revised tool. I planned to further assess coder reliability, to account for coder agreement by chance, once outstanding questions regarding the revised tool had been addressed (for example, it contains a complete set of behaviours, coding rules have been agreed and layout details finalised).

Aim

The aim of this section is to describe the methods used to pilot the revised assessment tool and how further training was required to establish an

acceptable level of percentage coder agreement for behaviours within the revised DESMOND assessment tool.

Design

To optimise coder agreement, I used an iterative training process involving coders using the tool to code a recorded DESMOND session, assessing the coder agreement and discussing the results as a coder team. The training utilised results of the assessment of behaviour agreement between the two additional coders and myself as the basis for discussions. This allowed the three coders to review and reflect on individual coding results and compare them with the results of the other two coders. Thus it provided a basis for discussing how to change descriptions or clarify meaning. By discussing differences in coding result, coders were able to explain the reasons for the allocation of codes and explore the differences.

Method

On-going assessment of percentage agreement.

By using an on-going assessment of percentage coder agreement to guide me, I refined behaviours whilst simultaneously working to develop a tool that made sense to the coders. Throughout the process, I focused on developing an acceptable level of coder item agreement. I defined acceptable level of coder agreement as complete agreement (all three coders agreeing) on 70% of the behaviours within the assessment tool. My decision for using 70% as the cut off was based on the level of percentage of agreement as reported in a similar study by colleagues (Hardeman et al. 2014).

Coding discussions

I facilitated the process of coders participating in either face to face or teleconference meetings. Each meeting was audio-recorded to allow me to facilitate and take part in the discussions, while at the same time, ensuring an accurate record of the discussions to refer back to.

Coding Sample

Sessions of DESMOND educator delivery for coder training involved using video recordings of DESMOND programme deliveries already obtained. How I obtained these is described in more detail in chapter 6. Sessions C and K of the programme were selected for the piloting of the tool as they represented 25% of the total programme delivery and contained the majority of the behaviours within the revised tool. All three coders used the revised tool to independently code the same single recorded DESMOND session.

Data collection

Each coder was asked to observe and code the behaviour of the educator based on each of the behaviours within the tool. Each behaviour was coded by allocating a tally against the agreed criteria in relation to the presence of the observed behaviour i.e. 'present' or 'not present'. The two expert coders returned the coding results to me either by post or email.

Data analysis

For each of the three sets of coded data, I calculated the inter-coder agreement for each behaviour based on three categories: complete agreement (all three coders had placed their coding mark in the same rating criteria), some agreement (two out of three coders had placed their coding mark in the same rating criteria) and no agreement (each of the three coders placed their coding mark in different rating criteria). I then calculated how many behaviours showed complete agreement to provide the overall percentage coder agreement for the tool.

Procedure

Whilst the level of overall percentage agreement remained below the planned 70%, I used the coding results as a means of feedback and discussion with the other two coders. To do this, I first mapped the three sets of coder results onto a single coding sheet, to highlight the behaviours showing disagreement and sent this to the expert coders by email. Where possible, I facilitated a discussion with both coders via a face-to-face meeting or a conference call, to discuss the inter-coder agreement results. We discussed each behaviour in turn

and, where there had been coder disagreement, I facilitated a discussion with both coders to explore which behaviours were being identified by coders as problematic and asked them to illustrate their reasons for coding. I then made changes to, or reworded behaviours, based on feedback, discussion and agreement. When disagreement was not easily resolved through discussion, for example regarding whether a behaviour was present or not, I provided a transcription of the delivery for us to discuss its presence or absence. However, this was only useful as a means of identifying verbal behaviours.

Development of coding guidance manual

During the initial stages of this work, it became clear that written guidance was required to document our agreed coding decisions. To support this, I developed a coding guidance manual (see Appendix 10 for an excerpt) to support the decisions made on the use of the tool and examples of illustrative behaviours to support coding agreement. The manual was used to support discussions regarding coding decisions at each stage and was adapted to take account of revised behaviour definitions.

Results

Overall, following initial training practice, five rounds of coding and feedback were required before the level of 70% agreement was reached. During these rounds, a number of changes were made to both the layout of the tool, the behaviours themselves and coding procedures.

Layout and number of behaviours

The layout of the revised assessment tool was changed from landscape to portrait, to reduce the amount of wasted space between categories. The initial version of the tool contained 37 individual behaviours contained within five categories. The final assessment tool had 33 behaviours contained within five categories.

Coding procedures: move from time sampling to global coding

Following initial coder training, the ten minute observation time sampling

generated large amounts of data for agreement analysis. Discussion with the statistician (DB) advised that whilst this level of observation frequency may be valuable for detailed analysis of the quantity of the behaviour, for the purposes of my work, this level of detail would not be required to answer my research question in relation to the presence of educator behaviours. Therefore, from round 3, global coding was used, meaning that the behaviour was coded on the basis of a holistic view of the delivery over a single session.

Addition of third coding options: for coding of context relevant behaviours

Whilst the majority of the behaviours were noted as being seen during the delivery, the presence of three behaviours were dependent on certain eventualities happening in the session. For example, the behaviour *denies participant emotional response* could only be coded as present or absent if a participant provided an emotional response. To allow for this, a third coding option of 'not applicable' was provided. Initially this was added to all behaviours within the tool, but after noting that this was not required for most of the behaviours, it was only applied to the three context dependent behaviours.

Change of coding category

The initial coding category was defined as a yes/no response to seeing the target behaviour. The use of a global sampling approach (i.e. coding a behaviour seen over an entire session rather recording each occurrence) demonstrated that the 'yes/no' category was difficult to decide on. For example, terms such as 'uses all (right and wrong) responses to questions to support the group to answer their questions'. Coders found it difficult to code this behaviour as a DESMOND behaviour unless every participant response was observed as responded to. This issue was resolved by amending the coding category from 'yes/no' to 'tends to'. Further, a supporting explanation was added to the guidance manual and to the coding instructions for the use of the coding tool itself.

The inclusion of prescribed DESMOND and proscribed non-DESMOND behaviours

Nine of the original DESMOND behaviours were descriptions of ‘negative’ behaviours, for example, ‘ignored participant emotional response’. During early feedback discussions with coders, rephrasing these as positive DESMOND behaviours created uniformity in the tool. The negative ‘non-DESMOND’ behaviour was kept in the tool, as the polarised description of the behaviours provided coders with clarity. From round 3, this approach was used for each behaviour, i.e. each behaviour in the tool described the target prescribed DESMOND behaviour and its opposing proscribed behaviour, described as a Non-DESMOND behaviour. Figures 5.2 and 5.3 provide an example of the changes from a behaviour in the first tool to the same behaviour in the final tool.

Figure 5.2 Behaviour description example from initial version of revised DESMOND assessment tool Ten minute coding

	Behaviour description	1	2	3	4	5
A3	Acknowledged participant emotional responses (positive or negative)					

Figure 5.3 Behaviour description example from final version of revised DESMOND assessment tool

	DESMOND behaviour	Tends to DESMOND Behaviour	Tends to non-DESMOND behaviour	Non-DESMOND behaviour	Emotional Response not seen
7	The educator acknowledges and/or prompts exploration of participant emotional response			The educator retreats from/ignores/denies participant emotional response	

Levels of Inter-Coder Agreement

The development of the revised DESMOND assessment tool required five practice rounds to reach percentage item agreement of above 70%. Assessment of percentage agreement, in the initial rounds when coding the presence (or not) of the behaviour at ten-minute intervals (Figure 5.1 (a) above), was based on coding indicators allocated in an identical manner. For example, a session with four time samples (i.e. the session ran for 40 minutes) would have four coding indicators allocated by the coders. Complete agreement meant that all four indicators were placed in the same coding boxes. Prior to coder training, percentage level of item agreement was low at 19% (9/46 behaviours), but 51% (24/46 behaviours) showed some agreement, meaning that two out of three coders allocated their coding indicators in an identical manner. Item agreement following initial rounds of training discussions rose to 32%, but as the revised assessment tool now contained fewer behaviours (no=37) this now represented twelve behaviours. Six behaviours (16%) showed complete disagreement.

During the later rounds, as the coding sampling method moved from ten minute time sampling to global (whole session) sampling, the assessment of item agreement was estimated from where the coders placed their single coding indicator for each behaviour. The coding options were then DESMOND behaviour, non-DESMOND behaviour or NOT SEEN. By coding round five, the level of inter-coder agreement reached 72% (24/33 behaviours). Table 5.8 shows the summary of inter-coder agreement in relation to the number of behaviours.

Table 5.8 levels of coder agreement during development phase

Percentage of behaviours that were rated in agreement (3/3 coders) some agreement (2/3 coders agreed) or complete disagreement

Round	No of behaviours	COMPLETE agreement % (no of behaviours)	SOME agreement % (no of behaviours)	COMPLETE DISAGREEMENT % (no of behaviours)
Pre Training	46	19 (n9)	51 (n24)	28 (n13)
1 (post initial training)	37	32 (n12)	51 (n19)	16 (n6)
2	30	53		
3	27	36 (n9)	28 (n7)	36 (n9)
4	25	44		
5	33	75 (n26)	25 (n7)	0(n0)*

***** at this coding stage, only two coding options available for most of the behaviours, allowing only total or some agreement calculation

Five behaviours showed sustained agreement throughout and are listed in Table 5.9. It is unclear as to why these behaviours showed most reliability compared to others, but behaviours six and seven are related by being the only two behaviours under the label *eliciting and responding to emotions*, and were often discussed by coders during the feedback sessions.

Seven behaviours showed poor agreement, with one out of the three coders not agreeing with the coding of the other two coders. The behaviours are listed in Table 5.10. Behaviour 1, relating to open body language, required a number of judgments to be made from a list of potential body language techniques, leading to greater potential for disagreement.

Table 5.9 Behaviours with sustained agreement (with behaviour descriptions from the final revised assessment tool)

Item No	DESMOND behaviour	NON-DESMOND behaviour
6	The educator prompts participants to express and explore their feelings about diabetes during the session	The educator avoids actively engaging participants in emotional discussion
7	The educator acknowledges and/or prompts exploration of participant emotional response	The educator retreats from/ignores/denies participant emotional response.
18	The educator acknowledges when participants decide not to make any future changes to self-care behaviours or beliefs	The educator appears to expect participants to make necessary changes. This may be implicitly or explicitly expressed.
22	The educator prompts the individual or group to problem solve possible barriers to change (e.g their desired changes or possible barriers to self-management)	The educator avoids active problem solving support
23	The educator prompts the participants to reflect on their goals/plans	The educator avoids reflective discussion regarding the goals/plans

During the discussions with the expert coders, confusion often arose from the use of apparently commonplace language. This reiterated the need for clarity of terms, for example, the behaviour described as ‘uses language that supports an empowering approach’ was included as a result of coder discussions regarding the use of judgmental (positive and negative) statements by educators. However, after the use of this phrase for a single round, it was dropped due to lack of agreement on the behaviour that matched this description. To provide a coding option for coding judgmental responses, this was incorporated into

behaviour 2 in the final tool: ‘uses non-judgemental statements in response to participants’ verbal responses’.

Finally, coder discussions highlighted a potential gap in the content of the revised assessment tool: that of behaviours that educators may use in the delivery of DESMOND, yet were not captured in the DESMOND assessment tool.

Summary and next steps

The piloting of the revised assessment tool, using a stepwise collaborative approach between three coders, succeeded in producing a revised DESMOND assessment tool that had good inter-coder agreement with a percentage item agreement of more than 70%. However, eight behaviours demonstrated levels of agreement that suggested more work was required outside of this study. I was unable to review these further due to the availability of the two expert coders to my study.

The approach I used to pilot and revise the DESMOND assessment tool highlighted the complexity of developing behaviours for an observation tool and gaining coder agreement. Despite the two expert coders having experience in delivering DESMOND and one being a DESMOND trainer/assessor, gaining complete agreement between all of us was not possible on all behaviours.

Following the coder training and five rounds of practice coding, we had reached an acceptable 75% percentage coder agreement of the behaviours. I now had a revised assessment tool that could function as a structured observation tool for the purpose of my research. However, this coder discussion highlighted a further aspect of the tool to consider: the identification of possible DESMOND behaviours not included in the DESMOND assessment tool.

Table 5.10 Behaviours with poor agreement (using item definitions from the final revised assessment tool

DESMOND behaviour		Non-DESMOND behaviour
1	The educator uses a range of open body language techniques to support engagement of participants	The educator tends to use more closed body language behaviours
11	The educator prompts the group to discuss/answer their own questions	The educator immediately answers most questions asked by the group
14	The educator prompts all participants to ask questions about issues discussed	The educator rarely invites all participants to ask questions
16	The educator prompts group to summarise their own (group) understanding of the content under discussion	The educator tends to summarise what s/he thinks is the groups understanding (without checking)
20	The educator prompts participants to review the impact of possible choices on their future health	The educator avoid generating discussion about a range of options/impact OR only prompts a single participant to do this
21	The educator prompts participants to talk about what they are going to do as a result of the session	The educator does not ask participants to talk about what they are going to do as a result of the session (or only discusses this with one participant)
27	The educator uses strategies to manages time within session	The educator avoids using strategies to assist with managing time

5.5 Identification of possible DESMOND behaviours not listed in the DESMOND assessment tool

Introduction

When assessing the fidelity of delivery of a complex intervention, the identification of unanticipated delivery components and their relationship with the intervention provide useful feedback to those developing the intervention and related training (Hardeman, Michie 2009, Waltz et al. 1993b). For the DESMOND programme, such unanticipated delivery components would be behaviours that educators may use as part of their delivery. Such behaviours would include those not yet included in the DESMOND assessment tools, manual or curriculum. Identification of such behaviours would allow me to code all possible behaviours delivered by DESMOND educators and to consider their relevance to the delivery of DESMOND. For example, this may include proscribed behaviours. I had planned to undertake this work later in the process as part of my analysis of the delivery of DESMOND in relation to the DESMOND assessment tool (see Chapter Six). However, the iterative work with coders suggested it was a timely point to consider doing this so that any new behaviours could be added to the assessment tool.

Aim

To identify any behaviour used by educators when delivering DESMOND but not included in the revised assessment tool.

Design

I used a pragmatic, in-depth observation of educator delivery using two approaches to identify additional behaviours

Method

<u>Participants</u>

Myself and one of my supervisors (HE) who had no experience of assessing

DESMOND but is experienced in qualitative research

Sample

The previously transcribed video recording of a DESMOND session (session C - developed as part of coder training)

Procedure

As I was very familiar with viewing the recorded delivery that I had been using for activities in section 5.2 to 5.4, I reviewed the transcription of the delivery and listed all the behaviours using the tool. Any behaviour that was evident, but not present, in the tool was listed separately.

To capture behaviours that I may have been blind to, I tasked one of my supervisors (HE) with watching the same video recording and identifying all the educator behaviours she could see in the delivery.

I compared the two lists (mine and HE's) with the behaviours in the revised DESMOND assessment tool. From this I identified behaviours that were novel and could be included.

Results

My own observation identified many behaviours that appeared to represent the opposite of recommended DESMOND behaviours and provided examples for the descriptions in the coder guidance manual. The observation by HE identified 46 behaviours, 15 of which could not be mapped easily onto the behaviours in the revised tool. Further details of the two lists can be found in Appendix 11 (an excerpt of coding transcription) and Appendix 12 for the behaviours identified by HE.

Using the previously adopted *a priori* criteria (section 5.2) for inclusion, six additional behaviours were added to the revised DESMOND assessment tool. The relevance and importance of the behaviour to the delivery of DESMOND was not considered at this stage, but was considered later when interviewing educators (see Chapter 7). The new behaviours were listed under a separate

category labelled: *Additional Behaviours (NOT IN Revised DESMOND Assessment Tool).* Labelling them separately allowed them to be assessed for coder agreement independently from the rest of the tool, which had been previously reviewed in depth by the three coders. The six additional behaviours are listed in table 5.11**.**

Summary

This task identified six behaviours that were not included in the revised assessment tool. The resulting six behaviours were added to the revised DESMOND assessment tool as a separate category, in order that coder agreement could be assessed separately.

Table 5.11 Behaviours identified as potential additional DESMOND behaviours not currently included in the revised assessment tool

No	*Potential DESMOND Behaviour*	*Non-DESMOND Behaviour*
34	The educator only provides new information after group discussion/explorations	The educator provides new information with little exploration within the group
35D	The educator explains/discusses key terms (eg: glucose, HbAic)	The educator avoids discussion of meanings of new terms
36D	The educator engages participants using rapport building skills	The educator avoids using rapport building skills
37D	The educator facilitates full participant engagement in interactive tasks	The educator tends to facilitate interactive tasks with only a few participants
38D	The educator avoids giving their own opinion	The educator gives their own opinion
39D	The educators tone of voice is warm and curious	The educators tone of voice is dominant and autocratic

5.6 Assessing the inter-coder agreement of the final version of the revised DESMOND tool

Introduction

I now had a revised DESMOND assessment tool that was ready to be used as a structured observation tool to assess the delivery of the DESMOND programme. However, the assessment of tool coder agreement had only been assessed during a training process, and did not include agreement relating to the six additional behaviours. Therefore, further assessment of inter-coder reliability was an important next step to provide information that could highlight potential problems. Any such problems could then be considered and addressed prior to the tool's use by DESMOND assessors and educators in practice.

Approaches to the assessment of Inter coder agreement

Assessing coder agreement involves quantifying the level of agreement between two or more coders (Hallgren K.A. 2012). Demonstrating that an behaviour can be coded with a high level of agreement provides confidence in its reliability (Fletcher, Mazzi and Nuebling 2011). As discussed earlier in this chapter, coder agreement can be measured and reported in a number of ways (Suen and Ary 2014). One approach is reporting percentage agreement (as an index of agreement) between coders, which illuminates any differences between coder behaviour. However, assessing simple percentage agreement does not take account of the possibility of agreement occurring by chance, which is key for acceptance of the tool by others (Fletcher et al 2011). Thus, an alternative method of assessing agreement that takes account of chance is required (Bateman and Gottman 1986, (Krippendorff 2011). The most commonly recommended method is the Cohen's Kappa (Suen and Ary 2014).

However, given little work has been done in the specific area of educators delivering structured self-management interventions, there appears to be no prescribed method for this type of reliability. In the development of an observation tool developed to code the use of a brief opportunistic intervention, 3 coders were used to code all available data samples, reliability being

assessed using inter class correlation (Torrey 2012). The use of ICC is cited as preferable to use of Kappa as the latter assesses the overall scale reliability rather than, as Kappa, agreement by item (Stein 2007) The appropriate use of agreement and reliability measures remains a subject of debate in the literature. For example, the terms agreement and reliability have different meanings in themselves, yet are used interchangeably in the literature (Fletcher et al 2011). Amongst the range of options for assessing inter-coder reliability, I selected two commonly used methods, reported in recent literature, used to assess coder agreement of the behaviours within the revised DESMOND assessment tool (Suen and Ary 2014, McHugh 2012). First, calculating the percentage agreement for each behaviour, and second, the Cohen kappa coefficient value for each behaviour.

Aim

To assess levels of agreement and reliability of the revised DESMOND assessment tool.

Method

Participants

Myself and the two DESMOND coders. I and Coder B had experience of using the original DESMOND assessment tool to observe educator delivery for accreditation purposes. Coder C, a health psychologist had little experience in assessment of DESMOND delivery but, as a DESMOND educator, had awareness of the behaviours expected.

Sample

The total amount of available observation data for coding consisted of 88 video sessions delivered by fifteen educators. By using two expert coders as well as myself, I had the option of calculating agreement on the same data sample between three coders. However, due to the coders' availability, this would only have provided reliability data on 25% of the overall data. To provide a larger data set for inter-coder reliability analysis, I used a paired coder approach i.e.

with each expert coder's sample overlapping with mine. I planned that coder pair A (coders SC and expert coder A) would code 50% (n=44) of the individual DESMOND sessions, and coder Pair B (coders SC and expert coder B) would code a different 25% (n=22) of the 88 available individual DESMOND sessions. The decision regarding the proportion of sessions to be double coded was largely based on the availability of the two expert coders. Given the range of timings of the sessions (from five to 55 minutes) I chose not to randomly sample the sessions to be coded. The sample of sessions chosen was balanced across educators and DESMOND sessions.

Data collection

I provided each coder with a pre-recorded DVD recording for each of their allocated sessions to be coded for each of the behaviours within the revised assessment tool. Each session was independently coded using the revised assessment tool. All coded data were entered into a spreadsheet to allow for assessment of agreement. I developed an SPSS database to manage the data for reliability analysis. The planned data consisted of paired data from 44 (Coder pair A) and 22 (coder pair B) of the potential 88 DESMOND sessions.

Data analysis

Two methods were chosen to assess inter-coder reliability: percentage agreement and Cohen's Kappa.

Calculation of index of coder agreement

Assessment of inter-coder agreement involves dividing the number of behaviours on which the coders agreed, by the total number of behaviours, and reporting this as a percentage of the total behaviours, described as an index of agreement (Bateman and Gottman 1997). This requires the development of an *agreement matrix* (Bateman and Gottman 1997); meaning that I plotted the detail of the coder agreements and disagreements to this matrix for each behavioural description. For example, see Figure 5.4. By plotting the coding score allocation by the coder pairs for each session, and subsequently comparing matrices for each behaviour, I could easily identify if agreement

levels were due to systematic areas of disagreement or agreement. Systematic areas of disagreement may suggest a problem with the coding tool itself, rather than the behaviour.

Figure 5.4 An example of an agreement matrix, showing allocation of coder agreement (in bold) and disagreement marks for 39 coded behaviours.

Coding Behaviour No: 27		Coder A			Total	Index of agreement 16/39 x 100 = 41% *Coding score 1= DESMOND behaviour coded. Coding score 2=NON-DESMOND behaviour coded Coding score 99 = behaviour not seen or not applicable.
		1*	2*	99*		
Coder B	1*	11	9	4	25	
	2*	5	3	2	10	
	99*	2	0	2	4	
Total		18	13	8	39	

Assessing coder agreement using Cohen Kappa

As my data were nominal (i.e. three discreet categories: the educator tends to demonstrate DESMOND behaviour, tends to demonstrate non-DESMOND behaviour or behaviour was not observed) and I was analysing inter-coder reliability between two coders (myself and each of the two coders as pairs) I was able to use Cohen's Kappa statistic for the calculation of agreement beyond chance.

Calculating coder reliability using Cohen's Kappa produces possible values that range from -1 to 1, with 1 representing perfect agreement, 0 representing completely random agreement and -1 representing complete disagreement. The interpretation of Kappa values has been informed by the work of Landis and Koch (Landis, Koch 1977) and Krippendorff (2004), who suggest a Kappa value of greater than .60 as meaning substantial agreement beyond chance agreement. Inter coder reliability of coder pairs was prepared for analysis by entering the coding results into an SPSS database. I computed the Cohen kappa value for each set of paired coder data.

Data interpretation

Percentage agreement

Interpreting the level of percentage agreements can be difficult in that it provides a number that, using other methods of assessment, may be different. But a level of 70% agreement or more is cited as acceptable by others (Hardeman, Torrey 2012). As I was using percentage agreement to highlight potential systematic errors in coding as well as to highlight ongoing issues with specific behaviours, I used 70% or more agreement as acceptable.

Cohen Kappa

I used Kappa values (Table 5.12) reported by Landis and Koch (1977) and adapted by Altman (1999) to judge the level of agreement of each item.

Table 5.12: Kappa Value level of agreement (based on Landis and Koch 1977)

Value of Kappa	Strength of agreement
<0.20	Poor
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Good
0.81 – 1.00	Very good

As the value of Kappa is dependent on the marginal distributions of the data, I reported both the Kappa statistical significance (p value) and the calculated 95% confidence intervals (CI) for each item. I tabulated both the Kappa values and percentage agreement for each pair of coders.

Results

Obtaining coding data from video recordings

A total of 39/88 (45%) sessions were coded by expert coder A and 18/88 (20%) sessions by expert coder C. This means that 57 (65%) sessions were double coded overall. This was nine less than the planned 66 (75%) sessions, due to

the limited availability of additional coder time and more than anticipated coder time being taken up by the initial training of coders. The range of specific sessions coded by expert coders are listed in Table 5.13. The final sample remained balanced across educator pairs and sessions.

Table 5.13 The sample of DESMOND sessions allocated to coders (a) and (b)

Programme ID	1	2	3	4	5	7	8	9
Session								
A	b	n/a	n/a	b	n/a	b	b	c
B	c	b	b	n/a	b	c	n/a	b
C	n/a	c	n/a	n/a	n/a	b	b	c
D	c	b	b	c	b	n/a	n/a	c
E	n/a	n/a	b	b	c	b	b	n/a
G	n/a	b	b	c	n/a	n/a	c	c
H	b	c	n/a	b	c	b	b	n/a
I	n/a	b	c	b	b	n/a	c	b
J	b	n/a	n/a	b	n/a	b	b	c
K	n/a	n/a	c	b	b	c	n/a	b
L	n/a	n/a	b	b	c	b	b	n/a
Session F for all deliveries and delivery 6 not available for reliability analysis b = session allocated to coder B c = session allocated to coder C n/a = session not allocated for double coding								

Data for analysis of reliability therefore consisted of:

Coder pair A (expert coder A and myself): 39 sets (39 sessions) of paired observation data for each of the 39 behaviours within the revised DESMOND assessment tool.

Coder Pair B (expert coder B and myself): 18 sets (18 sessions) of paired observation data for each of the 39 behaviours within the revised DESMOND assessment tool.

Assessment of coder agreement using index of agreement

I developed an agreement matrix for each behaviour coded by each pair of coders. Using the agreement matrix, I calculated the index of agreement for each behavioural item on the revised DESMOND assessment tool. These calculations revealed a range of agreement percentages (Table 5.14). Using the predetermined cut off of 70% item agreement, coder pair A showed good agreement (agreement of 70% or more) on nine behaviours, and coder pair B showed good agreement on twelve behaviours.

Agreement between coder pairs.

Mean agreement (item agreement/no of behaviours) was 56% for pair A and 55% for pair B. Whilst percentage agreement varied, some behaviours demonstrated similar levels of agreement and disagreement between the coder pairs for 13 behaviours (behaviours 2, 8, 9, 11, 12, 13, 15, 17, 18, 19, 24, 31, 33) yet very different in three (behaviours 6,23 and 25). For example, behaviour 2 ('the educator uses non-judgemental statements') showed 67% level of agreement by both pairs, yet behaviour 6 ('prompts participants to express and explore their feelings') showed 82% agreement by pair A and 11% by coder B. The latter behaviour (6) was one of the behaviours that showed sustained agreement during the initial rounds of coding (chapter 5).

Overall, both coder pairs agreed on six behaviours: behaviours 1, 8, 9, 26, 33 and 36. To consider why these behaviours showed agreement, I considered them further. Behaviour 26 'The educator prompts reflection of changes already made' demonstrated high level of agreement by both coder pairs of over 80%. However, eyeballing the agreement matrix for behaviour 26 (Figure 5.5), highlighted the level of agreement is actually based on the behaviour being coded as 'behaviour not delivered' for many of the sessions. Three further behaviours (1, 8 and 9) relate to educator behaviours that are very visible, thereby explaining their high levels of agreement. For example, behaviour 9 'the educator uses visual tools and resources'.

In terms of low agreement levels, coder pair A showed poor agreement (less than 50%) for 11 behaviours; coder pair B on sixteen behaviours. On reviewing

behaviours with low (less than 50%) levels of agreement by both pairs (behaviours 5, 18, 19, 21, 22, 24, 27), five of these behaviours (18 to 14) relate to the label ‘Behaviour change, planning and goal setting’. Closer inspection of the decision matrices for these behaviours showed a pattern of these behaviours being coded as either non-DESMOND or not applicable, overall the behaviour DESMOND behaviour *not* being observed. The other two behaviours, 5 ‘the educator avoids giving general healthy eating messages’ and 27 ‘ the educator uses strategies to manage time’ were often coded as DESMOND or non-DESMOND, suggesting confusion regarding the meaning of the target behaviour.

Table 5.14: Percentage agreement index for each behaviour per coder pair.

Beh. No.	Pair A*	Pair B*		Item No.	Pair A	Pair B
1	71	94		20	31	58
2	67	67		21	51	44
3	54	44		22	38	50
4	48	72		23	18	61
5	41	50		24	38	44
6	82	11		25	38	78
7	43	55		26	95	89
8	79	76		27	41	17
9	84	83		28	54	78
10	59	83		29	82	50
11	54	50		30	59	50
12	59	67		31	67	72
13	59	55		32	59	50
14	69	30		33	95	94
15	67	61		34	67	78
16	54	44		35	56	67
17	51	58		36	72	83
18	49	44		37	46	61
19	51	44		38	51	67
				39	74	61

Good percentage coder agreement (>70%) in BOLD

Beh. = Behaviour

Coder pair A: 39 paired agreements

Coder pair B: 18 paired agreements

Figure 5.5: Coding pair 1 (A and B = 39 coded pair data) and 2 (A and C = 18 coded pair data) agreement and disagreement matrix for item 26

		Coder A			Total			Coder A			Total
		1	2	99				1	2	99	
Coder B	1	0	0	0	0	Coder C	1	0	0	0	0
	2	0	0	0	0		2	0	0	2	2
	99	0	2	37	39		99	0	0	16	16
Total		0	2	37	39	Total		0	0	18	18

In sum, the assessment of percentage coder agreement suggests that many behaviours within the revised assessment tool showed poor agreement.

Assessment of coder reliability using Cohen Kappa statistic

Given the results of the index of agreement, there initially seemed little to be gained in assessing the reliability any further, but a number of researchers recommend applying and reporting two measurements of reliability (e.g. McHugh 2012). As a few behaviours showed an agreement index of above 70%, I assessed inter-coder agreement when taking into account agreement by chance.

Kappa calculated agreement for Coder Pair A:

Cohen's Kappa values for Pair A are listed in Table 5.15 (with the exception of Item 26, which could not be computed). Only one behaviour (33) demonstrated a good level of agreement beyond that predicted by chance. Six behaviours showed moderate agreement. The remaining 31 behaviours (75%) showed fair or poor agreement (meaning that agreement almost could have been by chance). Therefore, using 0.4 as the cut off for acceptability, only seven behaviours showed acceptable inter-coder agreement.

Kappa vs percentage agreement for Coder Pair A

For many behaviours, the Kappa value and the percentage level of agreement seemed to be similar. For example behaviours that showed less than 60% agreement, the Kappa values also showed poor agreement. However, five behaviours showed high levels (above 70%) of percentage agreement, whilst Kappa suggested poor agreement (behaviour 1), and moderate agreement (behaviour 6, 8, 9 and 39).

Table 5.15 Levels of agreement for Coder Pair A: Kappa calculated agreement compared with Index of agreement from Table 5.14

Behaviour No	Kappa Value	SE of Kappa	95% CI	Level of agreement	
				Strength of agreement beyond chance (Kappa)	Index of agreement
1	-0.126	0.057	-0.237 to 00.015	Poor	71%
2	0.392	0.113	0.171 to 0.613	Fair	67%
3	0.129	0.125	-0.115 to 0.374	Poor	54%
4	0.122	0.131	-0.136 to 0.379	Poor	48%
5	0.047	0.122	-0.173 to 0.267	Poor	41%
6	0.437	0.169	0.106 to 0.769	Moderate	82%
7	-0.075	0.051	-0.175 to 0.025	Poor	43%
8	0.488	0.149	0.196 to 0.779	Moderate	79%
9	0.487	0.188	0.119 to 0.855	Moderate	84%
10	0.216	0.143	-0.064 to 0.496	Fair	59%
11	0.222	0.133	-0.040 to 0.483	Fair	54%
12	0.330	0.123	0.090 to 0.571	Fair	59%
13	0.310	0.149	0.018 to 0.603	Fair	59%
14	0.335	0.130	0.081 to 0.589	Fair	69%
15	0.120	0.058	0.006 to 0.234	Poor	67%
16	-0.095	0.060	-0.212 to -.022	Poor	54%
17	0.061	0.108	-0.152 to 0.273	Poor	51%
18	0.200	0.120	-0.035 to 0.435	Fair	49%
19	0.257	0.091	0.079 to 0.435	Fair	51%
20	0.030	0.086	-0.138 to 0.199	Poor	31%
21	0.130	0.122	-0.089 to 0.350	Poor	51%
22	0.051	0.094	-0.0133 to 0.235	Poor	38%

Table 5.15 contd.					
Behaviour No.	Kappa Value	Sig. (Kappa p value)	95% CI*	Level of agreement	
				Strength of agreement beyond chance (Kappa)	Strength of agreement beyond chance (Kappa)
23	0.005	0.049	-0.091 to 0.100	Poor	18%
24	0.103	0.093	-0.079 to 0.286	Poor	38%
25	0.264	0.064	0.147 to 0.381	Fair	38%
26	000	No statistics as no variable[1] to compute		N/A	95%
27	-0.116	0.125	-0.256 to 0.235	Poor	41%
28	-0.116	0.063	-0.239 to 0.007	Poor	54%
29	0.484	0.145	0.201 to 0.767	Moderate	82%
30	0.244	0.130	-0.011 to 0.498	Fair	59%
31	0.066	0.120	-0.169 to 0.302	Poor	67%
32	0.088	0.158	-0.222 to 0.398	Poor	59%
33	0.755	0.146	0.468 to 1.000	Good	95%
34	0.476	0.107	0.266 to 0.686	Moderate	67%
35	0.381	0.087	0.210 to 0.552	Fair	56%
36	0.348	0.143	0.068 to 0.628	Fair	72%
37	0.188	0.098	-0.005 to 0.380	Poor	46%
38	0.192	0.109	-0.021 to 0.405	Poor	51%
39	0.480	0.121	0.243 to 0.717	Moderate	74%

[1] Kappa requires coder variability to be able to calculate agreement

Sig. = Significance CI = Confidence interval

Kappa calculated agreement for Coder Pair B

Cohen's Kappa values for Pair B are listed in table 5.16. Five behaviours (1, 25, 33, 34 and 36) demonstrated good or very good levels of agreement beyond that by chance. Seven behaviours showed moderate agreement. 27/39 behaviours showed fair/poor agreement (meaning that agreement could have been by chance). Therefore, 12/39 behaviours reached acceptable levels of agreement beyond chance, meaning they agreed slightly more than Coder Pair A.

Kappa vs percentage agreement for Coder Pair B

Again, for many behaviours, the Kappa value and the percentage level of agreement appeared to relate to each other, for example, with behaviours that showed less than 60% agreement, the Kappa values also usually showed poor agreement. However, some behaviours showed high levels (above 70%) of percentage agreement and yet had a Kappa value that suggested poor agreement (behaviour 28 and 31).

Table 5.16 Levels of agreement for Coder Pair B: Kappa calculated agreement compared with Index of agreement from Table 5.14

Behaviour No	Kappa	SE of Kappa	95% CI	Level of agreement	
				Strength of agreement beyond chance (Kappa)	Index of agreement
1	0.824	0.169	0.493 to 1.000	Very good	94%
2	0.386	0.0184	0.026 to 0.747	Fair	67%
3	0.167	0.148	-0.123 to 0.457	Poor	44%
4	0.524	0.001	0.247 to 0.801	Moderate	72%
5	0.274	0.150	-0.021 to 0.568	Fair	50%
6	0.059	0.051	0.041 to 0.159	Poor	11%
7	0.153	0.199	-0.081 to 0.387	Poor	55%
8	0.523	0.179	0.172 to 0.875	Moderate	76%
9	0.471	0.258	-0.036 to 0.977	Moderate	83%
10	0.581	0.219	0.152 to 1.000	Moderate	83%
11	0.264	0.140	-0.011 to 0.538	Fair	50%
12	0.498	0.157	0.190 to 0.805	Moderate	67%
13	0.318	0.162	-0.033 to 0.176	Fair	55%
14	0.071	0.053	-.034 to .162	Poor	30%
15	0.323	0.146	0.036 to 0.609	Fair	61%
16	0.063	0.172	-0.275 to 0.400	Poor	44%
17	0.284	0.152	-0.014 to 0.581	Fair	58%
18	0.231	0.138	-0.039 to 0.501	Fair	44%
19	0.217	0.512	-0.080 to 0.515	Fair	44%
20	0.333	0.164	0.012 to 0.655	Fair	58%
21	0.135	0.130	-0.119 to 0.466	Poor	44%

Table 5.16 contd.					
Item No	Kappa	SE of Kappa	95% CI	Level of agreement	
				Strength of agreement beyond chance (Kappa)	Index of agreement
22	0.134	0.170	-0.121 to 0.390	Poor	50%
23	0.276	0.169	-0.055 to 0.607	Fair	61%
24	0.196	0.137	-0.073 to 0.466	Poor	44%
25	0.566	0.156	0.261 to 0.872	Good	78%
26	000	No statistics as no variable to compute		N/A	89%
27	-0.144	0.107	-0.353 to 0.065	Poor	17%
28	-0.075	0.060	-0.192 to 0.042	Poor	78%
29	0.280	0.129	0.027 to 0.533	Fair	50%
30	0.250	0.155	-0.053 to 0.553	Fair	50%
31	0.159	0.240	-0.311 to 0.629	Poor	72%
32	0.229	0.153	-0.070 to 0.528	Fair	50%
33	0.640	0.326	0.000 to 1.000	Good	94%
34	0.664	0.150	0.370 to 0.957	Good	78%
35	0.476	0.166	0.150 to 0.801	Moderate	67%
36	0.620	0.185	0.256 to 0.983	Good	83%
37	0.382	0.166	0.058 to 0.707	Fair	61%
38	0.455	0.175	0.111 to 0.798	Moderate	67%
39	0.292	0.177	-0.055 to 0.640	Fair	61%
SE = Standard Error			CI = Confidence interval		

Overall Kappa values

The reported Kappa confidence levels suggested that the agreement levels should be treated with some caution. Three behaviours demonstrated very

good to moderate Kappa levels of agreement across coder pairs: Behaviour 8 (‘the educator uses analogies’), behaviour 33 (‘the educator outlines the style of the sessions’) and behaviour 34 (‘the educator only provides new information after group discussion/explorations’). All three behaviours appear to be objective, in terms of the description being easy to observe.

Fifteen behaviours demonstrated fair to poor Kappa levels of agreement across coder pairs (behaviours 2, 3, 7, 11, 13, 15, 16, 19, 21, 22, 14, 27, 28, 30, 31). Some behaviours may be regarded as difficult to code. For example, behaviour 13, ‘the educator notices and prompts participant discussion of personal health beliefs. However, others, such as behaviour 30, ‘the educator uses co-educator to support delivery of session’, seem easier to code.

Behaviour 1, ‘the educator uses a range of open body language techniques’, had an index of agreement above 70% for both coder pairs, but demonstrated very different Kappa values (-.126 and .874 respectively). Closer inspection of the agreement matrices revealed that coder pair A agreed on 28/39 occurrences, but disagreed for 11/39. Coder pair B, agreed the presence of 14/18 occurrences.

For both coder pairs, the Kappa value for behaviour 26 could not be computed because coder ratings for behaviour 26 were identical. Kappa assesses its value by computing the ratio of variability (Kottner 2009). Where a coder has coded all observations the same, then there is no variability to be computed.

Summary of findings

Assessment of the Kappa level of coder agreement demonstrated that 25% of behaviours showed moderate to good reliability for coder Pair A and 31% behaviours for coder pair B. However, that means that around 70% of behaviours, within the revised assessment tool, showed fair to poor levels of agreement. The varying levels of agreement highlight the further work required on either the definition of the behaviours (making them as clear as possible), guidelines for coding the behaviours or the training of coders using the tool.

Finally, the levels of calculated Kappa confidence levels (95% CI) highlight a potential problem with sample size.

Discussion

The assessment of coder agreement for the behaviours within the revised coding tool showed less than satisfactory agreement. However, establishing the appropriate benchmark for agreement levels is challenging. Whilst higher levels of reliability are required for the acceptability of medical diagnostic tests, in the field of behavioural observation studies, high levels of reliability across target observations are uncommon. Kappa levels as low as -0.059 are reported by Stacey et al (2008) when using raters to assess decision support methods in nursing encounters. Similarly, levels of 0.41 and above, are reported in studies of healthcare communication (Dent et al 2003, Gallagher et al 2004, Fletcher et al 2011 and Clayton et al 2011).

Coder Drift

The description of target behaviours was examined in detail by coders during the five rounds of training and coding, described earlier in this chapter. During the coder-training phase, behaviours appeared to have face validity to both of the additional coders and item agreement was established at 72% at the end of training. However, I did not estimate Kappa levels of coder agreement. Had I done so, I may have highlighted problems earlier. Given the apparent complexity of some behaviours, the disappointing levels of agreement may be related to deterioration of coding ability over time. Coders reviewed the videotapes over a period of six months and I did not account for coder drift i.e. the changes in coder behaviour over time (Bakeman and Gottman 2008). However, another related issue to the precision of the target behaviours may have been underestimated. I required coders to make a judgement regarding the delivery of an educator over a period of time from ten to fifty-five minutes (the minimum and maximum timings of sessions within the DESMOND programme), which may have reduced the precision of observation of occurrences of the behaviours.

The impact of systematic areas of disagreement

To consider the coding options (i.e. the options to code an item as DESMOND, non-DESMOND or not present/not applicable), I looked further at the concept of systematic areas of disagreement (Bakeman and Gottman 1997, Krippendorff 2008). Systematic disagreements are coder disagreements that are seen regularly. For example, if coding instructions contain areas of ambiguity that affect some behaviours more than others. Such a systematic area of disagreement may have been responsible for some coder disagreement in the situation when some behaviours were coded as non-DESMOND or not applicable/not seen. Looking at the agreement matrix for Coder Pair A, I noted 14 (36%) occasions when one coder coded this behaviour as 'non-DESMOND behaviour' whilst the other coder coded the same as 'not present'. For the other coder pair, this occurred on 3 (17%) occasions. For each of these, I (the common coder) coded it as non-DESMOND behaviour, meaning that I believed there were opportunities for the educator to respond to. The other coders indicated that there were no emotional responses to respond to. This type of difference appeared to affect a few behaviours. Hence, being clearer about when to use 'not present' or 'not applicable' in training materials may avoid such errors.

Coder training

Despite the additional coders being experienced in the delivery of DESMOND and one being a trainer and assessor, neither coder pair performed better than the other. I may have underestimated the level of training that the two additional coders required. Options to overcome this could have included shortening the time-frame for return of coding data, providing additional agreement checks throughout the process, and using my observation data as 'true' to train the other two coders to a point where their coding data matched that of mine (i.e. calibration).

Coder familiarity and objectivity

Any method of observation is prone to errors related to validity and reliability (Bowling 2011), especially if observers of behaviours are familiar with the context of the behaviour. Human beings tend to filter out what is usual

(Denscombe 2008). Hence, when being asked to observe usual behaviours they see in practice, observers collecting data will require an observation tool to help them focus on the usual, and identify them almost as unusual. This may have been the case for the two expert coders, both of whom were very familiar with delivery of the DESMOND programme. Further training may need to take account of this.

The variation in item agreement may be illuminated by the findings of the qualitative analysis of educator views and will be explored further in Chapter Seven. My results have, however, highlighted potential concerns with the definition of the target behaviours (i.e. behaviours being interpreted differently by coders), the options for coding target behaviours and the limitations of training methods used to support coders in the use of the tool. Further work is needed on the tool before it can be used in practice.

5.7 Chapter Summary and Discussion

Using an iterative, stepwise approach, I revised the current DESMOND assessment tool into one that included both original and additional behaviours from educator resources. Each behaviour was reviewed against a set of criteria before its inclusion. I used card sorting methodology and discussions with experts to incorporate these into a framework with five labels containing 33 behaviours. Each of the 33 behaviours consisted of a DESMOND congruent behavioural item and an opposing non-DESMOND congruent behavioural item. Six additional behavioural behaviours, used by educators and classified as potential DESMOND behaviours yet not included in the original DESMOND list, were added. The final 39 behaviours were developed into a structured observational tool, the 'revised DESMOND assessment tool'. The revised tool included behaviours expected to be present across the delivery of the six-hour, twelve session, programme, but not all of the behaviours would be expected to be observed in all twelve sessions. To account for this, some behaviours had a third coding option (e.g. 'not seen') and the coding instructions for the use of the assessment tool allowed for any behaviour to be coded as 'not seen' if the behaviour was not present.

Two expert coders assisted me with key decisions about coding time frames, layout of the tool and wording to indicate the absence or presence of the behaviours. They also assisted in the piloting of the tool to enable investigation of its reliability.

The reliability of the revised tool was assessed using two methods. An index of coder agreement, estimated as a percentage, suggested greater agreement than estimating the Kappa value of reliability. This was an expected finding given that the latter takes into account chance agreement. Using agreement matrices developed for each behaviour provided an understanding of two systematic issues that provided guidance for further examination of both the behaviours and the coding tool.

Throughout the process described in this chapter, I maintained a database of changes made to the original behaviours in the DESMOND assessment tool. I was able to account for all the original educator behaviours, reassuring me that the revised assessment tool represented the original assessment tool, albeit with refinements and additions.

At the end of the activities described in this chapter I now had a revised assessment tool (Appendix 13) suitable for my analysis of educators' delivery, with acknowledgment that more work was needed before it could be used reliably by others to judge educator behaviour.

Chapter 6: Assessing the presence of DESMOND congruent and non-DESMOND congruent behaviours in the delivery of the DESMOND programme

6.1 Introduction

The DESMOND programme's delivery and outcomes are reliant on the behaviours of educators (Skinner et al 2007, Davies et al 2008). Knowing more about the behaviours that are commonly used, and those that are not, will provide a focus for training, assessment and development of educators in the future. Additionally, knowing more about the use of behaviours across the sessions within the whole programme will also provide information regarding assessment of those behaviours. For example, if some sessions typically involve educators using all 39 of the behaviours, then future assessment of educators could focus on those sessions rather than the whole programme.

Chapter Five described the development of the DESMOND assessment tool in readiness for it to be used as a structured observation tool to observe the delivery of the DESMOND programme. The revised DESMOND assessment tool consisted of 33 DESMOND congruent and six possible DESMOND congruent behaviours. The provision of a paired non-DESMOND congruent behaviour, for each behavioural item, provided a means of assessing potential proscribed behaviours.

This chapter describes how the revised assessment tool was used to observe and code for presence of DESMOND and non-DESMOND behaviours used in the delivery of the DESMOND programme. The chapter concludes with two reflections, first on how the delivery of DESMOND relates to the assessment tool, and the potential implications of the results on training and assessing of educators. Second, on the generalisability of the results given the results are based on a single coder and the level of inter coder reliability of the tool identified in Chapter Five.

6.2 Chapter Aim

The overall aim of this chapter is to describe the methods and findings from coding the delivery of the DESMOND programme to assess the relationship of behaviours in the assessment tool to the actual delivery of the DESMOND programme by educators. This is achieved by reporting analysis of the coded data to following questions:

- Which DESMOND behaviours are frequently observed in the delivery of DESMOND?
- Which non-DESMOND behaviours are frequently observed in the delivery of DESMOND?
- Is there a difference between educator pairs in the observed use of DESMOND congruent behaviours?
- In which sessions are DESMOND behaviours observed?

6.3 Methods

6.3.1. Sampling procedures

As DESMOND is widely commissioned, the potential sampling frame for my study involved over 300 educators delivering across more than 80 sites across England (Data from DESMOND national office 2011). While sampling is important in observational studies, the novel nature of my study means that there was limited guidance regarding specific sampling. The most useful guidance (from research on assessing the fidelity of interventions) suggested a sample of 20-40% of sessions (Michie and Hardeman in Newman, Steed and Mulligan 2009). Given the available resources for my study, I chose a pragmatic sampling approach using available resources (Hardeman and Michie 2009). I considered it important to sample a range of sites in terms of “real world” delivery of the DESMOND programme within the research time frame. Hence, a pragmatic sample of 8-10 programmes delivered in mix of urban and rural sites, was decided. This provided a sample range of up to 20 educators, 5 sites and

48-60 hours of educator delivery.

I considered sampling educators from different professional backgrounds (as DESMOND educators come from a range of healthcare backgrounds) and expected to recruit the accredited educators from a range of professional backgrounds. However, this was dependent on the educators and sites that came forward to take part in my study. As this study focused on educator performance, there was no requirement to sample patients within the programmes.

All sessions delivered by the educators in the sample were video recorded. The DESMOND curriculum describes either 11 or 12 potential sessions for delivery during the programme. When DESMOND is delivered over a full day, eleven sessions will be recommended. When delivered across a period of two to three weeks, an additional session is added to provide for participant feedback after the time break between sessions.

6.3.2 Recruitment of educators

The DESMOND national office maintains a register of trained educators across the UK and identified DESMOND sites that contained a range of accredited educators. I selected the five sites, but the DESMOND national office team identified the accredited educators within each site and sent them an invitation letter (Appendix 14) and an educator information sheet (Appendix 15). Educators were asked to send an opt-in reply slip and contact me directly if they were willing to be involved in the study.

6.3.3 Ethical Considerations

<u>Educator participants</u>

In order to reassure educators that the research was not assessing their individual performance, I sampled only *accredited* educators and emphasised that the research would not affect their status or future career as an educator. I provided time for educators to raise any concerns about this during initial

discussions. The educator participant information sheet (Appendix 15) outlined the details of the study and highlighted that the study was not a judgement of their performance. To support this, I intended not to provide any feedback on performance to the educator unless the educator requested it.

This was a non-participant observational study, with no direct intervention from me on the delivery of the programme, although I would be present in the room to record the delivery. My previous experience of observation visits (as a DESMOND assessor) suggested that the educators appear to perform in their usual way, despite the presence of the camera and observer. After each observation and recording, I asked the educators to reflect on whether their delivery was different. Additionally, educators were informed that if a situation arose which affected them and their delivery to an extent that it was not considered their 'usual' delivery; they could halt the recording until the situation was resolved.

Patient participants

Although patients in this study were not the focus of the research, their role was important. I explained to patient-participants, via the patient-participant information sheet (Appendix 16) that the recording was focused on the educator and not the participants. I explained that as the study required coding of educator behaviours that related to participant responses, I needed to record their responses. In my experience, patient involvement in the DESMOND programme does not usually give rise to emotionally sensitive discussions, but should this have happened, I planned to sensitively seek understanding from those affected about whether the recording should be erased. If the situation affected the programme to an extent that it was not a usual delivery, then I planned that the recording would be abandoned, as this could affect the analysis of the data.

I sought to assess the delivery of DESMOND in relation to the revised assessment tool and as such required 'usual' delivery of the programme. I anticipated that if a programme was delivered in a very different way from usual (e.g. only two participants attended or there happened to be a very dominant

participant), then this would not provide meaningful data on the focus of analysis.

6.3.4 Informed consent and confidentiality

Informed written consent was obtained from the educator (Appendix 17) on the day of recording. Once the date of the recording was agreed with the educator, the local site DESMOND programme coordinator informed potential patient-participants that this particular programme was being recorded via an information sheet (Appendix 16) outlining the reason for the study, emphasising the focus on the educator delivering the programme and explaining the need for recording educators' interaction with patient-participants. Furthermore, they were informed that all data used for analysis would be anonymised, and that access to the video recordings would be limited to the research team. Written consent from patient-participants was sought on the day of recording (Appendix 18). Following advice from the NHS Research Ethics Committee (REC), in the event that a patient-participant did not agree to be recorded they were given the option of attending the programme on a different date.

<u>Patient-participant data</u>

The patient-participant details were unknown to me, as there was no requirement for me to be in direct contact with them. The video recordings that contained their voices and aspects of their images (albeit the back of their heads) were stored on an encrypted/password protected data hard drive, with a copy on a secure networked hard drive at University of Leicester.

<u>Educator-participant data</u>

The names and contact details of the educators were kept on an encrypted/password protected data hard drive and copied onto the secure networked hard drive at University of Leicester.

Recorded data: The video and audio files were initially transferred from the

video camera data card/digital recorder to an encrypted password protected data hard drive via a password protected laptop. As soon as possible, the files were copied to and securely stored on the University of Leicester networked hard drive. Each educator and site was allocated a unique code. The details of these codes were also kept securely as described above. Educators' identities were anonymised in the data records. As far as possible, all reference to particular institutions and organisations were anonymised. Following advice from the Ethics review committee, each educator was offered a copy of their delivery recording for his or her individual use. They each requested and received their recording.

6.3.5 Collection of recorded programme delivery data

Deliveries were recorded using video and audio equipment. The video recording equipment was placed in a fixed camera position for a single viewpoint. The camera focused on the educator and avoided the faces of patient-participants as much as possible. Where possible, a second video camera was placed in an alternative part of the room to provide a back-up recording in the event of failure of one camera. The recording included the voices of the patient-participants to allow observation of behaviours that related to the educator response to participant words. To support clarity of recorded discussions, a digital audio recorder was also placed close to where the educators were positioned but as unobtrusively as possible. This also provided a back-up recording in case of technical issues related to the video recording. I also took field notes during the session to provide any background information that may assist in the analysis of the coding results.

6.3.6 Ethics and R&D Approval

The study (Protocol Number UNOLE 0263 – see Appendix 19) gained NHS REC approval from the NRES Committee East Midlands – Leicester on 24th May 2012: REC reference 12/EM/0129 (Appendix 20). Favourable NHS research and development (R&D) approval was sought and given from each of the sites from which I intended to recruit educators. The NIHR Clinical Research

Network adopted the study, and coordinated the R&D approval process (NIHR CSP-Ref.65721) within each of the sites.

6.3.7 Generating data from the recordings

To generate analysable data from the recordings, I used video editing software to separate each of the DESMOND programmes into their discrete sessions I coded each of the sessions within the nine DESMOND deliveries using the revised DESMOND assessment tool. The coded data was entered into the SPSS database.

6.3.8 Proposed analysis of the recorded DESMOND deliveries

Quantitative analysis can generate a large amount of data. Using statistical methods helps make sense of the data by providing simple summaries of the data (Welkowitz, Cohen and Lea 2011).

In the field of intervention fidelity, descriptive analysis is the initial step for analysis of process data (Moore et al. 2015). Describing the detail of the intervention delivery process allows for comparison with the desired outcome(s) of an intervention. For example, Hardeman (2008) compared the descriptive data related to facilitator adherence to participant beliefs following the intervention.

The initial step for descriptive analysis requires the description of what aspects of the intervention are being delivered. This is described as principal component analysis, using statistical methods to analyse the data (Hardeman et al. 2008, Moyers et al., 2005). However, other researchers used simple percentages of the number of times the desired content was covered (Long et.al.) or reported the frequency of the observed behaviour in terms of its (the target behaviour) mean and standard deviation (Eames et al 2008). Following initial description of what is being delivered, analysis of differences of facilitator adherence to each aspect of the intervention, for example gender, professional background, provides data to examine relationships of these to intervention outcomes

(Hardeman et al. 2008).

For the purpose of this study, I was concerned with initially describing which of the DESMOND behaviours educators use. The use of simple descriptive statistical methods for data analysis provided the answers the following questions:

1. How many and which DESMOND congruent behaviours are frequently observed in the delivery of DESMOND?
2. How many and which non-DESMOND congruent behaviours are frequently observed in the delivery of DESMOND?
3. Is there a difference between educator pairs in the observed use of DESMOND congruent behaviours?
4. Are each of the behaviours used in the sessions as expected?

The analysis plan to answer each of these questions is detailed in Table 6.1

6.3.9 Assessment of data quality

Assessing the overall quality of the data using the following questions:

- What does the data look like? Are there any odd codes that I have entered?
- What is missing? What are the gaps in the data?
- How accurate is the data entry?

I checked the accuracy of my data entry by recruiting an independent research administrator (from the Leicester Diabetes Centre), who checked the entry of 10-20% (20/157) of the coding data. Each of the 157 coding sheets was numbered 1 to 157. Using an online random number generator to identify a set of 20 random numbers from 1-157, the related numbered coding sheets were identified and checked.

Table 6.1 Plan for descriptive analysis of the coding data.

Question	Reported as	Data used
1. How many and which DESMOND congruent behaviours are frequently observed in the delivery of DESMOND?	The percentage of sessions where DESMOND behaviours were coded as 'tended' to be seen.	The % of behaviours that were coded as 'DESMOND' – coded as '1' across ALL sessions.
2. How many and which non-DESMOND congruent behaviours are frequently observed in the delivery of DESMOND?	The percentage of sessions where non-DESMOND behaviours were coded as 'tended' to be seen.	The % of behaviours that were coded as 'non - DESMOND' – coded as '2' across ALL sessions.
3. Is there a difference between educator pairs in the observed use of DESMOND congruent behaviours?	The 'Mean' and 'SD' for each DESMOND behaviour by educator pair.	The % mean of DESMOND behaviours tended to be seen across all sessions and by pairs of educators
4. Are each of the behaviours observed in the sessions as expected?	The number of behaviours coded as 'DESMOND' or non-DESMOND by individual session compared with behaviours that are identified as N/A or neither behaviour seen. The frequency of use of behaviours overall and how this compares to 'expected' use	Using main coder data and the sessions/ behaviours coded as '99' to identify behaviours. Behaviours coded as '1' and '2'. Calculation of number of DESMOND behaviours seen in each session and comparison with behaviours from original DESMOND core behaviours and session specific assessment tools.

6.4 Results

6.4.1 Accessing sites and obtaining recorded delivery of DESMOND programmes.

Sites: Four out of the five sites approved the study; these represented a mix of rural and urban location and cultural diversity. See Table 6.2 for the details of the sites.

Educators: All educators were accredited DESMOND educators and had been delivering DESMOND for a mean of 5.3 years (SD = 1.4 years, range = 2 to 7 years). The professional backgrounds of the educators were registered nurses (n=11) and registered dietitians (n=4). Table 6.2 outlines the details of the sites, educators and deliveries.

Table 6.2: Details of the sites, educators and deliveries for the DESMOND recordings

Site	Location	Educators observed	Recorded deliveries (n)	Participants per delivery (n)		
				1st	2nd	3rd
A	Large inner city Midlands	4 (all nurses)	2	9	9	n/a
B	Rural south west	5 (2 nurses and 3 dietitians)	3	3	7	8
C	Midlands City	2 (2 nurses)	1	9	n/a	n/a
D	Outer London Borough	4 (3 nurses and 1 dietitian)	3	7	9	7

Recordings: Nine programmes were recorded from the four sites; all were approximately six hours long. Eight of the nine video recordings were successfully obtained. Due to technical difficulties with the video recorder, only audio recording was available for one delivery and for this programme only 9 out of 12 sessions were recorded. Following editing of the programme into

sessions, the maximum number anticipated was 105 sessions. However, the final number of sessions recorded and available for analysis totalled 97 sessions, due to one session (F) consistently not being delivered by educators.

Unusual delivery:

All educators were asked about their experience of the camera in the room; all acknowledged noticing it initially and then described forgetting about it. No incidents occurred that required the recording to be abandoned. One programme had only three patient-participants, but the educators advised me that this was not unusual for their site and did not impact on their usual delivery.

6.4.2 Coding the recorded deliveries

The coded data

My data consisted of coded observations for the presence of each of the 39 behaviours from the revised DESMOND assessment tool, for the 97 sessions delivered by educators for nine DESMOND deliveries. This provided 3,783 (97x39) data items.

Missing data

Across the whole main coder database 468 (11.1%) of items were coded as missing. A large proportion of this (10%) related to session (F) previously reported as not delivered. Three specific sessions were identified as missing data from delivery number six. Delivery six was the delivery where only audio recording was suitable and the last two sessions could not be heard due to technical problems.

Data entry accuracy

Data accuracy was checked by an independent person on a sample from the full database, i.e. data from the three coders described in Chapter Five. Twenty coding sheets were checked, equating to 780 items of coding data (as 39 items per sheet). Incorrect data entry was found in 28/780 items (3.5%). An error in the instructions for checking the data was responsible for 14/28 data entry

errors but this left 14 (1.8%) items that were ‘true’ inaccuracies. The complete data entry was therefore re-checked by myself. I identified a 1% error rate (62 errors detected out of the total 6123 data items for three coders). The database was corrected.

Initial data analysis

The initial analysis and description of the results (Table 6.3) demonstrated that all 39 behaviours were observed across the delivery of DESMOND, with varying levels of frequency. However, a number of non-DESMOND congruent behaviours were also observed. For example, behaviour 1 (Open Body Language) the DESMOND congruent behaviour was observed in 77% of sessions. In 23% of the sessions, the educator was observed as delivering the non-DESMOND congruent behaviour, i.e. the opposite behaviour to intended ‘the educator tends to use more closed body language techniques’.

A number of sessions were observed where neither the DESMOND nor non-DESMOND behaviour being present, or coded as not appropriate for the session being observed. For example, behaviour 25 (‘supports completion of health profile or action plan’) would not be observed in sessions where neither the health profile or action plan was used. Similarly, behaviour 7 (‘the educator acknowledges emotional response’) would only be observed in sessions when a participant voiced an emotion.

Table 6.3: Frequency of use of DESMOND or non-DESMOND behaviours across all sessions. (in order of highest to lowest frequency of DESMOND behaviour observation)

Item No	DESMOND behaviour description (abbreviated)	DESMOND congruent behaviour (%)	Non-DESMOND congruent behaviour (%)	Neither seen or N/A
9	Using visual tools	84	14	2
1	Open body language techniques	77	23	2
32	Provides overview of sessions or day	67	33	0
31	Manages group to complete tasks	66	17	17
10	Uses and refers to participants comments	64	33	3
30	Uses co-educator to deliver sessions	62	31	7
36	Uses rapport building skills	56	42	2
27	Uses strategies to manage time	51	37	12
39	Tone of voice warm and curious	47	53	0
34	Only provides new information after group discussion	45	26	29
2	Uses non-judgemental statements in response to participants utterances	44	46	10
4	Seeks clarification	42	48	10
35	Explains/discusses key terms	42	13	45
19	Prompts discussions of possible changes	39	27	34
24	Facilitates sharing of positive attempts to manage diabetes	34	31	35

Table 6.3 contd. Frequency of use of DESMOND or non-DESMOND behaviours across all sessions.

Item No	DESMOND Behaviour Description (abbreviated)	DESMOND congruent behaviour (%)	Non-DESMOND congruent behaviour (%)	Neither seen or N/A
12	Explores misconceptions and gaps in knowledge	32	46	22
13	Notices and prompts discussions regarding diabetes related health beliefs	30	55	15
37	Facilitates full participant engagement in interactive tasks	30	47	23
5	Avoids giving general healthy eating messages	29	40	31
11	Prompts group to answer their own questions	29	55	16
8	Uses analogies	25	70	5
20	Prompts participant review of impact of possible changes	25	33	42
25	Supports completion of health profile/complete action plan	25	2	73
38	Avoids giving own opinion	25	60	15
18	Acknowledges when participants decide not to make future changes	22	46	32
7	Acknowledges and/or prompts exploration of emotional response	21	32	47
14	Prompts all participants to ask questions about issues discussed	21	71	8
6	Prompts participants to express and explore their feelings about diabetes	19	81	0

Table 6.3: contd. Frequency of use of DESMOND or non-DESMOND behaviours across all sessions.

Item No	DESMOND Item description (abbreviated)	DESMOND congruent behaviour (%)	Non-DESMOND congruent behaviour (%)	Neither seen or N/A
29	Prompts engagement of quieter members	16	79	5
3	Seeks answers from a number of participants	12	64	24
17	Prompts self talk about how key messages from session apply to them	12	65	23
22	Prompts the individual of group to problem solve barriers to change	11	36	53
15	Prompts group to summarise their key messages from the session	8	70	22
21	Prompts participants to talk about what they are going to do as a result of the session	7	57	36
33	Outlines style of sessions (code for session A)	7	2	91
23	Prompts participants to reflect on their goals/plans	5	26	70
28	Notices tone/dynamics within group and manages them	5	33	62
16	Prompts group to summarise their own understanding of content under discussion	4	73	23
26	Prompts reflection of changes already made (F2 delivery only)	1	1	98

Whilst all of the DESMOND behaviours were seen across the delivery of DESMOND to some extent, there was a wide range in the frequency with which individual behaviours were seen; from 1% to 84%. However, from this analysis, I was now able to answer my first two questions. I defined behaviours as being frequently observed if coded as seen in 50% or more of the DESMOND sessions. Deciding to use 50% as a cut off point was a pragmatic decision, made when I saw the data and the range of frequencies. Additionally, I was only requiring a measure of whether certain behaviours were more likely to be used that others, and in which sessions. I then used the six labels from the revised DESMOND assessment tool as a means of further categorising the behaviours, to allow me to look for reasons for their use.

Question 1: Which DESMOND congruent behaviours are frequently observed in the delivery of DESMOND?

Eight DESMOND behaviours were seen in more than 50% of sessions: (9) Uses visual tools; (1) Uses open body language techniques; (32) Overview sessions of day; (31) Provides time to complete tasks; (10) Uses participants' comments; (30) Uses co-educator; (36) Uses rapport building skills and (27) Uses strategies to manage time. Behaviour 9 is an unsurprising finding as the delivery of DESMOND relies on many visual tools to help the educator engage participants. Further examination of the behaviours by categorising these in terms of the DESMOND assessment tool label demonstrated that four behaviours are related to managing the group (see Table 6.4). Again, not a surprising finding as DESMOND is delivered to a group of 10 participants or more, and by two educators (behaviour 30).

Table 6.4 Frequently observed (>50% sessions) DESMOND behaviours In relation to their DESMOND category

DESMOND assessment tool Category label	Frequently seen DESMOND behaviour (item no.)
Facilitates non-judgemental engagement of all participants (behaviours 1-5)	1
Eliciting and responding to emotions/feelings (empathetic responding) (Behaviours 6 and 7)	NIL
Facilitates reflective learning (Behaviours 8 -17)	9,10
Behaviour change, planning and goal setting (Behaviours 18 – 26)	NIL
Overall group management (Behaviours 27 – 33)	27,30, 31, 32
Additional behaviours (Behaviours 34 – 39)	36

<u>Question 2: Which non-DESMOND congruent behaviours (the opposite behaviour expected to be seen) are frequently observed in the delivery of DESMOND?</u>

As with the observation of DESMOND congruent behaviours, the data show that all non-DESMOND congruent behaviours were seen in the delivery of DESMOND, with a wide range from 1% to 81%.

Thirteen non-DESMOND congruent behaviours were observed across more than 50% of the sessions:

(6) Avoids actively engaging participants in emotional discussion

(29) Avoids seeking engagement of the quieter members of the group

(16) Tends to summarise what the she/thinks the group is understanding (without checking)

(14) Rarely invites all participants to ask questions

(15) Tends to summarise key messages

(8) Avoids the use of analogies

(17) Does not ask participants how the key messages apply to them

(3) Accepts first right answer and/or immediately provides correct or up to date information

(38) Gives their own opinion

(21) Does not ask participants to talk about what they are going to do as a result of the session

(11) Immediately answers most of the questions asked by the group

(13) Avoids discussion of health beliefs within the group

(39) Tone of voice is dominant and autocratic

The most frequently seen non-DESMOND congruent behaviour was behaviour 6, ‘avoids actively engaging participants in emotional discussion’, seen in 81% of sessions. Further examination of the behaviours by categorising these in terms of the DESMOND assessment tool label demonstrated that seven non-DESMOND behaviours were related to the category ‘facilitates reflective learning’ (Table 6.5). The remaining six behaviours are spread across the other five categories. However, three of the remaining six behaviours relate to the role of educator as an expert and authority figure: behaviour 3 (accepts first answer and/or immediately provides correct answer), behaviour 38 (educator gives their own opinion) and behaviour 39 (tone of voice is dominant and autocratic).

The commonly used DESMOND congruent behaviours tend to be specific ‘task like’ behaviours, for example, ‘uses visual tools’, that relate to overall group management. The commonly used non-DESMOND behaviours tend to be those related to facilitating reflective learning in participants and acting as an expert, authority figure. For example, ‘immediately answers most questions asked by the group’ and ‘avoids actively engaging participants in emotional discussion’.

However, these observations are across the whole dataset, and the use of behaviours may vary across pairs of educators. Hence, my next step was to consider the use of DESMOND behaviours across the pairs of educators.

Table 6.5 Frequently observed non-DESMOND behaviours in relation to their DESMOND category

DESMOND assessment tool Category label	Frequently seen non-DESMOND behaviour (Item no.)
Facilitates non-judgemental engagement of all participants (behaviours 1-5)	3
Eliciting and responding to emotions/feelings (empathetic responding) (Behaviours 6 and 7)	6
Facilitates reflective learning (Behaviours 8 -17)	8,11,13,14,15,16,17
Behaviour change, planning and goal setting (Behaviours 18 – 26)	21
Overall group management (Behaviours 27 – 33)	29
Additional behaviours (34 - 39)	38, 39

<u>Question 3: Is there a difference between educator pairs in the observed use of DESMOND congruent behaviours?</u>

This question focused on the differences between the nine educator pairs in their use of DESMOND behaviours. Analysing this allowed me to assess the consistent use of behaviours by educator pairs, i.e. whether some educator pairs use certain behaviours consistently across their delivery of DESMOND?

This analysis calculated the variation in the observed use of DESMOND congruent behaviour by educator pairs (n=9). Taking the mean use of behaviours across the sessions, as already calculated, I calculated the variation of use by educator pairs. The results of this analysis are shown in Table 6.6.

To explain the results, I use item 1 (‘the educator uses a range of open body language techniques to support engagement of participants’) as an example. On average, educator pairs were observed using this behaviour for 69% of sessions. The minimum of 33% suggests that all of the pairs used this behaviour in at least 33% of the sessions. The maximum of 100% suggests that at least one pair used this behaviour in all of the sessions where the behaviour was coded as DESMOND behaviour.

The data suggest that individual educator pairs do vary in their delivery of DESMOND congruent behaviours. Some educator pairs observed delivering more DESMOND congruent behaviours than others. For example: Behaviour 36 (‘the educator engages participants using rapport building skills’) has a mean observed use in 56% of observed sessions, at least one pair of educators were observed to use this behaviour for 100% of the observed sessions, but at least one pair were observed not to use this behaviour at all.

When considering the top eight frequently observed DESMOND behaviours (see Table 6.4), these can now be considered in terms of whether all educator pairs used the behaviours as frequently. Only behaviour 9 (‘the educator uses visual tools and resources’) showed high usage across all educator pairs, with educators pairs using this for between 85% and 100% of the sessions where observed. Whereas behaviour 10 (‘the educator uses and refers to participants comments and quotes’) was seen to be used by at least one educator pair for 100% of the sessions observed, but one educator pair only used the behaviour for 9% of the sessions. The standard deviation of 27 from a mean use of 67 suggests that for behaviour 10 there was a wide variation of use between educator pairs.

Table 6.6: Variation in use by educator pairs in relation to the mean use of DESMOND congruent behaviours

DESMOND congruent Item No (% mean use overall)		Use across sessions by educator pairs			
		Mean	*Max	**Min	SD
Item 9 (84)	Most frequently observed	85	100	64	11
Item 1 (77)		77	100	36	22
Item 32 (67)		67	92	27	21
Item 31 (66)		81	100	40	17
Item 10 (64)		66	100	9	27
Item 30 (62)		67	100	33	22
Item 36 (56)		56	100	0	28
Item 27 (51)		56	82	20	23
Item 39 (47)		47	100	0	30
Item 34 (45)		67	100	0	30
Item 2 (44)		48	82	11	24
Item 4 (42)		46	82	0	29
Item 35 (42)		81	100	22	25
Item 19 (39)		59	100	0	28
Item 24 (34)		51	86	14	22
Item 12 (32)		42	88	0	26
Item 13 (30)		36	99	0	24
Item 37 (30)		41	100	0	28
Item 5 (29)		41	78	0	28
Item 11 (29)		34	63	0	20
Item 8 (25)		26	42	11	9
Item 20 (25)		42	83	0	26
Item 25 (25)		92	100	67	14

*The maximum % sessions where at least one pair of educators was observed to use the DESMOND item

** The minimum % sessions where at least one pair of educators was observed to use the DESMOND item

Table 6.6 contd. Variation in use by educator pairs in relation to the mean use of DESMOND congruent behaviours

Item Number	Mean	*Max	**Min	SD
Item 38 (25)	29	56	0	20
Item 18 (22)	32	71	0	24
Item 7 (21)	39	100	0	33
Item 14 (21)	22	60	0	20
Item 6 (19)	18	45	0	12
Item 29 (16)	17	40	0	12
Item 3 (12)	16	33	0	11
Item 17 (12)	17	43	0	15
Item 22 (11)	24	60	0	21
Item 15 (8)	12	38	0	14
Item 21 (7)	10	25	0	8
Item 33 (7)	79	100	0	40
Item 23 (5)	29	100	0	32
Item 28 (5)	17	50	0	19
Item 16 (4)	5	18	0	7
Item 26 (1)	52	100	0	51

*The maximum % sessions where at least one pair of educators was observed to use the DESMOND item

** The minimum % sessions where at least one pair of educators was observed to use the DESMOND item

My next and last question for analysis related to whether some DESMOND sessions contained more behaviours than others.

Question 4: In which sessions are DESMOND behaviours observed?

Before deciding whether each DESMOND behaviour should be observed across all of the sessions, or if some are relevant to only one or two of the sessions, I first set about establishing which sessions contained most DESMOND behaviours. To do this, I calculated the number of times, per

session, a target behaviour was coded as DESMOND, non-DESMOND or not relevant/behaviour not seen, it was possible to identify whether some DESMOND sessions contained more behaviours than others. By analysing the 39 behaviours were not seen in the individual DESMOND sessions, I identified how many of the behaviours were seen in individual sessions (Table 6.7). Across the eleven DESMOND sessions, the range of total behaviours identified in each session was 30 to 37 behaviours. That is, the minimum number of behaviours coded as DESMOND or non-DESMOND across all sessions was 30. No single session was observed to contain all 39 behaviours. Three sessions (D, H and K) were identified where educators were observed using 37 of the 39 behaviours. Sessions with the lowest number of coded behaviours were A (32), B (30) and L (33).

To establish whether the behaviours were observed as recommended by the original DESMOND developers (who also developed the original DESMOND assessment tool) I compared the behaviours in the revised DESMOND tool to session specific behaviours within the original tool (Appendix 1). The six 'session specific' behaviours in the revised DESMOND assessment tool, along with the sessions for which they refer to, include:

- Behaviour 4: 'Seeks clarification of participants' contribution'; expected to be seen in session B and seen across all sessions.
- Behaviour 5: 'Avoids giving general healthy eating messages'; expected to be seen in session J and seen across all sessions.
- Behaviour 23: 'Prompts the participant to reflect on their goals/plans'; expected to be seen in session K and seen in all sessions except for B, C and L.
- Behaviour 25:'Supports participants to plot their results on the health profile/complete their action plan'; expected to be seen in sessions D, H and K and seen only in sessions D, H and K.
- Behaviour 26: 'Prompts reflection of changes already made'; expected to be seen in session G, when delivering the programme in two parts over a few weeks. In my analysis, it was not seen in session G as expected as the programme was delivered across a whole day, but it was seen in

session A.

- Behaviour 33: ‘Outlines style of sessions’; expected to be seen in session A and seen only in session A.

Table 6.7: The 39 behaviours (DESMOND or non-DESMOND) in relation to their observed presence in the individual DESMOND sessions

Session ID	Session Title	Total no. of behaviours observed	Behaviours not observed in this session
A	Introduction	32	18,19,20,21,22,25,38
B	Patient Story	30	19,20,21,22,23,24,25,26,33
C:	Professional Story 1	36	23,25,26,33
D:	Monitoring	37	26, 33
E:	Taking Control: Diet 1	36	25,26,33
F:	Reflections 1	no data as session not delivered by educators	
G:	Reflections 2	35	25,26,33,35
H:	Professional Story 2	37	26,33
I	Taking Control: Diet	36	25,26,33
J	Taking Control: Physical Activity	35	3,25,26,33
K	Goal Setting and action planning	37	26,33
L	Burning questions and next steps	33	23,24,25,26,27,33

Of the six behaviours originally labelled as session specific, behaviours 4, 5 and 23 were seen across all sessions, and should be considered as potential core behaviours.

Behaviours 25 and 33 were seen in the sessions originally identified and as they relate only to specific sessions, their removal from a list of behaviours used to assess the whole delivery could be reviewed. Behaviour 26 may also be considered for use as a session specific behaviour for session A as well as session G.

6.5 Summary of findings

To summarise, by coding video recordings of DESMOND delivery, with the revised tool, I have shown that DESMOND educators tend to use both DESMOND and non-DESMOND congruent behaviours in their delivery of the DESMOND programme. Overall, educators used more non-DESMOND congruent behaviours than DESMOND congruent behaviours, but this varied between educator pairs. The eight DESMOND behaviours most commonly seen in the delivery of DESMOND are behaviours include four group management behaviours. The non-DESMOND behaviours were those relating to facilitating reflective learning amongst the participants and the role of the educator as an expert and authority figure. Additionally, my analysis highlights that some educators avoid prompting emotional discussion and rarely acknowledge a participant's emotional response. Whilst the analysis of use of emotionally related behaviours shows that educators tended to use more non-DESMOND behaviours, the analysis of educator pairs showed variation in the performance across educator pairs. For example, whilst the mean use of this behaviour across sessions by educator pairs was only 17%, at least one educator pair prompted emotional discussion in 42% of the sessions they delivered.

Behaviours originally described for use across the whole delivery (in the original DESMOND assessment tool as core) were observed as delivered across the sessions, but with educators using both DESMOND and non-DESMOND congruent behaviours. Of the six behaviours originally described as related to specific sessions within the DESMOND programme, two were observed in the sessions as expected. Three behaviours were observed across all the sessions and therefore represent core behaviours, rather than session specific behaviours. The sixth behaviour was seen in a session not previously expected to be seen and should be considered as a session specific behaviour for session A.

The six additional possible DESMOND behaviours, added to the revised

DESMOND assessment tool during its final development, were present across the delivery of DESMOND, but varied in their use by educators.

Overall, my analysis demonstrates that the behaviours within the DESMOND assessment tool do relate to the delivery of the DESMOND programme.

6.6 Discussion

Using a structured coding tool to assess behaviours used by a range of DESMOND educators, I have shown that while educators deliver the programme using many of the behaviours described in the original DESMOND assessment tool, they also tend to use a number of non-DESMOND congruent behaviours. The original tool did not identify such 'opposite' (non-DESMOND) behaviours as part of the assessment, but by doing so, I have been able to describe in more detail the behaviours that educators adopt. This clarity demands two further considerations. Firstly, agreement by educators and DESMOND leaders which DESMOND congruent behaviours are important to the delivery of DESMOND and secondly, how to support educators to deliver them faithfully.

The variation in use of behaviours by DESMOND educators suggests different educator styles. The impact of such variation of educator delivery on participant outcomes is as yet unknown, but the ability to use a structured observation tool now provides a means to identify differences and compare the delivery to outcomes.

The common use of non-DESMOND behaviours, represent the potential role of the educator as an expert (Anderson and Funnell 2005, Pill et al 1999) which is at odds with the principles of an empowerment based, person-centred approach (Anderson et al 1995, Skinner et al 2007). For example, avoiding generating discussion regarding content and health beliefs, not seeking the key messages from the group and avoiding emotional discussion could be equated to controlling the content of the group, rather than facilitating participation.

However, the DESMOND version of these behaviours requires complex skills and greater focus on how educators may use these during educator training. Managing unexpected responses from a group may require an educator to let go of being an expert, which may be harder for some educators than others.

The use of some non-DESMOND congruent behaviours may also be related to time constraints. Despite being a six-hour programme, my observation was of a packed programme. The delivery of DESMOND requires key information related content and this may create a challenge for educators who believe that content delivery is more important than engaging participants in discussion.

One potential limitation of this study is the decision on quantifying what constitutes a 'frequent' behaviour as 50%. It did not take into account the expected frequency of each behaviour, which would be difficult as there is no detailed script for the delivery of DESMOND, which provides an a priori measure of fidelity. The 50% cut off decision did not take account of the potential for one behaviour to be easier to use than another. When quantifying frequency, studies have cited a level of frequency in terms of what is the desired level of frequency for delivery fidelity. For example, Dumas (2001) describes a level of 80% frequency as the level of fidelity, acknowledging the range of delivery across different sessions. Gearing (2011) suggests that the level of fidelity is decided upon prior to the delivery of the intervention, and cites below 50% agreement as low fidelity and above 80% as high. However, in the absence of pre-defined levels of DESMOND fidelity, I was simply trying to assess whether educators actually used any of the described DESMOND behaviours in their delivery of the programme. On reflection, I could have categorised the behaviours in relation to whether they were higher or lower than the mean level of observation.

To provide a more detailed assessment of educator delivery, the method of coding would need to be more specific. For example, how many times during the session did the educator perform a behaviour? I chose not to use this approach due to the time available for this stage of my study. Analysis of this

type of data would require greater attention to the meaning of ‘frequently seen’.

Chapter Five demonstrated that whilst initial assessment showed that inter-coder agreement was good, once coders used the tool to assess a greater number of recorded deliveries, the inter-coder agreement reduced. Of the three coders, I can be viewed as perhaps being closer to observing the ‘gold standard’, given my work in developing and revising the tool, but I must retain an awareness of the subjective nature of this. So, for now, these results need to be considered with caution. However, the views of educators regarding their own use of the behaviours may add face validity to my findings. The next chapter uses qualitative data, derived from focus groups with the study participant educators, to explore the findings from this chapter.

Chapter 7: The Views of Educators

7.1 Introduction

Previous chapters have highlighted potential problems with both the original and the revised DESMOND assessment tool in their use as objective assessment tools to observe the behaviour of DESMOND educators. Chapter Four illuminated the current tool's complexity. Chapter Five demonstrated that despite the revision of the original 100+ educator behaviours into a new structured observation tool of 39 behaviours in six categories, many behaviours showed only fair or poor inter-coder agreement. In Chapter Six, using the revised tool to assess the delivery of DESMOND, I found variation across behaviours in in delivery of DESMOND and non-DESMOND versions of the behaviour.

Many observation tools used for assessing intervention fidelity and quality assurance, are developed from the perspective of intervention developers, rather than the deliverers. Knowing more about the meanings that educators give to the assessment tools overall and the individual behaviours in the revised assessment tools may provide insight into why some behaviours were observed more than others.

This chapter describes how I used qualitative methods to explore educators' views and therefore provide insight into the findings of Chapters Five and Six.

Chapter Aim

The overall aim of this chapter is to describe the views of educators in relation to:

(a) The use of the original DESMOND assessment tools in relation to their delivery of the programme.

(b) The potential for a revised assessment tool.

(c) The 39 behavioural behaviours in the revised assessment tool and their relevance to the role of a DESMOND educator.

7.2 Methods

Focus group participants

I chose to use focus groups with DESMOND educators; this approach would support and encourage group discussion using a focused structure, while allowing sufficient flexibility for the educators to speak freely. The participants were the 18 educators who had delivered the DESMOND programmes used for my observation and subsequent analyses in Chapters Five and Six. The educator participant information sheet (Appendix 15) had explained that I would contact educators, following my analysis of the recordings, to invite them to take part in a focus group.

Each focus group took place at a time and place convenient to the educators, usually at their place of work. Informed consent (Appendix 17) had already been received for this second stage of the study with educators, but I revisited their continued consent, explaining how the results would be used, immediately before each focus group/interview. I facilitated each of the focus groups and audio-recorded the discussions.

Focus Group Topic Guide

I developed a flexible topic guide (Appendix 21) to inform the basic structure for the discussions. Briefly this covered: the use of the current and future DESMOND assessment tools for self-reflection and the relevance of each behaviour in the revised assessment tool to their delivery of DESMOND. To facilitate discussion about each behaviour from the revised tool including both the DESMOND and non-DESMOND version of the behaviour, I printed the description of each behaviour onto separate cards.

Data Collection

The audio-recordings were transcribed, with educator names replaced with participant numbers to protect educator identity. Each of the transcripts was then uploaded into NVivo qualitative data indexing software (QSR International).

Data analysis

I used a combination of approaches to inform my analysis. I drew upon the constant comparative approach (Charmaz 2014) to inform my analytical approach – which was inductive in nature – and used the technique of charting from the framework approach (Ritchie & Spencer 1994) as a method for organising my data and analysis, facilitated by the use of NVivo qualitative data indexing software.

In coding the data, I initially used (*a priori)* categories based on the topic guide as the initial broad coding framework to code each transcript. These broad codes included: the value and use of the original assessment tool, the potential for a revised assessment tool and a code for each of the 39 behaviours in the revised assessment tool. Then, by retrieving the text coded to each broad area I drew on the constant comparative method to look for explanations, meanings and insight in the data (Charmaz 2014). This involved me reading and re-reading excerpts, noting themes and identifying patterns. I drafted diagrams – noting down each emerging theme and noting how each theme related to another to understand relationships between themes.

My notes in these diagrams became more refined themes as I coded all the transcripts. I then used these as column headings for charting my analysis – with a row in each chart for each focus group. I populated my chart with brief words and phrases from each focus group in relation to each chart column heading (i.e. each theme). I produced a chart for each of the 39 behaviours. I then used the charts to help me summarise the data from each theme (see Table 7.1 as an example).

My next step involved comparing the summaries of my coding I had written with the quantitative findings about coder agreement (Chapter Five) and the extent to which each behaviour was observed in the recorded deliveries (Chapter Six). With summaries of data relating to each of the 39 behaviours I decided to look for data-driven ways of grouping the behaviours together (i.e. from my quantitative analysis in previous chapters). I started by loosely grouping behaviours into four categories relating to Chapter Six data on the frequency that an behaviour was observed in its DESMOND and non-DESMOND version. I then further grouped behaviours into

subgroups based on patterns emerging from my summaries of the educator views, where possible.

The first set of grouping related to behaviours for which the DESMOND version of the behaviour was commonly observed (Chapter Six) (using a cut off of 50% as a proxy measure for commonly observed). I divided these into two smaller groups to examine in depth: those observed in more than 70% and those in 50-70% of sessions. The next set of groupings related to behaviours for which the non-DESMOND version of the behaviours was commonly observed. The third set of groupings related to those for which either the DESMOND or the non-DESMOND version of the behaviour was observed in fewer than 50% sessions, I split these into: behaviours for which the DESMOND version was observed more than non-DESMOND version, behaviours for which the frequency of DESMOND and non-DESMOND versions were similar across sessions, and behaviours where the non-DESMOND version was observed in a greater number of sessions than its corresponding DESMOND behaviour.

Table 7.1 Example chart of coded data

	Theme: Current DESMOND Assessment Tool				**Reflection Tool**	
Group	Recall	Usefulness	Problems	Suggested improvements	Usefulness	Problems and suggested improvements
A	Unsure (x3) 1 educator confused with reflection tool	When new educator Gives direction Helps be constructive Helps avoid complacency	Pressure of time Extra to do	Tick box and examples – refer to a manual Use statements Use for reaccreditation Space to personalise		Lengthy Large blank spaces to fill in
B	Mixed recall	Useful at beginning Use it if not delivering frequently		Headings to jot things under Act as a reflective tool Share with peers Put in portfolio Easy to print off – one sheet – mind map style	After many years, can't think of what to write in the boxes	
C	Yes, but had not seen updated core behaviour sheet	Used when new educator	Imbalance of assessment criteria Older and trained educators not familiar with any changes. Pressure of time and low motivation to complete it alone	Have to have clear guidance Help you ask questions of your practice: what are you doing? What are you not doing? Not lengthy – 2 pages max.		

Table 7.1 contd. **Example chart of coded data**

	Theme: Current DESMOND Assessment Tool				**Reflection Tool**	
	Recall	Usefulness	Problems	Suggested improvements	Usefulness	Problems and suggested
D	Both educators knew the tools	People don't look at it until they are being assessed	Big, daunting, masses of stuff	The assessment tool should be reflected in the reflection tool More details of the elements to support honest feedback	Easy to gloss over	Quite woolly – what went well etc.
E (1:1 Inter)	Recalled reflection sheet but remembered assessment sheet when prompted	Used when getting ready for assessment Useful later when you have content under your belt		Key points on one page	Useful layout	
1:1 Inter = interview with single educator						

I then looked at the qualitative data summaries for each of the behaviours that I had grouped together. I looked for overlapping themes that may be able to explain, for example, why for some behaviours, the DESMOND version was observed across a high number of sessions and/or why for other behaviours both the DESMOND and non-DESMOND versions of the behaviour were observed across the sessions.

To illuminate the findings of coder agreement from Chapter Five, I created categories of behaviours based on the three proxy categories of coder percentage level of agreement. I grouped behaviours together that were coded as high agreement (>70%), moderate agreement (50-70%) and low agreement (<50%) As above, I then looked at the qualitative data to help explain why some behaviours appeared to be easier for coders to agree on.

7.3 Results

All 18 educators responded to the invitation and 17 agreed to take part; one was unable to participate due to leaving their post. One educator was unavailable on the date of the focus group due to impending leave, but I was able to undertake a semi structured one-to-one telephone interview with her to gather her views. The full dataset therefore included four focus groups and one interview, the duration of each being 90 to 120 minutes. I begin this section by presenting the educators' views of the tools overall – the old one and the revised one – then move onto their views on the behavioural items in the revised tool – grouping them together in line with my analysis.

Educator insights into the original DESMOND assessment tool

When I asked educators about the DESMOND tool, all of them responded by talking about the reflection sheet that educators are provided with alongside the assessment tool, rather than the assessment tool itself. I needed to prompt further to focus discussion on the actual assessment tool. All groups described how valuable they had found both the assessment tool and reflection sheet to be when they started delivering DESMOND as newly trained educators as it provided them

with direction, especially in preparation for being assessed.

> *"I think it's useful when people have newly started [delivering DESMOND]" (Group A Ed 1)*

> *"…for a long time [I] would sit on the sofa for an hour before every DESMOND and go through it to check that I knew what I was doing and I don't do it quite so often now cos I have been doing it for so long" (Group C Ed 8)*

A number of educators acknowledged, that while they felt that they should use the tool more regularly to help ensure that they were still delivering DESMOND in the way that they were trained, they felt they no longer needed it due to being more experienced. Although they also admitted that this was potentially problematic.

> *"…it was very good at teaching about the philosophy but I guess as you get more comfortable, like driving, you tend to not maybe necessarily go back and look at them. I am not saying that is a good thing you know, hands up, maybe I need to" (Group B Ed 5)*

> *"But equally though, do you think we maybe get a little bit complacent because we have been doing it that long if we don't use it?' (Group A Ed 3)*

Additional reasons for not using the tool more often were related to the complexity and size of the tool and the time required to use it, thus supporting the findings in Chapter Five that the behaviours within the original assessment tool were numerous (100+) and complex in their description.

> *"I think it's something extra to have to do and take along" (Group A Ed 2.)*

Educators' views on a new DESMOND assessment tool

All educators recognised the potential for a revised tool to help them consider their practice; one explained this by describing how delivering DESMOND can be complex:

> *"A lot of it feels intuitive but the processes that are going on are quite complex…" (Group C. Ed 10)*

As well as potentially simplifying the complexity, educators recognised how an effective tool would help them to be clear about what they should be doing.

> *"…it could be things that we do anyway, we just haven't really thought about it" (Group C. Ed 57)*

Specifically, educators described wanting a tool that would facilitate more objective self and peer assessment by providing examples, which would enable honest feedback about their own and their colleagues' delivery.

> *"Perhaps an example of what [an item/behaviour] could be and then have some examples that you could circle and think I didn't do any of those" (Group A Ed 2)*

> *"..it's kind of causing you to have a bit of self-analysis without thinking about, you sit there thinking do we do that?" (Group C Ed 57)*

> *"..an honest tool that helps you be honest without upsetting the other person.." (Group D Ed 55)*

Peer review was noted as an acceptable and appropriate means of performance feedback, but with challenges, which a revised assessment tool would need to consider.

"..sometimes you don't get honest peer reviewers, so you can have a peer review and it's all like a smack on the back and it's all ok but that isn't useful, it isn't useful for anybody" (Group D Ed 55)

Educators, in all of the focus groups, suggested that the self-reflection tool should link more closely with the behaviours in the assessment tool and some guidance should be provided on each behaviour. Specifically, they described the usefulness of including examples of the DESMOND version of the behaviours and their non-DESMOND counterpart (i.e. proscribed behaviour).

All educators described the need for an easy to use reflection sheet that contained headings to prompt self-reflection. By easy to use they described a tool of no more than two pages in length, able to print off easily, visually pleasing and with space to add personal comments.

Educators' views on the categories and behaviours within the revised DESMOND assessment tool

<u>The overall categories</u>

When shown the five categories that structured the revised tool (developed from the sort card tasks in Chapter Five), all of the educators agreed that they represented their work as a DESMOND educator and a sensible way of grouping the behaviours for ease of use. However, they pointed out some potential overlap between labels – between the categories of 'overall group management' and 'facilitating non-judgemental engagement'.

Some category labels prompted more discussion than others. For example, 'Facilitating reflective learning' was suggested as more of an educator-targeted activity than an activity for participants to be facilitated to do. Others regarded this as important but felt limited in doing it by a lack of time within a single day delivery.

"…umm reflective learning I can see that being very much for us you

know, I can't see how that one relates to them. I know they do the goal plan at the end and that's reflective learning ummm.." (Group E Ed 5)

" I am not sure because it is very early on in the process to expect them to [reflect]…there is so much information…" (Group A Ed 1)

When asked to consider whether the revised labels had any omissions, they identified two specific behaviours of their delivery that did not seem to be represented: signposting and unpicking myths). After some discussion they decided that these could be placed within the existing labels.

<u>The individual behaviours within the revised assessment tool</u>

When asked to consider the importance and relevance of each behaviour to the delivery of the DESMOND programme, educator responses clearly revealed the items that they considered very important. Other items were referred to as important, but were not straightforward – for example, the description of some items caused confusion and others were referred to as challenging to enact. Some other items provoked mixed views of their importance within the sample. The discussion of many items provoked educators to easily refer to examples, thereby giving an indication of regular use, while a few seemed hard for the educators to provide examples of. I begin this section with a table (Table 7.2) that provides an overview of the items according to these categories.

Table 7.2: Overview of educator views for each of the behaviours importance and use (see Appendix 13 for the list of behaviours)

Item no.	Importance and relevance of the behaviour	Perceived use of the behaviour
1	Very important	Frequently used behaviour. Educators typically provided examples of what would be observed
2	Important but some confusion with meaning	Difficult behaviour to enact.
3	Important, but with some challenges	Challenging to maintain behaviour throughout session; skill is required for judgment of when necessary
4	Important but some confusion with meaning	Occasional use, at appropriate times during the programme.
5	Important but some confusion with meaning	Regularly used behaviour Used the behaviour for all aspects of programme, not just related to food messages
6	Important but some confusion with meaning	Not perceived by some educators as part of their role.
7	Mixed views of importance	Not perceived by some educators as part of their role
8	Important	Regularly used behaviour to help medical knowledge be more understandable
9	Important	Commonly used behaviour
10	Very important, described as the DESMOND way	Regularly used behaviour throughout the day
11	Important	Difficult behaviour as a new educator but becomes easier with experience.
12	Very important	Regularly used behaviour
13	Important	Difficult behaviour as a new educator but becomes easier with experience.
14	Important	Mixed perception of use: with some educators using it all the time and some perceiving that they are not skilled at using it.
15	Mixed views	Mixed perception of use: with some educators using it all the time and some perceiving that they are not skilled at using it.
16	Mixed views about Importance but some confusion with meaning	Difficult behaviour to enact as a new educator but becomes easier with experience.

Table 7.2 contd: Overview of educator views for each of the behaviours importance and use

Item No	Importance and relevance of the behaviour	Perceived use the behaviour
17	Important and relevant.	Behaviour that experienced educators use automatically, however, could be used more throughout the programme
18	Mixed views	Behaviour that maybe hard to enact due to having to accept that people don't want to change
19	Important and relevant	Regularly used behaviour
20	Important	Easy behaviour for the confident and experienced educator.
21	Important	Used with only a few participants
22	Important	Used most of the time but limited in use by time available
23	Important	Behaviour that becomes easier with experience
24	Very important	Used throughout the programme
25	Very important	Used throughout the programme
26	Important	Used occasionally if session spilt into two half days
27	Very important	Commonly used behaviour with many examples cited
28	Very important	Behaviour used by experienced educators.
29	Important	Used across the whole programme
30	Very important	Used throughout the programme with many examples cited
31	Important	Behaviour central to managing the programme
32	Important	Perceived as a behaviour used at the beginning and occasionally throughout the programme
33	Important	No additional comments
34	Mixed views	Some difficulties in enacting behaviour with educators describing a struggle to hold back from giving information
35	Important but some confusion with meaning	Used throughout the programme
36	Very important	Key educator behaviour but easier to build rapport with some participants more than others
37	Very important	Core to DESMOND and a behaviour that becomes easier with experience
38	Important	Behaviour described as an indicator of how the educator is developing their skills
39	Mixed views	Educators found hard to describe in terms of actions

In summary, there was a range in the perceived importance of the behaviours. Overall, 31 out of the 39 behaviours were viewed by educators as important or very important in the delivery of the programme. Often such behaviours were readily illustrated in the examples that educators provided, for example:

> *"yes, that's very important…something you do at the beginning of the day…we try to say it is not about us talking at you…I have had [sessions] where if you don't explain it right you can get people saying 'well can't you just answer my question?'…you have to explain it a bit at the beginning" (Group E Ed 56, item 33)*

Many of the behaviours described as important were also described as becoming easier to use with experience.

> *" I think that's really important…I had a very new educator with me and she is not a diabetes educated person but has a lot of nutritional experience and she was delivering against my advice the blood glucose story….anyway it was a disaster, you could see that a couple of particpants were getting irritated and bored, you could tell by their body language…I don't think she even noticed [them]….but that only comes with experience so a new learner cannot do that" (Group A Ed 1, item 28)*

However, seven behaviours elicited mixed views about their importance, which related to confusion over differing perceptions of the meaning of the words.

> *"That's a tricky one…but for me it would be that you are not telling the group as a whole [to go and eat 5 a day] because the diet advice should be individualised.." (Group C Ed.57, item 5)*

> *"What does that mean…how do you avoid giving generic*

messages? We are always giving general healthy messages, there are certain [take home messages] that you want everyone to have….are we talking about…giving or facilitating. I don't understand" (Group C Ed.56, Item 5)

One behaviour (item 6) was viewed by some of the educators as not part of their role.

"umm..in a clinic situation…maybe you'd [do that] when they do care plans..I don't know…if you are in a group situation…I don't know, I'm not a psychologist" (Group E Ed 56, item 6)

Educator views on the behaviours in relation to the findings from Chapter Six

I now present detailed findings; I have structured this section by grouping behaviours together based on how commonly they were observed in using findings from Chapter Six (pp 202) and discuss the common themes – which expands on issues of importance and use outlined above..

<u>Behaviours for which the DESMOND version was commonly observed.</u>

Two behaviours were very commonly observed (i.e. in more than 70% of DESMOND sessions) (see Table 7.3).

Educators all agreed that these were behaviours that were important to use when delivering DESMOND and that they were easy to enact. They reported regularly doing these themselves and identified a number of specific examples to back up their claims, for example:

" …I think we do it without thinking, you don't think about it um if you, you know, I am quite conscious not to turn my back when I am talking to people.." (Group D Ed 55, item 1)

"..visual contact…relaxed posture" (Group D Ed56, item 1)

Table 7.3 Very commonly observed behaviours

Item	Description of DESMOND version	% sessions observed (Chap. 6)	Coder agreement (% agreement coder pair
1	Uses a range of open body language	77%	71% and 94%
9	Uses visual tools and resources	84%	84% and 83%

The ability of the educators to easily describe how they would enact these behaviours, and their own reports of regularly using them, supports the high level of use seen in Chapter Six. In addition, this helps to explain the high coder agreement levels for both these behaviours, suggesting they are easily distinguishable behaviours.

Six behaviours were commonly observed (50-70% of DESMOND sessions) (Table 7.4)

Again, all educators described these as important behaviours for delivering DESMOND; behaviours 30 and 31 were specifically highlighted as vital to the delivery of the programme:

"[DESMOND] wouldn't work if you didn't have [co-educator]" (Group B Ed 8, item 31)

Table 7.4 Commonly observed DESMOND behaviours

Item	Description of DESMOND version	% sessions observed (Chap. 6)	% coder agreement (Chap. 5)
10	Uses and refers to participants comments/quotes	64%	59% and 83%
27	Uses strategies to manage time within session	51%	41% and 17%
30	Uses co-educator to support delivery of the sessions	62%	59% and 50%
31	Manages group to provide time and space to complete tasks	66%	67% and 72%
32	Provides overviews of the sessions/day	67%	59% and 50%
36	Engages participants using rapport building skills	56%	72% and 83%

When discussing behaviours 27, 30 and 31, all educators cited many examples of how they worked with their co-educator across the day to manage time and support the participants to complete the tasks. For item 27, they talked about "*negotiating breaks*" (Group A Ed 2), "*reminding people of the finishing time*" (Group A Ed 3), "*parking questions [and] glancing at the clock*" (Group C Ed 57). Behaviour 30 examples included managing groups tasks together "*by taking half of the room each*" (Group C Ed 57), giving additional support when required "*you take that on whilst your colleague carries on*": (Group C Ed 9) and practical examples such as "*handing round the sheets, putting things away*" (Group E Ed 56).

The findings that four of these behaviours were not being observed more frequently, i.e. in more than 70% of session sessions, can be explained by the challenges identified by educators. For example, the difficulty of remembering to do all of these behaviours and the challenge of balancing time whilst allowing participants to talk:

"As long as you remember and go back to it" (Group D ED 54, item 10)

"..you have to accelerate and stop asking questions.." (Group C Ed 9, item 27).

"You have to be able to manage discussions when you have got a really chatty group. It's great but sometimes so hard to say come on let's get back. You have got to raise your voice but you can't as they are so noisy" (Group C Ed 9, item 31)

Behaviour 32 was observed across two thirds of the sessions, but the educators described this as only relevant to one session (as described in the DESMOND curriculum), at the start of the programme, suggesting that educators may not always be aware of the behaviours they are using routinely.

Behaviour 36 (rapport building) appeared to be unique. Although all groups agreed that this behaviour was important, it appeared difficult for them to describe what it involved and how it would be observed, beyond the use of open body language, therefore making it undistinguishable from behaviour 1. Descriptions typically involved words such as "*empathy*", (Group B Ed 8, item 36) "*being engaging*" (Group A Ed 1, item 36), "*not being judgemental*" (Group D Ed 56, item 36). This difficulty in describing could explain why it was not observed more across the sessions (56%). Furthermore, rapport building was discussed as something quite complex to do with *all* the participants in one group simultaneously:

" There's also where you are relating really well to one or two people in the group (……) and therefore closing down on others, so getting an easy ride with some people, rather that actually starting to explore with the quiet people." (Group D Ed 54, item 36)

"Because some people are really easy to build a rapport with and

they are great but then you forget that there is the rest of the group "(Group D, Ed54)

Educators were, however, able to describe what the non-DESMOND version of item 36 would look like, including: being "*teacher-like*" (Group D Ed 54, item 36), "*shutting down the conversation*" (Group D Ed 55, item 36) and "*being dismissive*" (Group D Ed 55, item 36). The complexity and challenges described by educators appear to support that although the DESMOND behaviour of Item 36 was observed in 56% of sessions, there was wide variation between educators. At least one pair of educators being observed using skills to build rapport, yet with at least one pair being observed to not building rapport (Chapter Six).

The ability of educators to easily describe examples of five (10, 30, 31, 32 and 36) of the six commonly observed behaviours provide support for the moderate levels of coder agreement (50-70%). Item 27, however, had lower coder agreement (<50%). Whilst some of the educator examples for this behaviour were probably more visually obvious, for example glancing at the clock, other examples could be argued as more subtle, for example negotiating breaks and reminding people of the time, and hence may explain low coder agreement.

<u>Behaviours for which non-DESMOND behaviour was commonly observed</u>

Looking at the qualitative summaries for the twelve behaviours in this group, I was easily able to group some of these according to themes from my analysis of educators' views: behaviours that overlapped and behaviours that were described as challenging.

Overlapping behaviours

A group of three behaviours and a group of two behaviours were described as overlapping (Table 7.5).

The first group were three behaviours (11,12 and 13) agreed by all groups as being relevant and important behaviours for delivering DESMOND, with educators seeming to take it for granted by referring to " *we are doing this all the time*" (Group C Ed 57, item 13). However, some educators pointed towards the skill and expertise needed for these behaviours and gave examples of wording used to enact these:

> *"It takes practice doesn't it? "What does the group think?" Or "do you have any thoughts about that?" Item 11 (Group A Ed 2, item 12)*

Behaviours 11 and 12 relate to specific situations that would prompt the required educator behaviour. Behaviour 11 relates to participants' questions and behaviour 12 relates to helping the group make sense of content. Both behaviours, therefore, rely on something happening within the group for the educator to respond to. The higher use levels of non-DESMOND behaviours, compared to the DESMOND behaviours may be related to either the educator not noticing the opportunity to use the behaviours, or choosing not to respond to the opportunity.

Table 7.5 Commonly observed non-DESMOND behaviours: Overlapping behaviours (1) and (2)

Item	DESMOND Behaviour	Sessions observed (%) (Chap. 6)	non-DESMOND Behaviour	% sessions observed (Chap. 6)	% Coder pair agreement (Chap. 5)
11	Prompts group to discuss and answer their own questions	29%	Immediately answers most of the questions asked by the group	55%	54% & 50%
12*	Prompts participants to explore misconceptions and gaps in knowledge and their own thoughts about the content under discussion	32%	Immediately provides correct information to fill apparent gaps in knowledge	46%	59% & 60%
13	Notices and prompts participant discussion of personal health beliefs	30%	Avoids discussion of health beliefs within the group	55%	59% &55%
*Item 12 included as educators reported it overlapping with behaviours 11 and 13					
15	Prompts group participants to summarise their key messages from the session	8%	Tends to summarise key messages	70%	67% & 61%
16	Prompts group to summarise their own understanding of the content under discussion	4%	Tends to summarise what she or he thinks is the group understanding (without checking)	73%	54% & 44%

The finding that educators described these as overlapping highlights potential confusion between the behaviours in terms of meaning and distinguishing between them and may explain low percentage that these were seen.

The second group of behaviours described as overlapping are also shown in Table 7.5. Educators revealed some misunderstanding about the meaning of these behaviours, including how they differ:

> *"…so that's the same, content and key messages, surely has got to be the same?" (Group C Ed 56, behaviours 15 and 16)*

> *"well, if we are summarising the session you are hoping that that they have got take home messages from that session" (Group C Ed 56, behaviour 15)*

They also recognised these behaviours as challenging to deliver, particularly in relation to time limits and knowing exactly when to use them.

> *"If we are going to do this at every session, I think we will over run" (Group C Ed 10, item 15)*

Initially most questioned the value of these behaviours, but after discussion many began to agree the importance of them, and discussed how they could be used more within the group, for example:

> *"I think that's probably a mistake I make as I often do summarise it…" (Group A Ed 1, item 16)*

> *"Its important though isn't it because that's how you can assess for yourself that people have got it" (Group C Ed 10, item 16)*

However, after further discussion, the educators agreed that the behaviours were separate behaviours. The qualitative data highlighted challenges associated with

different meanings attributed to behaviours and in the ability to use the behaviour within the time allowed, which emphasises the need to provide specific instructions and examples for apparently similar behaviours. The low to moderate coder agreement levels for the two behaviours could be explained by the coders having differing views about the meaning of the behaviours.

Behaviours potentially challenging to deliver.

There were five behaviours for which the non-DESMOND version was commonly observed (57-81%) and despite educators identifying them as important and relevant, they described them as challenging to deliver (Table 7.6). Cross-cutting themes across educator views of these behaviours, illustrated the need for skill in knowing how and when to use the behaviour when faced with limited time and the potential for educator complacency in using them:

> *"You have got so many bits to get through, if for each question you asked the group you are there for hours" (Group B Ed 8, item 3)*

> *"Oh I am bad at this, remembering to throw it out. I don't always say what does everyone else think….it can get a bit patronising, so you look for different ways of saying it" Item 3 (Group D Ed 55, item 3)*

Four of these behaviours demonstrated varied coder agreement, which cannot easily be explained by the educators' views. In contrast, educator views regarding behaviour 6, highlighted concerns about the impact of exploring participants' feelings; educators were not unanimous about this behaviour's importance and described the tension that may explain high level of the non-DESMOND behaviour. The coder pair agreement was different: good (coder pair A) and poor (coder pair B), which may be explained by the educators concerns regarding the definition of 'exploring'. The same could have been true for coders, with one group of coders being more aligned in their definition of 'exploring' than the other.

"I don't know if I always prompt…I might be getting in too deep" (Group D Ed 54, item 6)

"I don't know…if you are in a group situation…I don't know, I'm not a psychologist" (Group E Ed 56, item 6)

Educators' explanations illuminate the high use of non-DESMOND behaviours, providing insights into the challenges that they face with time and knowing how to use these behaviours.

Table 7.6 Commonly observed non-DESMOND behaviours: Challenging to deliver

Item	DESMOND Behaviour	% Sessions observed (Chap.	non-DESMOND Behaviour	% sessions observed (Chap. 6)	% Coder pair agreement (Chap. 5)
3	Seeks answers from a number of participants before discussing further, including right and	12%	Accepts first right answer and/or immediately provides correct or up to date	64%	54% and 44%
6	Prompts participants to express and explore their feelings about diabetes during the session	19%	Avoids actively engaging participants in emotional discussion	81%	82% and 11%
14	Prompts all participants to ask questions about	21%	Rarely invites ALL participants to ask questions	71%	69% and 30%
17	Prompts self talk about the key messages from the session apply to them	12%	Does not ask participants to reflect on how the key messages apply to them	65%	51% and 58%
21	Prompts participants to talk about what they are going to do as a result of the session	7%	Does not ask participants to talk about what they are going to do as a result of the session	57%	51% and 44%

Further commonly observed non-DESMOND behaviours.

There were four behaviours which were commonly observed in the non-DESMOND version, yet did not easily fit into overlapping or challenging behaviours from educators discussions about them (Table 7.7). Educators described these as important, however, their views differed with regard to each behaviour, with one being used in some sessions, two apparently easy to describe and one generating discussion around the different possible interpretations of the wording.

Behaviour 8 was recognised as important to the delivery of DESMOND, but educators reported only using it if and when participants could not make sense of medical information. Most educators described using the DESMOND analogies provided in the educator curriculum, which are related to two specific sessions, rather that developing their own. This may explain the high level of non-DESMOND observation, due to use in only two of the eleven sessions of the DESMOND programme.

Behaviour 29 was identified by all groups as a behaviour that they used; educators were able to describe specifically how they would try to engage quieter members of the group by '*directly using their name*' (Ed 54 and 55), '*go[ing] over to them*' (Ed 2) and in the activities, '*giving each person a piece of [plastic] food so they have to [talk]*' (55). Two groups described a possible overlap with a previous behaviour (28) as both related to managing participants within the group. Overall, these discussions did not illuminate the potential reason for educators using the non-DESMOND version of the behaviour in 79% sessions.

Behaviour 38, despite being described initially as important, generated discussion of the meaning of '*own opinion*' and how this differed to '*evidence based'* opinion. Whilst some educators believed they did not let their opinion show to participants, those that admitted giving their opinion, believed they were giving evidenced based opinions. However, the high level of the non-

DESMOND behaviour (in 60% of sessions) suggests otherwise:

> *" Mmm…it depends what you mean by opinion" (Group C Ed. 56, item 38)*

> *"As a registered (healthcare professional) I can only use evidence based practice, so it kind of doesn't need saying" (Group B Ed 6, item 38)*

Table 7.7 Commonly observed non-DESMOND behaviours (could not easily group)

Item	DESMOND Behaviour	% sessions observed (Chap. 6)	non-DESMOND Behaviour	% sessions observed (Chap. 6)	%Coder pair agreement (Chap. 5)
8	Uses analogies	25%	Avoids using analogies	75%	79% and 76%
29	Prompts engagement of quieter members of the group	16%	Avoids seeking engagement of quieter members of the group	79%	82% and 50%
38	Avoids giving their own opinion	25%	Educator gives their own opinion	60%	51% and 67%
39	Tone of voice is warm and curious	47%	Educator tone of voice is dominant and autocratic	53%	74% and 61%

Behaviour 39 related to the educator's tone of voice and could only be described by educators in terms of the non-DESMOND version.

> *"I think a word that this could include is condescending…talking down and (being) very authoritative and…knowing what I am talking about" Item 39 (Group A. Ed 1 item 39)*

"[being authoritative is]…everything against what we want of DESMOND… being didactic" Item 39 (Group B. Ed 6)

However, one educator pointed out that people could not always alter the tone of their voice and suggested that this may not be something that should be judged as part of the assessment. The coder agreement levels for these behaviours was good to moderate, suggesting that despite the educators describing differences in terms of meanings and how to enact them, they were easier to agree on as an observer.

<u>Behaviours for which both DESMOND and non-DESMOND behaviour observed in fewer than 50% of sessions.</u>

There were nine behaviours with low levels of observation in both versions of the behaviour and I divided them into three further groups: two behaviours where DESMOND behaviours were seen more than the non-DESMOND (see Table 7.8), two behaviours where levels of observed DESMOND and non-DESMOND were similar (see Table 7.8), and five behaviours where the non-DESMOND versions were seen more that the DESMOND (see Table 7.9).

Where the DESMOND behaviour was observed more that their non-DESMOND counterpart:

Educators were not initially unanimous in either their interpretation of the two behaviours in this category, or their perceived importance. For example, all groups described being confused about the meaning of 'new information':

"Are they talking about the butter and the marge [game], are they talking about that sort of thing?" (Group A Ed 2, item 34)

"I think it's like your activity and lifestyle, where they can access

clubs and things and so you are providing them with new information" (Group A Ed 3, item 34)

"What kind of information?" (Group B Ed 5, item 34)

Within all groups, some educators used the discussions to work out the meanings behind both behaviours, often leading to behaviour 35 being described as important. However, behaviour 34 generated deeper reflection, as demonstrated by educators' attempts to make sense of it:

"I think what this is saying to me is like don't make it hard on yourself don't start throwing in [new information]" (Group A Ed 2, item 34)

"..that [new information] ought to be non curriculum items" (Group C Ed 55, item 34).

Table 7.8 Behaviours (DESMOND and non-DESMOND) seen in less than 50% of sessions

Item	DESMOND Behaviour	% Sessions observed (Chap. 6)	non-DESMOND Behaviour	% sessions observed (Chap. 6)	% coder pair agreement: (Chap. 5)
DESMOND behaviours observed more than non-DESMOND					
34	Only provides new information after group discussion/exploration	45%	Provides new information with little exploration within the group	26%	67% & 78%
35	Explains/Discusses key terms	42%	Avoids discussion of meanings of new terms	13%	56% & 67%
DESMOND behaviours observed similar levels to non-DESMOND					
2	Uses non-judgemental statements in response to participants' verbal utterances	44%	Uses judgemental statements in response to participants verbal statements	46%	67% & 67%
24	Facilitates people to share stories of positive attempts to manage their diabetes	34%	Avoids the use of participant stories of positive success	31%	38% & 44%

Other educators, whilst recognising the importance of item 34, reflected on the dilemma they faced with knowing a lot of information themselves:

> *"..but sometimes I feel I must possibly think, what am I going to say ….you have too much information and you mustn't go there…(Group B Ed 6, item 34)*

> *"it's hard to hold back [from giving information]" (Group B Ed 8, item 34)*

Educators highlighted potential confusion between behaviours 34 and 35, with one group (Group C) specifically describing them as being the same and another using describing 'new information' as 'jargon' (Group B Ed 6). Despite the educators needing to explore the meanings of the behaviours, the moderate to high levels of coder agreement would suggest that coders were able to agree the difference between the two behaviours.

Behaviours where the percentage of observed DESMOND and non-DESMOND versions of the behaviour were similar.

Two behaviours fit this category (behaviours 2 and 24), with behaviour 2 generating much discussion in terms of its importance as an behaviour and the challenges faced in using it to deliver the DESMOND programme. While all groups acknowledged both behaviours as relevant to DESMOND, the discussion generated hinted at the complexity involved in adhering to them. For example, educators described frustration with behaviour 2 suggesting instead that a DESMOND educator should be able to express positive judgement (i.e. praising participants for achieving goals or giving correct answer):

> *"..if somebody says I have lost 3 stone in the last 6 months now I personally we should go 'that's amazing, how did you do it?' but according to DESMOND we should not make a judgement" (Group*

A Ed 1 ,item 2)

"That is something I find difficult not to say 'yes that's really good' and we are not supposed to say it..it's very tempting to say absolutely you are quite right" (Group C Ed 9, item 2)

"I think you have to acknowledge if someone has done something really great" (Group D Ed 54, item 2)

Indeed, concern was expressed that not acknowledging/praising a participant's achievements would have a negative impact on other participants' contributions.

"You want people to talk to you so you want them to share their feelings so you don't want to say something that is going to stop other people from jumping in if you know what I mean (Group C Ed 5, item 2)

This was, however, not a unanimous view, as indicated when one educator raised the potential negative impact of praising one participant on others who had not managed to change behaviour:

Ed 8: "…except I am the person who thinks I have been trying really hard and I haven't achieved that…"

Ed 5: "I personally feel it would be nice for us to be able to say to somebody….well done for achieving that so far"

(Group B, item 2)

The qualitative data emphasised how challenging educators found behaviour 2 and therefore helped to explain the high frequency of non-DESMOND behaviour. The data also demonstrated how educators came to a better understanding of the value of the behaviour's meaning and the need to identify ways of enacting it

through these discussions.

The educators' exploration regarding judgement and non-judgement led to a reflection of the wording of behaviour 24, with the majority of the educators (four groups) disputing the inclusion of only positive stories in the behaviour's description, as they believed that the DESMOND non-judgemental approach should encourage any stories of behaviour change attempts regardless of their success

> *"[the use of positive stories]…that's judgemental isn't it?" Item 24 (Group D Ed 55)*

The moderate level of agreement by both coder pairs for behaviour 2 suggested that coders, like educators, were unable to agree on the observation of educator responses to non-judgemental statements, with positive judgemental statements *not* being coded as non-DESMOND. Behaviour 24 demonstrated low coder agreement by both coder pairs, which cannot immediately be explained by the educator views.

Behaviours where DESMOND version was lower than non-DESMOND version (see Table 7.9).

The qualitative data demonstrated that educators described all five behaviours in this category (behaviours 4, 5, 18, 20 and 22) as important to the delivery of DESMOND but with some qualifications. Educators unanimously agreed that behaviour 22 was both important and relevant to DESMOND, particularly to the goal setting session (session K), which would explain the 11% DESMOND behaviour seen, but not the presence of the non-DESMOND behaviour in a third of sessions.

Behaviours 4 and 20 were both described as relevant or important as a DESMOND behaviour, but all groups only decided this once they explored its meaning. Three groups described using both of these behaviours but for certain

circumstances:

> *"Another example they might say something but it's not generic and you might want to tease it out a little" (Group C Ed 56, item 4)*

> *"Usually this would come after the complications and they will go 'oh gosh' I really need to…" (Group A Ed 4, item 20)*

Although the qualitative data did not provide sufficient explanation for the low levels of DESMOND behaviour in behaviour 4, my field notes provided me with an explanation. I had highlighted occasions when, in response to participants' verbal communications (Behaviour 4), the educator would either write words on a flipchart or verbally respond in a way that surprised me, suggesting that the educator and myself had different interpretations of what the participant had meant. This indicated that some educators may be making more assumptions that they realise.

Behaviour 5 showed mixed views from educators regarding importance and relevance:

> *"I don't like that, I think general healthy eating messages are what we are putting over throughout the session. I think it's confusing for me" (Group A Ed.1, item 5)*

> *"I think DESMOND was fairly specific about what the messages are" (Group B Ed. 6, item 5)*

> *"The point of DESMOND is to hand out key messages and not be prescriptive" (Group D Ed.55, item 5)*

> *"I agree with that but I don't know why it is just focusing on diet" (Group C Ed.10, behaviour 5)*

Behaviour 18 generated similar discussions regarding importance and relevance, with two groups being unsure about the wording. The discussion generated a range of educator insight related to the interpretation of the behaviour, often highlighting the dilemma for educators in wanting people to change their behaviour:

> *" aha…there are some people that won't make a change and it is hard.."(Group A Ed 2, item 18)*
>
> *"No we don't expect people to change" (Group B Ed 5, item 18)*
>
> *"I think it's really hard, if somebody keeps showing really negative responses, I know I am like this [referring to non-DESMOND version]" Item 18 (Group D Ed 55, item 18)*

Similarly, three groups described how behaviour 20 may be a difficult behaviour to deliver, highlighting potential confusion about the item's wording and meaning; some educators mentioned that this related to the participant's specific chosen behaviour (e.g. eating butter) rather than possible options for behaviours to change:

> *"We don't do that, that's like if someone says I am going to carry on eating butter we have to get them to have a discussion about what that might have on their future health, we don't do that" (Group C Ed 56, item 20)*

Table 7.9 Behaviours (DESMOND and non-DESMOND) seen in less than 50% of

Item	DESMOND Behaviour	% Sessions observed (Chap. 6)	non-DESMOND Behaviour	% sessions observed % (Chap. 6)	% coder pair agreement (Chap. 5)
4	Seeks clarification of participants' contribution	42%	Rarely seeks clarification of participants contribution	48%	48% & 72%
5	Avoids giving general healthy eating messages	28%	Provides general healthy eating messages	40%	41% & 50%
18	Acknowledges when participants decide not to make any changes to self- care behaviours or beliefs	22%	Appears to expect participants to make necessary changes. This may be implicitly or explicitly expressed.	46%	49% & 44%
20	Prompts participants to review the impact of possible choices on their future health	25%	Avoids generating discussion about a range of options/impact OR only prompts a single participant to	33%	31% & 58%
22	Prompts individual or group to problem solve barriers to change	11%	Avoids active problem solving support	36%	38% and 50%

Overall, educator discussions on these behaviours suggested that the wording could be misunderstood and required care to interpret. However, even with further discussion, the behaviours created challenges for educators in terms of what they believed they could or should do to demonstrate this behaviour.

Four of the five behaviours showed low coder agreement (behaviours 5, 18, 20 and 22). The qualitative data highlighted the challenge in terms of meaning and difficulty of delivering this behaviour, which may explain the low agreement.

Remaining behaviours

The remaining nine behaviours could not easily be grouped into previous categories regarding observation levels. I was, however, able to group them further in relation to themes from the qualitative data: six behaviours that related to specific sessions, two behaviours that were relevant to the context of the group and one behaviour for which educator perception of its use differed from the observed level.

Behaviours relevant to specific sessions

Six behaviours were described as being relevant to the delivery of one, two or three sessions from the programme only (Table 7.10), but the observation analysis suggests that educators may use them more than they think. For example, behaviour 19 was described by all groups as being specific to session K, yet was seen in nearly 40% of delivered sessions.

Behaviour 26 is specified in the original DESMOND assessment tool as applying to the model of DESMOND when sessions are split into two sessions in different weeks and therefore would expect not be expected to be observed at all as I observed whole delivery of DESMOND. This explained why it was seen in just 1% of the sessions.

Behaviour 23, despite being described by educators as very relevant to the delivery of DESMOND and specifically for session K (the action planning session), was described by all groups as being challenging to deliver, accounting for the high levels of the non-DESMOND version (26% of sessions) observed compared to the DESMOND version (5% of sessions). One group acknowledging the problems they faced with time:

"It can be very rushed and some patients don't fill it in they go through the motions" (Group A Ed 3, item 23)
"Maybe you do have to try but there is little time…sorry.." (Group A Ed 4, item 23)

Table 7.10 Behaviours relevant to specific DESMOND sessions

Item	DESMOND Behaviour	Sessions observed (Chap. 6)	non-DESMOND Behaviour	% sessions observed	% coder pair agreement (Chap. 5)
19	Prompts participants to discuss their thoughts about possible changes to	39%	Avoids generating discussion about possible changes	27%	51% and 44%
22	Prompts the individual or group to problem solve possible barriers to change	11%	Avoids active problem solving support	27%	38% and 50%
23	Prompts participants to reflect on their goals/plans	5%	Avoids reflective discussion regarding goals/plans	26%	18% and 61%
25	Supports participants to plot their results on their health	25%	Provides little support to assist participants with the completion of their	2%	38% and 78%
26	Prompts reflection of changes already made (F2 delivery only)	1%	Does not prompt reflection of changes made	1%	95% and 89%
33	Outlines style of sessions (Session A only)	7%	Does not outline the style of the sessions	2%	95% and 94%

However, three groups described how they have tried hard to change the way they work to ensure everyone is included and given time:

"We are prone to going around the group…they have already worked out what they are going to do and they are quite happy to talk about it" (Group B Ed 5, item 23)

An explanation for the high non-DESMOND version of behaviour 23 may relate to the meaning of the word 'reflect'. Three groups highlighted this as a confusing word; one educator described it as a '*professional activity'* and two others described it as relevant to past, not future behaviour. Only one group described it as a priority, which may explain the low observation level:

'I just don't see participants reflecting' (Interview Ed 57, item 23)

"…(reflect) means to go away and think about it" (Group A Ed 1, item 23)

The qualitative data provided insight into the challenge of delivering this behaviour, which relates to both time and the actual meaning of assisting participants to reflect.

Behaviours relevant to the context of the group.

Two behaviours are reliant on a reaction or behaviour by a participant - i.e. providing the opportunity for the educator to use the behaviour (Table 7.11).

Behaviour 28 was described as complex by most of the groups; educators were unable able to specify what 'managing the group' would look like. Educators did describe being able to manage individuals within the group, albeit with some difficulties. The low observed use of DESMOND behaviour may be explained by the difficulties, or dilemmas, expressed by educators:

" ….you may notice someone talking more than another and you kind of acknowledge that…in one way it may be a good thing that

people are talking…" (Group E Ed 56, item 28)

However, behaviour 28 showed moderate to high coder agreement, which may be explained by the qualitative data in relation to the challenge that educators faced with time to manage issues within the group. An observer may be able to notice issues within the group more easily than the person in the midst of delivering the programme.

Table 7.11 Behaviours relevant to context

	DESMOND Behaviour	% Sessions observed	non-DESMOND Behaviour	% sessions observed	% coder Agreement (Chap. 5)
7	Acknowledges and/or prompts exploration of participant emotional	21%	Retreats from or ignores/denies participant emotional	32%	43% and 55%
28	Notices tone/dynamics within the group, acknowledges these and uses them to manage the group.	5%	Tends to ignore issues within the group	33%	54% and 78%

For behaviour 7, whilst many educators reported that they did acknowledge participants' emotional responses, a number of educators expressed concern about the impact of acknowledging and exploring feelings. Many educators described being more comfortable with acknowledging the emotional words people use, often by writing the words on a flipchart rather than using verbal acknowledgement. Educators expressed concern about DESMOND being the

appropriate forum to explore emotions within the group setting, and one suggested that the opportunity often tends not to happen:

> *"DESMOND is not the forum for that [exploring feelings] it is very difficult to do that" (Group C Ed 56, item 7)*

> *"They [participants] don't seem to come up with anything do they?" (Group D Ed 54, item 7)*

The qualitative data appear to support the observation data (the low percentage of this behaviour) by highlighting issues for educators related to the skills required to both notice and prompt exploration of emotions. The low to moderate coder agreement for behaviour 7, suggests that the coders also may have struggled to agree on what 'noticing' and prompting emotional response looks like. This behaviour would have required the coders themselves to notice the emotional response from the participant, and then observe the educator response.

Behaviours where educators' perception of delivery differed from observed delivery

One behaviour (Item 37 – Table 7.12) highlighted a challenge of the distinction between how people behave and how they think they behave, i.e. the views of educators appeared to differ from the observed behaviour (in terms of percentage seen). The qualitative data from educators revealed that all groups described behaviour 37 as important and reported that they engaged in this:

> *"It [participant engagement in tasks] is core to DESMOND" (Group C Ed 57, item 37)*

Educators had little discussion and debate about behaviour 37, with just one group highlighting potential issues and acknowledging it is a skill developed with experience:

"It can be done wrong" (Group C Ed 55, item 37)

"I can remember when I first started…how we did things it did not include everybody and I actually changed what I did quite a lot because of that…and you want the participants to do the game as a whole group…and some would be there and some would be hanging back…but the way we do it encourages everybody to be able to participate" (Group C Ed 56, item 37)

The difference between the educator perception and the observation findings may be explained by the comments from Ed.56, explaining that when educators start to deliver DESMOND, they did not include everybody in the tasks and found ways to do ensure everyone is now engaged. However, my findings for educator differences (Chapter 6) demonstrated that this behaviour was used differently by educator pairs, with at least one educator pair using the DESMOND behaviour for 100% of the sessions and one educator pair not using it at all.

The coder agreement for this behaviour was low to moderate, explained potentially by the educators' perceptions that they are doing it, but the objective observations suggest otherwise. Coders may also have differed in their view about the meaning of 'full engagement' of participants.

Table 7.12 Behaviour where educator perception differed from observed delivery

Item	DESMOND Behaviour	Sessions observed % (Chap. 6)	non-DESMOND Behaviour	% sessions observed (Chap. 6)	% coder pair agreement (Chap. 5)
37	Facilitates full participant engagement in interactive tasks	30%	Tends to facilitate interactive tasks with only a few participants	47%	46% and 61%

7.4 Summary of Findings

The use of original DESMOND assessment tools in relation to their delivery of the programme.

Educators did not describe using the original DESMOND assessment tools as part of their day-to-day practice as a DESMOND educator. A number of educators needed reminding of the tool being discussed. The tool was described as complex and not easy to use in practice, supporting the findings in Chapter Five.

The potential for a revised assessment tool

Educators asserted that a more usable assessment tool would both aid their own reflection on action as a DESMOND educator and also support them as they provide peer review to colleagues. Many described a useful assessment tool being one that is just 1-2 pages in length, easy to look at and contains specific descriptions of what they should and should not be doing. Such clarity was described as helping them have greater objectivity in their reflections. Furthermore, a request was made for the provision of a more detailed educator behaviour guidance manual to back up the simple reflection tool.

The behaviours in the revised tool

The revised behaviours were described with varying levels of importance and relevance for the delivery of the DESMOND. However, some behaviours provoked much discussion as educators sought to clarify the behaviour's meaning. The views of educators about the DESMOND behaviours helped to explain the frequency of observations and the variation in delivery between educator pairs as reported in Chapter Six. This analysis also provided some insight into coder agreement levels reported in Chapter Five; in general, behaviours that were easier to observe, according to educator descriptions,

seemed to be those for which there was greater agreement by observers. However, some frequently seen DESMOND behaviours (reported Chapter Six) were described by educators as having a variety of subtle behaviours, which may explain the low agreement by coders reported in Chapter Five. Behaviours observed as high levels of non-DESMOND behaviours, reported in Chapter Six, were also behaviours described by educators as having different meanings, overlapping or a challenge to deliver in the DESMOND programme.

7.5 Discussion

The use of focus group discussions with educators provided valuable insight into the findings of Chapters Five and Six and into the work of DESMOND educators. Specifically, the analysis provided additional information on the wording of behaviours within the revised assessment tool, the assessment process itself and the training needs of educators.

The educators were all experienced, accredited educators, yet during the focus groups the majority of educators described the usefulness of discussing the behaviours in some detail as a small group, helping them to work out the right meanings of words and phrases. Such discussions allowed them to explore how these words and phrases related to their own practice, and provided an opportunity to think differently about their work as a DESMOND educator. The use of focus groups provided an unexpected training opportunity for educators to reflect on their practice. The use of visual cards, each with the DESMOND and non-DESMOND versions of all of the behaviours, acted as a key focus the discussion and would be a potential resource for future training of educators.

There were limitations in the use of this approach. Firstly, my moderation of the focus groups. Reviewing the transcripts afterwards highlighted how some behaviours were only superficially discussed and identified points that could have been more thoroughly probed. Second, my role as a facilitator may have been a biased by my interest to explore certain behaviours from my own perspective. However, I was aware of this and introduced each behaviour with

the same questions, yet on reviewing my own dialogue in the transcribed discussions, I observed times where I perhaps led the group more that I would have liked to. Many of the educators knew me from my work with DESMOND and occasionally asked for my opinion, which I avoided giving. Lastly, the use of a one-to–one interview (to capture the views of the educator who could not attend the focus group) did not provide the peer related discussions and reflections observed in the focus groups

7.6 Conclusion

Overall, the findings from exploring educator views highlighted how the original DESMOND quality assurance tools were not used by educators to assist them in the delivery of the programme, beyond using them to make sure they delivered the content of the programme when being assessed. When provided with details of the revised DESMOND and non-DESMOND behaviours, educators were able to explore the meaning these had to their practice.

The detailed findings from the focus groups with educators provided insights into why some behaviours were used more than others, and more likely to be used by some educators and not others. The views highlighted the conflicts that educators face when delivering the DESMOND programme.

Knowing more about the views of educators provided insights into the behaviours that may need to be discussed with educators in more depth to understand the training needs.

Chapter 8 Thesis Summary and Conclusions

8.1 Introduction

This thesis addresses a research question that broadly relates to the assessment of delivery of complex interventions designed to support optimal self-care of those with long-term conditions such as type 2 diabetes.

The overall aim of my research was to review aspects of the effectiveness of a quality assessment tool used to assess educator delivery of a structured self-management programme. My thesis describes an iterative, stepwise process, using the DESMOND case study to examine aspects of validity and reliability of the quality assurance tools used to assess educator delivery. This work resulted in the revision of the DESMOND assessment tool. The process of examining the original DESMOND assessment tool, along with my revision of it has provided key information about how educators use different behaviours in the delivery of DESMOND, which can inform current and future training methods. Additionally, the revised tool could be used by educators themselves as a means of reflecting on their own practice.

This final chapter reports a summary of the whole thesis. Chapters One to Three provide an overview of the evidence base for the context of my thesis and the formulation of my research questions. Chapters Four to Seven report the aim, methods and results of my studies to answer the research questions. In this chapter, as this work focused on an existing assessment tool used to accredit educators, I summarise my recommendations for the use of the revised tool and its implications on quality assurance processes within DESMOND and similar programmes. Lastly, I consider the limitations of my work, and the potential areas for future research generated from this thesis.

8.2 Scene setting, evidence review and developing the research questions

Chapter One

Self-management education programmes, designed to increase effective self-care, have the potential to reduce health burden and improve wellbeing of individuals themselves and the costs to society as a whole. The successful delivery of self-management interventions, in terms of participant outcomes, is influenced by a range of factors, one being the behaviours of the educator (Hardeman et al. 2014, Loveman, Frampton and Clegg 2008). However, the role of the educator can be difficult to assess and quantify. A number of frameworks provide guidance, but the detail of educator delivery is not routinely reported by those who design interventions (Toomey et al. 2015, Schinckus et al. 2014). Group based self-management interventions are usually led by one or two educators and delivered to groups of ten or more participants. Educators are often health care professionals; the requirements of the programme often requires that they adopt a new way of working with people with long-term conditions. Quality standards for the delivery of diabetes self-management education have been developed at an international and national level. In England, the national criteria for structured self-management programmes (SSMPs) consist of five standards, one of which focused on the assessment and assurance of the educator's delivery of the programme. However, the standards are limited in terms of the detail that may be required to objectively assess the educator role. They do not specify criteria for educator behaviours or provide guidance on aspects of validity and reliability of an assessment tool. Studying this led to my initial research question: how have existing SSMPs, in England, interpreted the national criteria for the assessment of the educator role?

Chapter Two

The national standards for SSMPs contain three core elements for the quality assurance of educator delivery: an assessment tool based on the course

manual; core standards linked to the content, process and philosophy of the programme: and trained assessors who use a tool to assess educator delivery. Only three national programmes (DAFNE, DESMOND and XPERT) have reported on their quality assurance processes. Each describe using observation methods, trained assessors and an observation tool to assess educator delivery. However, DESMOND is the only one that has examined the effectiveness of these processes and highlighted potential limitations with both the validity and reliability of the observation tool. In the broader field of complex intervention research, the development of valid and reliable observation tools is reported as a key part of assessing fidelity of delivery. Such observation tools are ideally developed during the research phase of a study. From this literature review, I identified that components of a model of good practice for assessing the delivery of an SSMP would include:

- A clear description of the core components of the intervention, described in terms of educator behaviours.
- An assessment tool, designed to support the observation of the prescribed and proscribed educator behaviours, which has proven content validity and inter assessor reliability.
- A reflection tool, based on the assessment tool, which can be used by educators to support self-reflection.

The limited publications from the UK diabetes SSMPs highlighted a need to understand more about how to best implement the national criteria for quality assuring SSMPs. To consider this further, I developed a number of research questions that would allow the study of a quality assurance tool currently used to assess delivery of an SSMP:

1. How well are the educator behaviours described in the SSMP assessment tool?
2. How consistent are educator behaviours described in the assessment tool with the key components of the SSMP programme?
3. How do the behaviours in the assessment tool relate to educators' delivery of the programme?
4. Which behaviours in the assessment tool do educators think are important and relevant to their delivery of the SSMP?

5. How reliable is the assessment tool when used by others?
6. How and for what purpose is the assessment tool used for self and peer reflection?

Chapter Three

DESMOND assessment tools were chosen as a suitable case on which to answer my research questions. The DESMOND programme has a set of quality assurance tools that are used to assess educator delivery as part of the educator accreditation programme. However, there are questions regarding how well the tools function – both in terms of external assessment and as an internal, educator self-reflection tool. Using a case study method, I developed a plan of research to examine the DESMOND quality assurance tool. The research design used a mixed methods approach to examine aspects of content validity and inter-rater reliability, and to explore educator views of the relevance and importance of the educator behaviours.

8.3 Answering the research questions

Chapter Four

Overview

Chapter Four described how I assessed the level of consistency of the DESMOND behaviours compared to a list of theory based behaviours to provide an assessment of content validity of the original DESMOND assessment tool.

Research question (2)

How consistent are the educator behaviours described in the assessment tool with the key components of the DESMOND programme?

Research Findings

I defined key components of the DESMOND programme as the underpinning theories of the programme: Social Learning Theory, Dual Processing Theory,

Common Sense Model and an empowerment based philosophy. I developed a set of operational descriptions to provide a theory-based list of behaviours (n=31) to compare with the DESMOND behaviours. By mapping the DESMOND behaviours to the theory based list of behaviours, I demonstrated that 77/100 DESMOND behaviours were consistent with the behaviours representing the key components of the DESMOND programme. I concluded that the current DESMOND assessment tool showed good content validity in relation to its underpinning theories.

Strengths and limitations

By using a structured approach to searching the literature, I identified key papers to examine for the descriptions that other intervention developers have used to describe educator behaviours. Despite the limited number of publications that included adequate descriptions, I was able to identify words and phrases used to develop a set of behaviours to create that I then referred to as theory based. However, my literature review was structured and focused but not systematic. The use of systematic review methods may have provided a more robust approach, and thus identified further papers. The involvement of additional reviewers would also have provided more reliability in my findings leading to their generalisability.

Implications

The assessment of the content validity of the original DESMOND tool provided confidence that the behaviours were consistent with the core components of the programme. Further, it identified five theory based behaviours not represented in the original DESMOND assessment tool which could be further examined for relevance to the programme.

Chapter Five

Overview

Chapter Five reported the iterative approach I used to answer two of my research questions related to the descriptors of behaviours in the current DESMOND assessment tool and the reliability of tool when used by others. I

report on each of these research questions separately.

Research Question (1)

How well are the educator behaviours described in the DESMOND assessment tool?

Findings

The original DESMOND assessment tool contained 100 behaviours described as educator behaviours, 22 core behaviours and 78 session specific behaviours. The behaviours in the this version of the tool included many that were not specifically focused on the behaviour of the educator and instead referred to behaviours of the participants and behaviours that emerged as hard to observe. For example, behaviours that combined a behaviour with delivery of informational content; behaviours that related to an educator's attitude educator and behaviours that were described in a way that led to complexity and misinterpretation. Using a range of methods, I developed a revised DESMOND assessment tool containing 39 individual DESMOND congruent behaviours, each with a paired NON DESMOND congruent behaviour.

Strengths

Designing a series of steps provided a systematic framework with which to guide me through the complex task of scrutinising the 100+ potential DESMOND behaviours, while taking care to track all changes to the original tool. The development of three criteria provided an objective judgement to define behaviours to be included in the tool. The use of other observers during the development of the revised assessment tool increased the practicality of the tool and provided insights into issues that may influence reliability.

Implications

The work in Chapter Five led to a revised the original DESMOND assessment tool into one that had been examined for the objectivity of included items (in terms of being educator behaviours) and included prescribed and proscribed behaviours sorted into groupings with overarching labels.

Many researchers do not report specific details of theory based educator roles, a finding supported by the literature. Guidance has been published on the required criteria for reporting of intervention components, including the assessment fidelity to the core components and modifications/adaptations to the intervention (Hoffmann et al. 2014, Moore et al. 2015, Pinnock et al. 2015).

To assist the reporting and replication of interventions that are designed to support behaviour change, Michie and colleagues devised a taxonomy of Behaviour Change Techniques (BCTs) (2013). Researcher are encouraged to use the taxonomy to report the specific techniques involved in an intervention, using a shared language. However, a problem that has emerged is that of the BCT definitions do not highlight the personal style of the educator, i.e. *how* the technique is delivered (Keogh et al. 2015). When comparing the behaviours in the DESMOND assessment tool to those in the taxonomy, the DESMOND behaviours did not fit perfectly, rather they appeared more focused on the style of the delivery by the educator. The use of taxonomies, whilst providing helpful guidance in the development and delivery of complex interventions, may not provide the insights that thoughtful in-depth analyses, of the intervention delivery, may offer (Hawe 2015).

Research Question (5)

How reliable is the assessment tool when used by others trained to use it?

Findings

The pilot of the first draft of the revised assessment tool showed a low percentage agreement between three coders (myself and two others) with only 19% (9/46) of behaviours reaching full agreement. Following five revisions, the final revised DESMOND assessment tool reached an acceptable level of agreement of 72% (24/33 behaviours).

Inter coder reliability of the final revised DESMOND assessment tool was assessed using the observations of two pairs of coders (each pair consisting of myself and a different coder) independently rating 45% and 20% of DESMOND sessions respectively. Coder agreement of behaviours in the final revised

assessment tool was analysed using two recommended methods: percentage agreement and Cohen's Kappa statistic. There was good percentage item agreement for just 8/39 behaviours (coders pair A) and 11/39 behaviours (coders pair B). Analysis of coder agreement using Cohen's Kappa provided similar results, with 9/39 (coder pair A) and 12/39 (coder pair B) behaviours being rated as having moderate to good coder agreement. Overall, inter coder reliability of the revised DESMOND assessment tool can be described as moderate at best.

Strengths and limitations

The use of DESMOND experts as coders meant potentially that training of would be relatively straightforward, yet the requirement for five rounds of training suggested otherwise. However, using DESMOND experts provided me with an opportunity to assess the reliability of coding by people who represent future users of the assessment tool.

Asking the two coders to code different deliveries, with me coding all of the deliveries, provided me with a greater sample of my own coded data to analyse for reliability against the others. However, if I had asked the coders to assess the same sessions, then I might have identified the particular behaviours that coders were not coding the same as each other. Given the small number of paired data (18 sets of data) for coder pair B, the analysis may have been limited. A larger sample may have led to more tests of reliability reaching statistical significance.

There is a possibility that there was coder fatigue or drift over time. I did not keep a track of the timing of coding results return in relation to when coders had been trained. By doing so, I may have been able to show that coding undertaken close to training showed greater agreement that later on, i.e. that coder agreement was related to coder drift (Haidet et al. 2009). As the coders provided the coded data over a period of six months, I could have monitored reliability at regular time gaps and provided retraining should the reliability be found to be lower than planned.

Assessing levels of agreement, using item percentage agreement, throughout the development of the first draft of the revised tool, provided information regarding specific item related confusion by coders. The use of two methods to assess inter rater reliability added strength to the findings.

Implications

The level of training required by expert coders, combined with the low levels of reliability, highlights the training requirement for anyone using an assessment tool to observe and accredit educators.

Before the revised DESMOND assessment tool can be used reliably to gather data on educator behaviour, further work is required to establish whether reliability can be improved by enhancing the tool itself or improving coder training.

Chapter Six

Overview

Chapter Six reported the study of whether educators used DESMOND or NON DESMOND behaviours in their delivery of DESMOND.

Research Question (4)

How do the behaviours in the assessment tool relate to educators' delivery of the DESMOND programme?

Findings

Overall, all 39 of the DESMOND congruent behaviours were all seen delivered by educators across the delivery of the programme. Eight DESMOND behaviours were seen frequently, in more than 50% of sessions. Four of these related to group management behaviours and task related behaviours, for example: 'uses visual tools', 'provides overview of session', 'provides time to complete tasks' and 'uses participant comments'.

Across the nine programme, educators were observed to use more NON

DESMOND behaviours than DESMOND behaviours. Thirteen Non-DESMOND congruent behaviours were observed across more than 50% of the sessions. Seven behaviours related to facilitation of reflective learning by participants; for example: 'avoids seeking engagement of the quieter members of the group', 'tends to summarise what the s/he thinks the group is understanding (without checking)', 'rarely invites all participants to ask questions' and 'accepts first right answer and/or immediately provides correct or up to date information'. Three further non-DESMOND behaviours related to the role of the educator as an expert and authority figure. However, the analysis of the educator pair differences demonstrated that educators differed in their use of the behaviours, in that some educator pairs using more DESMOND and less non-DESMOND than others.

Finally, 37/39 of the behaviours (either DESMOND or non-DESMOND version) were observed in use across all eleven DESMOND sessions, suggesting that the revised DESMOND assessment tool can be used to assess the delivery of the programme by observing a selection of the sessions, rather than all of them.

Strengths and limitations

Using the revised DESMOND assessment tool to code the behaviours of 15 educators delivering nine DESMOND programmes produced a large dataset (97 sessions) to enable me to answer this question. With sufficient resources, it may have been preferable to sample more purposefully, looking for programmes where the delivery was different. I accessed groups of educators who had been delivering DESMOND for many years (range 2 – 7 years) and within the same teams. The delivery style of the first trained educator in each team may have influenced the whole team. Educators who have been recently trained and not exposed to experienced educators may have provided different views and delivered the programme using different behaviours.

The potential bias of my personal observations of the educator behaviours has to be highlighted. I developed the DESMOND programme, have been an assessor/trainer/educator for many years and developed the behaviours within the revised tool. Thus, I could be considered as a skilled user of the tool.

However, the same level of involvement may have introduced bias into the development of the tool, for example; being potentially blinded to aspects of behaviours that did not fit with my DESMOND paradigm. The use of collaborative approaches in my study highlighted the differences between my meaning of behaviours and the meanings of others, providing a means of highlighting potential behaviours of personal bias.

Implications

The observation of educator delivery of many NON DESMOND behaviours highlights a requirement for DESMOND programme leaders to consider the impact of this finding. First, should these behaviours be removed from the assessment tool as they are not commonly delivered by educators? If they are considered important to the delivery of the programme, then improving the training of educators in relation to these behaviours is vital.

Chapter Seven

Overview

Chapter Seven reports on how I used qualitative data to better understand the results of Chapters Five and Six – by exploring educator views on the value and meaning of the DESMOND assessment tools and the revised behaviours.

Research Questions

(5) How and why is the tool used for self and peer reflection?

(6) Which behaviours within the tool do educators think are important to their delivery of DESMOND?

Findings

The 15 educators whose delivery was recorded and studied for Chapters Five and Six, indicated that they only used the original DESMOND assessment tool for self and peer (co-educator) reflection when they started as a DESMOND educator, but most admitted no longer using it. They also reported using the reflection sheet, which provides little guidance about desired behaviours, rather than the tool itself and described the tool as complex and cumbersome. They did, however, see the value of a well-designed tool that would help them be more specific in assessing their own delivery of DESMOND and that of their

peers. In addition, educators described how an assessment tool could help them with their day-to-day reflections as an educator, but it would need to be easy to use.

The educator views provided further insight into the why some of the behaviours within the revised tool showed high and low percentage use and high to low inter coder agreement. Educators reported that all the 39 revised DESMOND and NON DESMOND congruent behaviours were relevant and important to their delivery of the programme. Using each of the paired descriptions of the 39 behaviours, educators clarified which ones they found easier to use – often describing examples - and those they described as challenging – and in these cases either struggled to provide examples or described contextual reasons (for example, the need to provide the required diabetes related information to participants) for when/why enacting the behaviour was so difficult to enact. This is turn helped to explain some behaviours' percentage use and coder agreement, as behaviours that educators could equate to were the behaviours that were easy to notice in observation.

Explanations for the use of many NON DESMOND behaviours included challenges of delivering diabetes knowledge and facts under time pressures, whilst generating knowledge and views from the group, encouraging participant discussion related to their thoughts and feelings about diabetes and behaviour change.

Strengths and limitations

Interviewing the same educators whose delivery I had analysed in Chapter Six increased the validity to my findings as I could compare their views of the delivery on their actual delivery. Undertaking the interviews myself allowed me to focus discussions on frequently and infrequently used DESMOND and NON DESMOND behaviours. However, my role in facilitating the views of educators may have been biased by my role as a DESMOND trainer and assessor. My personal bias regarding educator behaviours may have influenced my line of questioning. Knowledge of my role by the educators may also have influenced their responses.

Implications

Educator views on the DESMOND behaviours highlight a number of implications for the delivery of the programme. Overall, the educators welcomed the revised DESMOND assessment tool and the description of behaviours in terms of prescribed and proscribed behaviours.

Educator views highlighted the challenge for them as DESMOND educators, all of whom were healthcare professionals, in deciding which role they should be adopting, that of expert or self-management support facilitator. The challenge for some educators to prioritise delivery of knowledge based content over engaging participants to talk more, to avoid encouraging participants to express their feelings and the desire to praise positive outcomes described by participants highlight how a DESMOND programme may be delivered differently by educators. However, the challenges may not be limited to time and skills based competence.

When exploring the dilemmas faced by nurses in providing good care and providing good self-management support, Dwarswaard, van de Bovenkamp (2015) highlighted a number of ethical dilemmas experienced by nurses that may also be experienced by the educators in my study as I explain:

- The dilemma of respecting patient autonomy versus reaching optimal health outcomes: some DESMOND educators admitted needed to give advice and information and found it difficult not to do so.
- The dilemma of respecting patient autonomy versus stimulating patient involvement: some DESMOND educators described being challenged by people not wanting to change.
- The dilemma of providing a holistic approach to self-management support versus safeguarding professional boundaries: DESMOND educators described not being professionally trained or not perceiving their role to be someone that explores emotions.

The meaning of these dilemmas for educators has been studied as part of the development of a new intervention based on using a flexible patient-centred

approach. Whilst reportedly being keen to adopt this new way of working, educators struggled with the 'obligation to communicate a vast amount of diabetes knowledge and correct patient misunderstandings' (Voigt et al. 2014). Gaining insight into the meanings of new roles for healthcare professionals appears to be assisted by the use of metaphors. For example, Voigt (2014) used the analogy of juggling to reveal four roles that educators (as Health Education Jugglers) have to juggle while working with groups in this way, each of these relates to the ability to master each set of skills:

Embracer (takes care of the group)
Facilitator (generates dialogue and participation)
Translator (communicates professional knowledge)
Initiator (motivates action in participants)

My study provides further evidence of the juggling nature of the educator role and may serve to provide behaviours that link with each of Voigt's identified educator role. However, the juggler role does not illustrate the potential conflict that educators in my study appeared to describe, that of professional responsibility. A further metaphor, that of 'striking a balance', was identified during interviews with diabetes educators, the balance being that between, on the one hand, educators' professional obligation to provide diabetes information and on the other, the need for the educator to facilitate 'compassionate interpersonal interactions' to support patient self-efficacy (Fleming et al. 2013). Fleming (2013) highlighted the difficulties for educators in striking this balance. This supports my finding that educators could identify the value in DESMOND behaviours, yet struggled to work out how to implement some of them. Identifying educators' personal role related metaphors may provide insight into the strengths or challenges they may have in delivering a self-management programme. Identifying such metaphors may provide a focus for those who require more training and support to deliver an intervention as desired by the programme leaders.

8.4 Implications and impact for practice and policy

Current practice impact of my research for the DESMOND programme

The series of studies reported in this thesis have informed and improved the quality development processes of the DESMOND programme. Whilst writing the thesis, I have worked with key members of the DESMOND programme team, and quality development assessors to:

1. Assess the relevance and importance of the behaviours in the revised assessment tool, leading to the agreement for planned adoption of the revised assessment tool into use in the DESMOND programme (UK and Australia). DESMOND leaders, assessors and trainers in both countries unanimously agreed the relevance of all 39 behaviours in the revised assessment tool. Overlapping behaviours identified by educators (Chapter Seven) were discussed and refined. The behaviours in the sixth category (potential DESMOND behaviours) were incorporated into the other five categories. A plan of training assessors in the use of the revised assessment tool has been agreed.

2. Assess the agreement levels between current DESMOND assessors in the use of the revised assessment tool and design and provide training to support increased levels of agreement.

3. Review the current assessment process, based on my findings. As my research demonstrated that the majority of behaviours are observed across all DESMOND sessions, the revised DESMOND assessment tool will be used to assess educator behaviours across the delivery of the programme as a whole rather than for each session. However, each session will continue to be assessed for session specific aspects of content knowledge.

4. Revise the Guidance Manual for use by educators, assessors and trainers to better support the easier coding of DESMOND deliveries using the findings of

Chapters Five and Six.

5. Develop a single page educator reflection tool that summarises all the educator behaviours on one page in an easy to use format. A summary tool is to be used by assessors to support educator feedback at their assessment.

6. Review how to optimise the training of educators, in particular, training on the DESMOND congruent behaviours which were least frequently observed in my study.

7. Provide guidance and training in the use of the revised assessment tool in other educational interventions developed and delivered at the Leicester Diabetes Centre.

Implications of my study findings beyond the DESMOND programme.

A method to assess the fidelity of educator delivery

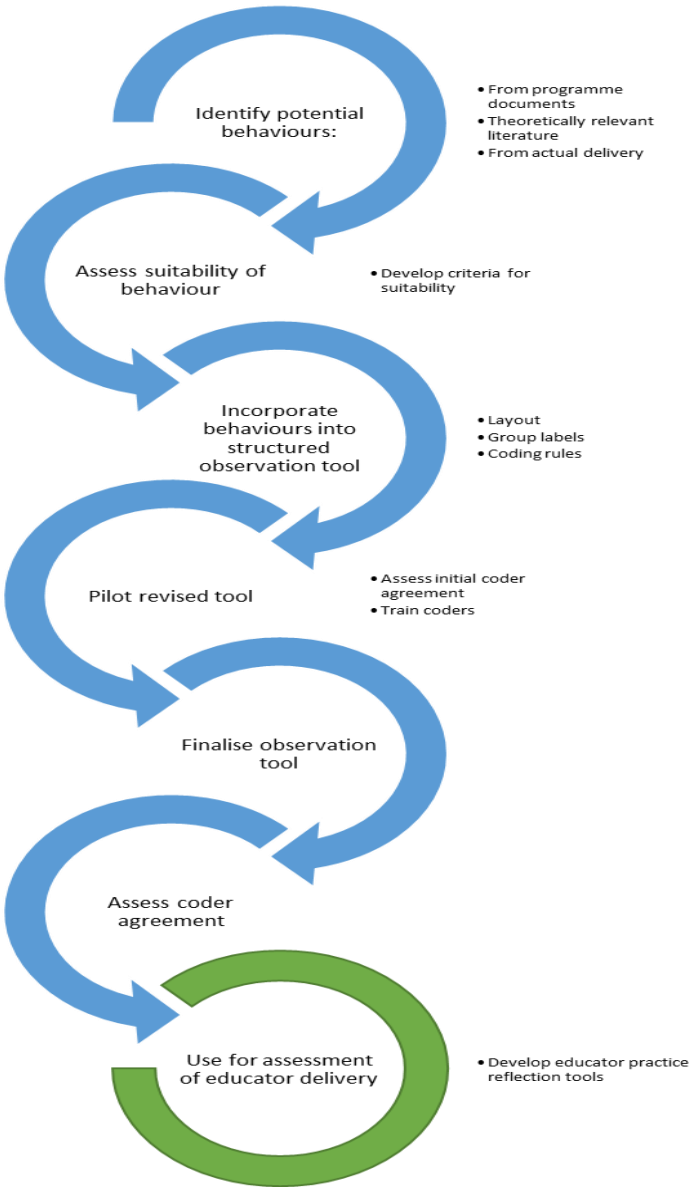
My study findings suggest that it is possible to describe and measure the educator role in self-management interventions, and that doing so provides insights that can be used to clarify the educator role (in terms of behaviours) support the training of the educators and provide a means of assessing quality of delivery. However, as previously reported, this can be a challenging task in terms of decisions and time, and often not undertaken (Schinckus et.al. 2014, Toomey et.al. 2015). Through my research, I have developed a set of methods that provide a step by step process to assist others to describe both the role and assess the educator delivery fidelity of their intervention. The process of developing a structured observation tool, based on their programme descriptors, which can support the assessment of the delivery fidelity is depicted in a graphic below (Figure 8.1).

Core educator behaviours

I have generated a list of behaviours, assessed as meaningful to educators, that could be considered as core behaviours for interventions based on theoretically

similar programmes to DESMOND. The list of behaviours may provide a starting point for similar programmes, which could use the process outlined in figure 8.1 to add programme specific behaviours to tailor the behaviour list.

Figure 8.1. Developing an observation tool to assess educator behaviour



Potential future impact on policy implications.

I have developed a method for reviewing the content validity, reliability and usability of a quality assessment tool for educators' delivery of a structured self-management programme (SSMP). The method could also be adapted and used

for developing such a tool for new and existing SSMPs. The process would be particularly useful for SSMPs based on similar theoretical approaches, for example it could be of value to the XPERT programme, which describes being based on Social Learning Theory and the same empowerment based approach as DESMOND (Deakin 2006). However, any adoption of the tool will require training by those using it.

By demonstrating that accredited educators may not deliver the programme as planned, my study has highlighted the need for ongoing training and mentoring. Once accredited, there is little opportunity for DESMOND educators to reflect on their practice or undergo further assessment. An innovative solutions would be designing an e-learning resource for educators to use prospectively to facilitate continuous reflection on their practice; embedded videos of prescribed and proscribed behaviours would enhance reminders of underpinning theories and behaviour change techniques.

In the absence of UK national competencies for those who deliver diabetes education, some behaviours within the revised DESMOND assessment tool may act as a basis for such competencies. Using a DELPI consensus building approach may offer an opportunity to develop an agreed set of competencies.

8.5 Recommendations for future research

As expected, my path to the answering research questions, provided many answers, but along the way identified more questions.

Improving the reliability of the revised DESMOND assessment tool

Further work is needed to increase the reliability of the revised assessment tool. First, to identify the causes of low reliability e.g. problems with the individual behaviours, the way they are scored, the number of behaviours and/or training of assessors in the use of the tool. This is essential before the tool can be used in clinical practice.

Improving reliability between assessors of self-management programmes

Where NHS led self-management programmes use external assessors, my findings suggest a requirement to agree acceptable levels of reliability between such observers. Within research studies, such work should be identified in funding applications. However, where programmes are being implemented in health services, a pragmatic approach will be required to consider best to support this given the reliance on NHS funding.

Understanding the delivery of programmes

My study focused on discrete behaviours of educators, and measured using the concept of adherence, i.e. did the educator use these or not. I have not explored how the concept of competence [i.e. the extent to which the educator competently delivered aspects of the programme (Mars et al 2013)] could be assessed. Identifying behaviours in the revised DESMOND assessment tool that demonstrate the competence of an educator may highlight which behaviours require external assessment by a trained ‘expert’ judge of competence, and those which do not.

Theoretical descriptors of educator behaviour

I have created a list of educator behaviours that represent the four underpinning theories for the DESMOND programme (Chapter four). To support their use in the descriptions of intervention based on these theories (for example, empowerment based interventions) further work is required to establish their content validity.

Training educators in the use of behaviours that appear to be most challenging to them (pre- and post-training)

The small sample of educators may limit the generalisability of my observations related to educator delivery of DESMOND and the specific behaviours they used. However, the triangulation of the views of educators to their use of behaviours suggested that the use of some behaviours were challenging due to both their skills and opportunities to use the behaviour. This is the aspect of generalisability that should be considered by all those developing complex self-management interventions.

Rather than providing generic educator training, (i.e. the same training programme to all educators), there is some merit in considering how to provide a more educator focused training programme, by, for example, initially assessing educator beliefs and behaviours with online questionnaires and activities that illuminate the preferred educator style, possibly using the metaphors identified by Voigt (2014). It could then be possible to match training to aspects of educator performance identified as needing further training.

The impact of programmes with different components and levels of fidelity on participant outcomes

The basis for all of this work is based on the evidence that the role of the

educator impacts on participant outcomes. The tool that I have developed provides a potential for researchers to observe and study educator behaviours. For example, one programme team could decide that twenty of the 37 behaviours match their programme delivery components, and use these to assess those who deliver the programme.

8.6 Final reflections

I am a nurse who has devoted over 30 years of my professional life to finding the best way of helping people with a condition to become their own experts in self-management. I have searched for ways of better ways to engage people with diabetes in their own self-care. I have believed that we, as healthcare professionals, underestimate the impact of our ability to interact and communicate as part of our work. On one hand, with the number of professional articles on healthcare communication being found in any search engine, the issue is clearly one of importance. Yet on the other hand, the lack of national competencies for nurses in relation to healthcare communication and, related to my work, being a healthcare educator, assumes that we have either the skills or can easily learn them. My career has provided me with a number of opportunities to understand the nature of this potentially powerful interaction. I met with international experts and developed 'empowerment-based' communication workshops with colleagues (Anderson et al. 2000). I worked with researchers to examine my own practice and that of my team (Parkin, Skinner 2003). I worked as part of a national advisory group (DUK/DOH 2004) to develop standards for the delivery of interventions and as a result, worked with a group of experts to develop a SSMP (DESMOND) and assisted in the development of a tool outlining the required content and behaviours for the programme, to help educators and assessors know what was expected of them. Each step has led me closer to the research questions that underpin this thesis. Prior to the research undertaken for my thesis, there had been no investigation of the tool's validity, reliability or usability, but anecdotal evidence indicated some deficiencies.

To support those with an important role to play in supporting self-care, I believe we need to understand how to help educator explore their barriers to change and be much clearer about *how* they can use themselves more effectively. I am, like others, convinced that this is a challenge for most given the culture of the 'acute problem orientated model' (Wagner, Austin and Von Korff 1996), one which supports dependency by the patient on us identifying and solving the clinical problem.

My experience has shown me that to change our practice, like any other behaviour change, we need resources and a structure to help us to purposefully reflect on what we currently do (not what we think we do):

- Time, and ability to review our *own* current behaviours
- A practice guidance framework that makes sense to us, to clarify what we are trying to do (what success would look like)
- Then, a guided practice approach to explore more about what we could do better.

This requires the support of someone who focuses on the facilitation of the process rather than the steps to the plan – so it should be used as a framework for reflection about the plan rather than the checklist to complete (the checklist becomes more important than the talking about it).

My work started with a keen interest in finding a tool that shows educators how well they are doing in terms of being the 'right' educator and progressed to an interest in the assumptions we have made about what we are teaching and what we are assessing. Therefore, the need to explore DESMOND from the educators' perspective grows but the challenges of meeting the needs of the commissioners of the service remain. Yet if I am able to describe the process more clearly from the perspective of educators as well as get a sense of how they view the tools, then it will be possible to help programme directors consider the barriers with more awareness.

The tension between individual perspectives and defining the truth in terms of

the *right* educator behaviours seems to mirror the challenges faced by research paradigms. My understanding of philosophical research paradigms is limited, however, my use of case study methodology and associated reading helped me understand how I view the world through a constructivist paradigm lens, as I believe truth is relative and dependent on the perspective of the individual. This personal paradigm has been a strength for undertaking the exploratory aspects of this thesis (Chapter Seven) but has challenged me when I needed to focus on the aspects of my research that required a more positivist approach. However, this thesis provided the opportunity for me to stand back from my previous assumptions and consider the tools used to observe and quality assure educators in greater depth.

The study's findings provide insight into some of the problems of developing a language for educator behaviours. Firstly, I, and others, may have used language that did not resonate with peers. Secondly, even if words may appear to be interpreted in the same way, people may have different perceptions of the meaning. If we are to expect educators, with responsibility for delivering a complex intervention, to be clear about their role, then their role should be described with clarity to minimize misinterpretation. However, some behaviours are not easy to define in simple terms, and other means of establishing a shared meaning and purpose are required to assist educators to have some chance of delivering them. One option to being clearer about what educators should be doing is involving them in the design and development of the programme, providing opportunities for clarifying roles and functions. However, this would limit the options for those involved in the programme's implementation, unless other ways of involving educators in the decision making processes of SSMPs can be developed. This may be helped by the development of an e-learning resource, designed to engage educators more actively with the required behaviours.

A final word about the language used by those developing SSMPs, and the power words may hold. Whilst my thesis has not focused on the perceptions of participants of SSMPs, the role of educators may be hindered by the continuing

expectation of participants' of the programme and educators, for example of a more typical/traditional healthcare professional who helps their patients. By using the word 'patient' in programme material, for example 'patient education' and 'patient empowerment', such language continues to support the paternalistic role of the healthcare professional, and the 'patient' will continue to be a subservient, passive recipient of information. The word 'education' appears to imply teaching of information rather than a participatory learning process. By using words that align better with the underpinning theories, such as facilitators of active self-learning, may have more of an impact on participants' expectations. The team responsible for the development of empowerment-based interventions, Anderson and Funnel, have acknowledged this by describing their programme as a diabetes self-management support programme rather than diabetes self-management education programme (Funnell, Tang and Anderson 2007).

8.7 Overall thesis conclusion

The use of a case study method provided a useful framework with which to review the current DESMOND assessment tool, used by independent observers to judge and accredit educators in terms of their competence to deliver the DESMOND programme. The current assessment tool, whilst demonstrating content validity in relation to the stated core components of the DESMOND programme, was not suitable as a structured observation tool. Revising and improving the tool required an iterative process and resulted in the inclusion of a set of behaviours that were relevant but informed by the theoretical basis of the programme. Observation of the delivery of DESMOND programmes demonstrated that accredited DESMOND educators used a range of both DESMOND and non-DESMOND congruent behaviours. Educators' views about the ease and challenge of using these behaviours, gathered by the use of focus groups, highlighted a requirement for a review of the behaviours within the revised tool. For example, the high number of frequently observed non-DESMOND behaviours should prompt programme developers and directors, to consider first, what, if any, changes should be made to the behaviours expected

of educators, and second, how training to increase educator use of the required DESMOND behaviours can be improved.

The work reported in this thesis has highlighted a number of specific issues:

- Intervention developers need to be clear about what constitutes congruent and non-congruent educator behaviours (or other core components) to the underpinning theories of their intervention.
- Developing structured observation tools to assess educators provide opportunities to refine behaviours and the format of such tools so that inter-rater reliability can be optimised.
- Asking educators about their understanding of the core delivery aspects of SSMPs may help them identify their own training needs
- Quality assurance tools can be used to support self-reflection and thus promote intervention fidelity.
- Educators may not be delivering the intervention as expected. Assessing what they are able to do, and what behaviours they struggle with, can provide feedback for future training programmes.
- Quality assurance tools need to be assessed for reliability when being used by more than one assessor for accrediting educator performance.

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Assessing a quality assurance tool used to assess educator delivery of a structured self-management education programme: A Case Study

APPENDICES

Appendices

QUALITY DEVELOPMENT TOOLS

Welcome to the QUALITY DEVELOPMENT TOOLS which are made up of the DESMOND Observation Sheets (DOS) and the DESMOND Observation Tool (DOT). The purpose of these is to assess the interaction of the Educator and the group. This guide will give you a helping hand through the process and explain how the tools are used.

DESMOND Observation Sheets (DOS)

Educator behaviour and facilitation skills

The lists are drawn directly from the DESMOND curriculum, but within DOS, they are all allocated a score. These lists describe the observable behaviours and facilitation skills of the Educator during each session. Some of these indicators are generic to all of the sessions and others are specific or more important in certain sessions. For these please refer to the session sheets.

The Educator behaviour and facilitation skills are scored using:

- '**Most of the time**' this is given if the Educator used most opportunities to demonstrate that behaviour
- '**A little of the time**', if they demonstrated this behaviour less frequently
- Some indicators require a '**Yes or No**' answer as they either occur or not

There is a list of **Generic Educator Behaviour and Facilitation Skills** within this document. However to achieve accreditation Educators will be required to meet generic and specific session criteria.

This generic sheet will enable behaviours to be noted whenever they occur. They are likely to occur in most sessions and if they occur in one then they are likely to occur in most. It was agreed via consensus that some are more important than others and are indicated by the shaded boxes. If an Educator does not demonstrate these behaviours this is a sign of development needs.

Content Framework

The content covered is recorded in terms of what is mentioned yes (✔) or no (✘). The criteria have been taken from the Educator Manual and are scored using a simple 'yes' or 'no' system.

Educators should be looking to meet the criteria as indicated in 'Content Framework' of each session

DESMOND Observation Tool (DOT)

The DOT is used to assess the interaction between the Educator and the group. An electronic prompt on a CD which 'beeps' every 10 seconds prompts the listener to record what type of interaction is taking place at that point in the session. There are 5 sessions that can be evaluated using the DOT. These are:

- **Session B: Patient Story**
- **Session C: The Professional Story 1: Type 2 Diabetes & Glucose**
- **Session H: The Professional Story 2: Risk Factors and Complications**
- **Session J: Taking Control 2: Food Choices**
- **Session K: Diabetes Self Management Plan**

Educators will be assessed on one of the Professional Story sessions and one other. If two Educators are being assessed on one QD visit, each Educator must facilitate one of the Professional Story sessions.

The DOT is split into 3 separate columns where the listener will decide who is speaking at that moment in time when the 'beep' on the CD sounds.

- If one of the Educators is speaking, then put a mark in the Educator column of the score sheet.
- If it is one of the Participants (person with diabetes or carer), put a mark in the Participant column of the score sheet.
- If it is silent when the beep sounds, or if there are a lot of people talking, engaged in an activity, or laughter etc… a mark will be put in the Miscellaneous column of the score sheet.

At the end of the session the number of marks are added together in each box, and then totalled in the marked scoring box. To calculate the % of Educator speaking in the session, take the score for Educator talking (A) and divide by the score for all three categories (A+B+C). This will give you a number between 0 and 1, so multiply by 100 to convert to a percentage.

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Session A: Introduction and Housekeeping

Duration: 10 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	Yes ✔	No ✘
Prepares room and resources for the programme		
Begins the session on time and introduces themselves/any observers and their roles		
Welcomes participants and their accompanying person		
Provides necessary housekeeping, health and safety information		
Explains the aim of the day and the rationale for the course		
Outlines the style of the sessions		
Answers questions relevant to this session		
Introduces the **Patient Handbook** and the **Action Plan**		
Meets 6 of the criteria		

Content Framework	✔ or ✘
Housekeeping details, e.g. fire drill, refreshment breaks, location of toilets, register of attendance etc.	
Introduction to the day and rationale for the course	
Outline of the day and the main topics to be covered	
Information that although sessions will contain some bad news, people will have the opportunity to gain knowledge and skills in how to prevent problems with their diabetes	
Meets all of criteria	

Examples of Observed Behaviours

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Session B: The Patient Story

Duration: 40 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	A little of the time	Most of the time	Notes
Uses open questions and generic behaviours to enable participants to share their personal understanding of their diabetes			
Records each participant's story on the prepared flip charts			
Ensures everyone in the group is heard and given time to tell their story			
Clarifies their understanding of each participant's contribution and story where appropriate			
			Meets 3 of the criteria

Content Framework	✔ or ✘
How Long? - How long do they think they have had diabetes?	
Signs & Symptoms - How did they know/find out they had diabetes?	
Causes - What do they believe caused their diabetes?	
Long-term Effects - What do they believe are the long-term effects of diabetes?	
Treatments - What do they believe are the effective treatments for their diabetes?	
Burning issues/Important questions - What is the one question for which having an answer would help them feel that today has been worthwhile	
Meets all of criteria	

Examples of Observed Behaviours

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Session D: Monitoring - How Can You Do It?

Duration: 30 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	A little of the time	Most of the time	Notes
Uses open discovery questions, reflection and visual tools to:			
• Work out how blood glucose levels vary in people with Type 2 diabetes			
• Explore relationship of glucose in the urine and blood			
• Support individuals personalising the use of self-monitoring			
• Explore how urine and/or blood glucose testing can aid self management			
• Work out what HbA1c is			
• Work out how it is measured			
• Understand what the results mean			
• Explore how self-monitored blood glucose levels are related to HbA1c levels			
	Yes ✔	No ✘	Notes
Supports the participants to plot their own HbA1c result onto their own **My Health Profile**			
			Meets 7 of the criteria

Content Framework	✔ or ✘
The purpose of glucose self-monitoring and how each individual can use the information	
How to interpret the tests	
How to act on tests (options)	
Target levels for urine and blood tests	
Long-term glucose control is measured using glycosylated haemoglobin (HbA1c)	
Current recommended targets of HbA1c (and how this differs from self-monitoring)	
Introduction to **My Health Profile** from the **Patient Handbook**	
Meets 5 of the criteria	

Examples of Observed Behaviours

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Session E: Taking Control 1: Food Choices: Glycaemia and Insulin Resistance

Duration: 45 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	A little of the time	Most of the time	Notes
Uses open discovery questions, reflection and visual tools to:			
• Enable participants to recall main messages in relation to food and glycaemia			
• Enable participants to work out foods that contain carbohydrate			
• Enable participants to work out how different foods effect blood glucose levels			
• Explore factors that influence weight			
• Explore options for change in relation to weight			
• Elicit the benefits of small changes			
Will seek to support the group to answer their own questions, providing answers only when unavoidable			
Relates the activities to the group's specific needs			
			Meets 6 of the criteria

Content Framework	✔ or ✘
Short-term effects: carbohydrates - type and amount	
Carbohydrate foods are those which affect blood glucose levels	
Identifying which foods are concentrated in sugar and their low sugar alternatives	
Food labels and their limitations in relation to sugar	
The varying glycaemic effect of foods	
Factors which affect the glycaemic effect of carbohydrate food	
Long-term effects:	
Foods that are high in saturated fat are linked to insulin resistance	
Foods that are high in calories, and central obesity, are directly related to insulin resistance (they make the locks rusty)	
The concept of energy balance in relation to physical activity and calorie intake	
A small energy deficit will, if sustained, lead to slow, steady weight loss, and thus small changes in food intake can have a significant effect on risk factors	
Fat and alcohol are the most concentrated source of calories from our food choices	
All types of fat are high in calories	
Meets 8 of the criteria	

Examples of Observed Behaviours

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Session F: Reflections So Far: 1

Duration: 5 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	Yes ✔	No ✘	Notes
Uses open discovery questions, reflection and visual tools to:			
• Facilitate reflection/'self talk' from participants about how key messages apply to them as individuals			
Acknowledges feelings			
			Meets 1 of the criteria

Content Framework	✔ or ✘
Time for participants to reflect on key messages so far	
Introduction to the content of the sessions in Part 2 of the programme	
Each participant identifies a personal key message	
Meets 2 of the criteria	

Examples of Observed Behaviours

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Session G: Reflections So Far: 2 **FOR USE IN F2 - OPTIONAL in F1**

Duration: 10 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	Yes ✔	No ✘	Notes
Have all flip charts visible			
Facilitates discussions regarding participants' current concerns/questions resulting from the first part of the programme			
Outlines main topics covered in the rest of the programme			
Uses open discovery questions, reflection and visual tools to:			
• Discover changes participants have made (F2 only)			
• Enable participants to reflect on thoughts and feelings			
			Meets 3 of the criteria

Content Framework		✔ or ✘
Content of the sessions in Part 2 of the programme		
Reflection upon what participants have learned/experienced so far		
	Meets 2 of the criteria	

Examples of Observed Behaviours

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Duration: 45 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	A little of the time	Most of the time	Notes
Uses open discovery questions, reflection and visual tools to:			
• Enable participants to explore the complications of Type 2 diabetes, using **Patient Story** flip charts			
• Elicit factors that accelerate blood vessel damage			
• Elicit information from participants in order to develop a picture of what happens in the body when blood pressure and cholesterol levels are high			
• Gain an understanding of the participants' awareness of depression			
• Understand the impact of depression on people and diabetes specifically			
• Enable participants to generate a flip chart for each item on the **My Health Profile** identifying action points and options			
Supports the group to answer their own questions and only provides answers when this is unavoidable and as appropriate			
	Yes ✔	No ✘	Notes
Uses visual tools to assist participants in understanding how blood vessels are affected			
Discusses screening programmes and their role in diabetes care			
Facilitates completion of the **My Health Profile**			
			Meets 8 of the criteria

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Session H: The Professional Story 2: Risk Factors and Complications

Duration: 45 mins Start: ..... Finish: .....

Educator: .....

Content Framework		✔ or ✘
The potential complications of diabetes		
How complications are caused		
Risk factors that contribute to the development of complications		
Target for each risk factor		
Ways in which each risk factor can be modified		
Content and value of annual review in identifying early signs of complications		
The relationship between depression and diabetes		
Completion of personal health profile		
Meets 6 of the criteria		

Examples of Observed Behaviours

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Session I: Physical Activity

Duration: 30 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	A little of the time	Most of the time	Notes
Uses open discovery questions, reflection and visual tools to:			
• Generate a list of the benefits of physical activity			
• Generate a list of the current recommendations			
• Explore barriers to success and how to overcome these			
• Explore personal options for change			
• Explore options for managing barriers			
• Generate options for physical activity and building up activity time and intensity (Physical Activity Continuum)			
			Meets 4 of the criteria

Content Framework	✔ or ✘
The effects of physical activity on risk factors	
The benefits of physical activity	
The current national recommendations for activity levels	
The current resources available locally for increasing activity (health walks, prescription exercise)	
Options for building up activity levels in terms of time and intensity	
The barriers to physical activity and options to overcome them	
Meets 5 of the criteria	

Examples of Observed Behaviours

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Session J: Taking Control 2: Food Choices: Focus on Fats and CVD

Duration: 55 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	A little of the time	Most of the time	Notes
Uses open discovery questions, reflection and visual tools to:			
• Relate what participants have learned from previous flip charts that link fat/cardiovascular risk/insulin resistance			
• Facilitate discussion around the different types of fat found in food and identify the different fat sources in food			
• Facilitate a discussion that enables debate around the pros and cons of different types of fat			
• Generate what is recommended in terms of oily fish portions per week, and the alternative sources of Omega 3 for those who do not like oily fish			
• Explore the benefits of 5 portions of fruit and vegetables a day			
• Seek to assist participants to consider personally relevant nutritional questions			
• Help participants work out what makes a difference to the fat content of food and how to identify some specific changes they can make as individuals (Fat Continuum)			
• Help participants identify food choices that are high in Omega 3			
Avoids giving unsolicited generic healthy eating messages			
			Meets 7 of the criteria

Content Framework	✔ or ✘
Main food messages in relation to cardiovascular disease and how they link into food choices	
Fat in food is linked to most risk factors- insulin resistance, lipid profile, weight, blood pressure	
Types of fat	
Omega 3 and oily fish	
Where fat is found in foods, and methods of reducing fat intake	
Benefits of eating 5 portions of fruit and vegetables a day	
Meets 5 of the criteria	

Examples of Observed Behaviours

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Session K: Self Management Plan

Duration: 30 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	Yes ✔	No ✘	Notes
Signposts participants to relevant flip charts and Taking Control leaflet in Patient Handbook			
Works with co-Educator to deliver this session			
Provides enough space and time to enable participants to quietly reflect on the plan			
Ensures participants have the opportunity go away with a written and completed action plan			
Demonstrates the completion of a clear action plan using 'step wise' approach			
Provides individuals with support for completion of action plan as required			
Enables participants to recognise when barriers exist to completing action plan			
Provides individual time for those with specific needs			
			Meets 7 of the criteria

Content Framework	✔ or ✘
Being aware that personal risk factors can help identify areas for change	
Benefits of a personalised plan	
SMART(ER) goal setting applied to development of personal action plans	
Success is based on the belief that change is important	
The impact of confidence and competence on making change	
Identifying barriers and how to overcome them	
Meets 5 of the criteria	

Examples of Observed Behaviours

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Session L: Burning Questions and Future Care

Duration: 10 mins Start: ..... Finish: .....

Educator: .....

Educator Behaviour and Facilitation Skills	Yes ✔	No ✘	Notes
Uses flip chart to review individuals' burning questions			
Facilitates group to discuss how to find answers to outstanding questions			
Brings session to a close and thanks participants for their contributions			
			All of the criteria

Content Framework	Mentioned ✔ or ✘
Review of list of burning issues and questions	
An answer is provided to all questions or a means to provide an answer is established	
Ongoing care and support	
The provision of a 1:1 discussion if required	
	Meets 3 of the criteria

Examples of Observed Behaviours

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DOT Sessions

Session B: The Patient Story - Target score = Educator speaking below 40%		
Educator Talking	Participant Talking	Miscellaneous
Total A:	Total B:	Total C:
(Total A) ÷ (Total A + B + C) = x 100 = SCORE		

Session C: The Professional Story 1: - Target score = Educator speaking below 65%		
Educator Talking	Participant Talking	Miscellaneous
Total A:	Total B:	Total C:
(Total A) ÷ (Total A + B + C) = x 100 = SCORE		

Session H: The Professional Story 2: - Target score = Educator speaking below 65%		
Educator Talking	Participant Talking	Miscellaneous
Total A:	Total B:	Total C:
(Total A) ÷ (Total A + B + C) = x 100 = SCORE		

Session J: Taking Control 2 - Target score = Educator speaking below 55%		
Educator Talking	Participant Talking	Miscellaneous
Total A:	Total B:	Total C:
(Total A) ÷ (Total A + B + C) = x 100 = SCORE		

Session K: Self Management Plan - Target score = Educator speaking below 50%		
Educator Talking	Participant Talking	Miscellaneous
Total A:	Total B:	Total C:
(Total A) ÷ (Total A + B + C) = x 100 = SCORE		

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Generic Educator Behaviour and Facilitation Skills

These are observable behaviours applicable to most sessions. Specific behaviours and skills can be found on session specific sheets.

Meets criteria if achieved 'Most of the time' in 8 or more of the shaded boxes.

	A little of the time	Most of the time
Supports Systematic Processing		
Enables participants to explore how, if they did not know the answer to a question, they could find out		
Uses open discovery questions and reflection to assist participants to explore misconceptions and gaps in knowledge		
Uses open discovery questions and reflection to help participants to scrutinise, ask questions about what is being discussed and work things out for themselves		
Avoids using inappropriate closed questions which may close the group down		
Supports Social Learning Theory		
Demonstrates empathy using words or phrases (reflective questioning) that show you have recognised what life is like for that individual ('entered that person's world') and/or recognised their emotions; noticing their unique experience		
Provides time for participants' personal reflection including the use of silence		
If people attend but choose not to make changes, we will support that		
Facilitates people to share their success stories about positive attempts to change their lives to help their diabetes control		
Uses open discovery questions and reflection to assist in developing options for managing barriers		
Uses opportunities throughout the sessions to allow the group to 'problem solve' e.g. to find an answer to a question/issue (as opposed to the Educator being the problem solver)		
Supports Common Sense Model		
Uses open discovery questions and reflection to assist participants to challenge their own attitudes and beliefs and those of other participants		

	A little of the time	Most of the time
Supports Common Sense Model		
Uses open discovery questions and reflection to assist participants to share their personal understanding, experience, health beliefs and feelings related to diabetes (health belief model)		
Uses open discovery questions and reflection to assist participants to explore understanding and beliefs		
Uses participants' words/phrases and analogies when working through the session content		
Uses open discovery questions and reflection to assist participants to accept personal beliefs, without Educators giving positive or negative judgemental comment		
Facilitation Skills		
Refers participants to comments on the flip charts at appropriate points		
Facilitates participants to contribute in a way in which they feel comfortable by acknowledging all contributions and thanking them for their contributions		
Uses the curriculum to support the structure of the sessions		
Educators work as a team		
Uses time effectively		
Appropriate body language, tone of voice and non-verbal communication		
Provides individual support outside of the sessions to those who require it		
Uses appropriate humour to support group engagement		
SHADED AREA TOTAL		
NON-SHADED AREA TOTAL		
MEETS CRITERIA	**Yes**	**No**

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Matrix for Recording Generic Educator Behaviour and Facilitation Skills

This is a synopsis of the generic Educator behaviours & facilitation skills to be used during QD visits to support **'most of the time'** and **'a little of the time'** criteria

Desmond

Behaviour and facilitation skills	Name of Session											
	Session A	Session B	Session C	Session D	Session E	Session F	Session G	Session H	Session I	Session J	Session K	Session L
Supports systematic processing												
Participants to explore how they can find out answers to questions												
Discovery questions to explore misconceptions												
Discovery questions to work things out												
Avoids inappropriate closed questions												
Supports social learning												
Demonstrates empathy for individuals												
Provides time for participants' reflection												
Supports people's choice to not make changes												
Facilitates people to share success stories												
Discovery questions to manage barriers												
Problem solving opportunities												
Supports common sense model												
Discovery questions to challenge attitudes and beliefs												
Discovery questions to share personal understanding and beliefs												
Discovery questions to explore participants' understanding and beliefs												
Uses participants' words/phrases												
Discovery questions without negative judgemental comments												
Facilitation skills												
Refers participants to flip charts												
Facilitates participants to contribute												
Uses the curriculum												
Educators work as a team												
Uses time effectively												
Appropriate body language												
Provides individual support outside the session												
Uses appropriate humour to support group engagement												
SHADED AREA TOTAL												
NON-SHADED AREA TOTAL												

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Appendix 2

DESMOND Core Behaviours Assessment Sheet

Quality Development

	Some of the time	Most of the time
1. Assists participants to **share** their personal understanding, experience, health beliefs and feelings related to diabetes		
2. Assists participants to **challenge** their own attitudes and beliefs as well as those of other participants		
3. Assist participants to **explore** their understanding and beliefs		
4. Assists participants to **accept** personal beliefs about their diabetes, without judgement (positive or negative)		
5. Uses participants words/phrases and analogies when working through the session content		
6. Assist participants to **explore** misconceptions and gaps in knowledge		
7. Assists participants to **scrutinise, ask questions about what is being discussed** to enable them to work things out for themselves (either as individuals or as a group)		
8. Facilitates participants to **share their stories about positive attempts** to change aspects of their lives to help manage their diabetes		
9. Supports individuals to personally explore their challenges in relation to their diabetes and how the programme activities are influencing that		
10. Demonstrates empathy using words or phrases (reflective questioning) that show you have recognised what life is like for that individual (entered the persons world) and/ or recognised their emotions; noticing their unique experience		
11. Provides time for participants personal reflection including the use of silence		

	Some of the time	Most of the time
12. If people attend but choose not to make changes, that is respected by the Educator		
13. Uses open discovery questions and reflection to assist participants in developing options for managing barriers		
14. Uses opportunities throughout the sessions to allow the group to 'problem solve' (to find an answer to the question) instead of the Educator being the problem solver		
15. Refers participants to comments on the flip charts to support reflection and problem solving		
16. Facilitates participants to contribute in a way in which they feel comfortable by acknowledging contributions		
17. Uses the curriculum to support the structure of the sessions whilst adapting it to meet the needs of the group		
18. Educators work as a team to deliver a person centred programme		
19. Uses time effectively to ensure that the key messages are explored		
20. Appropriate body language, tone of voice and non verbal communication		
21. Provides individual support outside of the sessions to those who require it		
22. Uses appropriate humour to support group engagement.		
SHADED AREA TOTAL		
NON-SHADED AREA TOTAL		
MEETS CRITERIA Educators will pass an assessment with a score of 14 or more	**Yes**	**No**

- Some of the time = used few opportunities presented to use this behaviour
- Most of the time = uses most opportunities presented to use this behaviour

Shaded boxes are NOVICE behaviours and all need to be met (scoring most of the time) to meet criteria:

- Each behaviour in a shaded box will accrue 1 point (most of the time)
- If a shaded behaviour is NOT met (some of the time) then a score of 0 will be accrued.

Unshaded boxes are EXPERT behaviours and accrue 2 points if met 'most of the time' and 1 point if me 'some of the time'.

NHS

Desmond

APPENDIX 3

The literature search strategy for literature based behaviors.

2 databases were used for the search, as I expected that 'similar interventions' might be published in a range of publications that would not be covered by using a single database. Medline and Scopus were searched for articles related to each of the 4 DESMOND underpinning concepts using a similar approach.

The initial key words used for the search were: Self-Management
And Intervention And Empowerment Or
Social Learning Theory Or
Common Sense Model Or
Dual Processing Theory

Period for search: last 12 years (2002 – 2014)

Following a search for the individual theory/philosophical concept and 'self-management' (which generated many items), these results were combined with a search for interventions.

Inclusion Criteria

Types of Conditions
Any long- term health condition

Type of Interventions
Chronic Disease/Long Term Conditions, face to face group or 1:1 interventions where the description of the intervention involved one or more of the underpinning concepts

Type of Study
Randomised, non-randomised and pilot studies were included. Any paper describing the development of a proposed intervention; the use of theories or modeled using one or more of the components in relation to self-management of a long-term condition/chronic illness.

Literature Review Strategy Matrix

MEDLINE and SCOPUS databases were searched using the framework below.

Search Component	A	B	C	D	E
Search Terms	Social Learnir Theory OR Self Efficacy	Dual Process Theory	Common Sense Mode	Empowerment based	Self Management AND Interventions
Combination o Search Terms	A+E B+E C+E D+E				
Limiters	. English Language Only . 12 year limit . Human . Reviews and Articles				
Inclusion Criteria	Related to health interventions delivered to adults Related to long term conditions/chronic disease Mention Empowerment/Social Learning Theory/Dual Process Theory or Common Sense Model in the abstract Published by key authors of concepts A,B,C and D				
Exclusion Criteria	Non health based Web based intervention				

Search Results

MEDLINE SEARCH

	Social Learning Theory/Self Efficacy	Common Sense Model	Heuristic Systematic processing/Dual Processing Theory	Empowerment-based
	3009/30719	382	82/33**	21140
SM* (22036) +Intervention (663389)+Key Term	194/3014	50	0/0	1208
Included from Titles	129	23	10/12	363
Included from abstract	19	23		22

*Self-Management

** reviewed titles

SCOPUS SEARCH

	Social Learning Theory/Self Efficacy	Common Sense Model	Heuristic Systemati processing/Dual Processing Theory	Empowerment-based
	8073	2138	696	17327
SM* 10356 +Intervention 569330 +Key Term	22	12	0	144
Included From Titles	8	11	11	71
Included from abstract	8	11	11	17

Appendix 4: Mapping of DESMOND behaviours to theory based behaviours

Behaviours identified from the Literature review of DESMOND philosophy and theories.

Empowerment based : EMP
Social Learning Theory: SLT
Common Sense Model: CSM
Dual Processing Theory: DPT

	Item	Mapped onto DESMOND LIST
EMP 1	Using open questions and reflection to facilitate exploration of challenges with self- management	CO9
EMP 2	Using open questions and reflection to facilitate exploration of the fact that participants are the ones who can effectively manage their condition	
EMP 3	Using open questions and reflection to facilitate problem solving	C5 CO 7&14 G2
EMP 4	Using open questions and reflection to facilitate clarification of meaning	B4
EMP 5	Using open questions and reflection to facilitate exploration of feelings	CO2
EMP 6	Using open questions and reflection to facilitate personalised goal setting/action planning	K 4 K 6
EMP 7	Using open questions and reflection to facilitate committing to action	
EMP 8	Use interactive teaching strategies that assist personalised learning from content developed by participants	E8, CO 15 &17 ?C1
EMP 9	Spend more time listening than giving advice	
EMP 10	NOT judging – positive or negative	?CO4

SLT1	Facilitating proactive self by using open questions to assist the patient to take responsibility for their learning outcomes, well-being, illness management and setting benchmarks	Complex statement? C5, D3,E7,F1, H7,I4,J6, J7

SLT2	Facilitate the development of 'successful' trials by supporting participants to practice desired activity and guides through the task	E2,I6,J4,J7,J8, K3-K7
SLT3	Facilitates self reflection and self learning based on previous and current experiences	B1,C1-C5,D1-D8,E5,E6,F1, G5,H1-H9,I1-5,J1-J8,
SLT4	Facilitating the expression (what did you do and how did you do it) of successful attainment by a competent other role model.	CO8
SLT5	Facilitates the group to solve a problem from within the group, seeks strategies from within the	C5,E7,H7,L2
SLT6	Facilitates exploration of obstacles met by others during goal attainment	I5, CO13
SLT7	Facilitates participants to find a solution, make a plan	K1, K3-K8
SLT8	Facilitates positive feedback, helping participants interpret the experience as success	
SLT9	Facilitates elicitation of knowledge in relation to the desired solution/behaviour	?CO6
SLT10	Facilitates the exploration, recognition and correct attribution/interpretations of specific physiological symptoms (How did you feel…)	B1,C4,C6,H3,CO1
SLT11	Facilitates the exploration, recognition and correct attribution of illness specific emotions	H4,H5,CO1
SLT12	Increases Outcome Expectancies by facilitating reflection by individuals on outcomes/consequences (benefits and costs) resulting from diabetes related performance	

CSM1	Explore and challenge currently held cognitive beliefs in relation to the 5 aspects of the model (Cause, Consequences, Controllability/Cure, Identity, Timeline)	B1,B2
CSM2	Listen and assist in forming accurate representations of the illness	C1-C6, H1-H10 CO6
CSM3	Provide information that assists in the forming of accurate representations of the illness	C1-C6, H1-H10 CO6
CSM4	Explore and challenge currently held emotional beliefs about the illness	CO2, CO9
CSM5	(The use of 'sensory monitoring' to correctly attribute symptoms to the illness)	D1-D9

DPT1	The educator provides little information, facilitating the exploration of knowledge and information within the group	CO14
DPT2	The educator will use open questions to keep the participants of the group engaged in dialogue related to the subject/topic	B1,F1,G4,G5 All session C, D,E,H,I,J
DPT2	The educator will use open questions and reflection to enable to participants to explore in a deeper, analytical manner	B1,F1,G4,G5 All session C, D,E,H,I,J

Appendix 5

DESMOND Assessment Tool Item Development Log: 105 ITEMS REVIEWED AGAINST BEHAVIOURAL CRITERIA

Section A	Items from the DESMOND Assessment Tool Session specific sheet	(coded DbC)	14 items
Section B	Items from DESMOND Assessment Tool CORE behaviours	(coded CB)	22 items
Section C	Items from DESMOND Curriculum Session Specific Sample Script	(coded CSS (c))	43 items
Section B	Items from DESMOND Manual Chapters	(coded DM)	26 items

Table heading detail

Code	Current DESMOND assessment tool behaviour	Is the behaviour…			Comment	Category*	Revised item description
		Educator behaviour	Active	Single behaviour			
The label given to the item	The wording of the original item	The 3 a-priori criteria			My comments regarding the items	The category to which the item is best matched	A revised item for revised assessment tool V1

*Categories that each item could be allocated to:

Attitude of educator
Combined educator behaviour and content related purpose
Combined educator behaviour and purpose
Obvious overlap of item with another
Purpose without behaviour
Potential behaviour but includes subjective meanings
Suitable behaviour with no change
Suitable behaviour with small change (eg removal of content)
Complex item – needs further review
Very detailed behaviour

A. Original DESMOND Items for Session C: educator behaviour							
Code	**DOS Educator Behaviour Item**	**Educator behaviour**	**Active**	**Single behaviour**	**Comment**	**Category**	**Potential Revised item**
DbC1	Uses open discovery questions to elicit information from participants so as to develop a picture of what happens in the body with type 2 diabetes	Y	Y	N	Behaviour and purpose	2	Asks open questions (about what participants know about the content area under discussion)
DbC2	Uses reflection to elicit information from participants so as to develop a picture of what happens in the body with type 2 diabetes	Y	Y	N	Not a clear behaviour, includes purpose. Reflection is a complex behaviour	2	Uses reflective statements: repeats what participants have said
DbC3	Uses Visual tools To elicit information from participants so as to develop a picture of what happens in the body with type 2 diabetes	Y	Y	Y	Behaviour and purpose.	2	Uses Visual tools
DbC4	Uses open discovery questions To enable participants to work out treatment options for managing blood glucose levels.	Y	Y	N	Behaviour and purpose.	2	Asks questions about what participants know about the content area under discussion
DbC5	Uses reflection To enable participants to work out treatment options for managing blood glucose levels.	Y	Y	N	Behaviour and purpose. Reflection is a complex behaviour	2	Uses reflective statements: repeats what participants have said
DbC6	Uses Visual tools To enable participants to work out treatment options for managing blood glucose levels.	Y	Y	Y	Behaviour and purpose.	2	Uses Visual tools
DbC7	Uses open discovery questions To explore the causes and effects of Type 2 diabetes	Y	Y	N	Behaviour and purpose.	2	Asks questions about what participants know about the content area under discussion
DbC8	Uses reflection To explore the causes and effects of Type 2 diabetes	Y	Y	N	Behaviour and purpose. Reflection	2	Uses reflective statements: repeats what participants have said.
DbC9	Uses Visual tools To explore the causes and effects of Type 2 diabetes	Y	Y	Y	Behaviour and purpose.	2	Uses Visual tools

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
DbC10	Uses open discovery questions To assist understanding of what happens in the body with Type 2 diabetes	Y	Y	N	Behaviour and purpose.	2	Asks questions about what participants know about the content area under discussion
DbC11	Uses reflection To assist understanding of what happens in the body with Type 2 diabetes	Y	Y	N	Behaviour and purpose. Reflection is a complex behaviour	2	Uses reflective statements: repeats what participants have said
DbC12	Uses Visual tools To assist understanding of what happens in the body with Type 2 diabetes	Y	Y	Y	Behaviour and purpose.	2	Uses Visual tools
DbC13	Will seek to support the group to answer their questions, only providing answers when these are unforthcoming, and as appropriate	Y	Y	N		6	Avoids answering questions Facilitates the group to answer their own questions
DbC14	Refers participants to comments on flipcharts at appropriate points e.g. patient story)	Y	Y	Y	Behaviour but subjective does not define 'appropriate'.	7	Uses participants original comments on flip charts

B. Core Behaviours							
Code	**DOS Educator Behaviour Item**	**Educator behaviour**	**Active**	**Single behaviour**	**Comment**	**Category**	**Potential Revised item**
CB1	Assists participants to share their personal understanding, experience, health beliefs and feelings related to diabetes	N	N	N	Purpose without behaviour	5	Prompts participants to their own thoughts and feelings during the session
CB2	Assists participants to challenge their own attitudes and beliefs as well as those of other participants	N	N	N	Purpose without behaviour 'Assists' is too subjective	5	Prompts participant questioning of personal beliefs
CB3	Assist participants to explore their understanding and beliefs	N	N	N	Purpose without behaviour 'Assists' is too subjective to be coded	5	Prompts participant exploration of understanding Prompts participants exploration of personal beliefs
CB4	Assists participants to accept personal beliefs about their diabetes, without judgement (positive or negative)	N	N	N	Purpose without behaviour – and educator cannot be responsible for	5	Avoids using judgmental statements regarding participant beliefs
CB5	Uses participants words/phrases and analogies when working through the session content	Y	Y	Y	Keep as is	7	
CB6	Assist participants to explore misconceptions and gaps in knowledge	N	N	N	Purpose without behaviour	5	Prompts participant exploration of gaps in knowledge
CB7	Assists participants to scrutinise, ask questions about what is being discussed to enable them to work things out for themselves (either as individuals or as a group)	N	N	N	Purpose without behaviour	5	Prompts participants to explore new concepts
CB8	Facilitates participants to share their stories about positive attempts to change aspects of their lives to help manage their diabetes.	Y	Y	Y	Keep	7	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CB9	Supports individuals to personally explore their challenges in relation to their diabetes and how the programme activities are influencing that.	Y	N	Y	Not active – support can be passive.	6	Prompts personal reflection about the impact of programme activities on personal diabetes self care
CB10	Demonstrates empathy using words or phrases (reflective questioning) that show you have recognised what life is like for that individual (entered the persons world) and/ or recognised their emotions; noticing their unique experience	N	N	N	Very complex item and I think this may be better as a higher level category and then 'indicators' used such as: Acknowledged participant emotional response (positive or	9	(negative) Pursued participant emotional response Ignored participant emotional response Denied participant emotional response (from Byland and Makoul: Examining empathy in medical encounters: an observational study using the Empathetic Communication Coding System
CB11	Provides time for participants personal reflection including the use of silence	Y	Y	Y	But would it be anything else but silence?	8	Provides time for participants personal self reflection
CB12	If people attend but choose not to make changes, that is respected by the Educator	N	N	N	Not a behaviour but an attitude	1	Avoids making judgments about participants decisions regarding future changes
CB13	Uses open discovery questions and reflection to assist participants in developing options for managing barriers	Y	Y	N	Complex and focused on outcome	3	Prompts of barriers to exploration desired changes
CB14	Uses opportunities throughout the sessions to allow the group to 'problem solve' (to find an answer to the question) instead of the Educator being the problem solver	Y	N	N	I think this is the same as CDb13 and CDbc6?	4	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CB15	Refers participants to comments on the flip charts to support reflection and problem solving	Y	Y	Y	Keep but remove purpose:	3	Refers participants to comments on the flip charts
CB16	Facilitates participants to contribute in a way in which they feel comfortable by acknowledging contributions	Y	N	N	Unclear and confusing: educator cannot make participants feel something. Just acknowledging contributions may not	9	Higher level category '*facilitates willing engagement of all participants*' and include a range of behavioural indicators
CB17	Uses the curriculum to support the structure of the sessions whilst adapting it to meet the needs of the group	Y	?N	N	Complex item and requires the observer to be expert in the curriculum. What does	9	
CB18	Educators work as a team to deliver a person centred programme	Y	N	N	Higher level category or 'overall' review item	9	
CB19	Uses time effectively to ensure that the key messages are explored	Y	N	N	Complex and not active This may fit better with CDbc18 (Educators working as a team)	9	Avoids running over time with each session Ensures sufficient time available for Session K (Action planning)
CB20	Appropriate body language, tone of voice and non verbal communication	Y	N	N	What is meant by appropriate? Could body language be a higher level category?	6	Uses eye contact, facial expressions and body posture to support engagement of participants.
CB21	Provides individual support outside of the sessions to those who require it	Y	Y	Y	But may not be seen by observer so not include in final list	7	?
CB22	Uses appropriate humour to support group engagement.	Y	N	N?	Complex as 'appropriate' How important is this? Should it be part of a higher level category of 'group engagement'	9	

C. Curriculum Sample Script (CSS) Additional Behaviours (Session C)							
Code	**Curriculum additional behaviour item**	**Educator behaviour**	**Active**	**Single behaviour**	**Comment**	**Category**	**Potential Revised Item**
CSS(c)1	Collects answers, acknowledge responses and summarise the groups understanding	Y	Y	N		8	Summarises the groups understanding
CSS(c)2	Draw a cell to illustrate, or use magnetic resource.	Y	Y	Y	Too specific: Include under code for uses visual resources	10, 4	
CSS(c)3	Keep prompting the group and guide their thinking until they come up with food	Y	Y	N	2 behaviours in list and duplicated	4	
CSS(c)4	You can now begin to add to the picture/magnetic board you are using to build up the story	Y	Y	N	Too specific: Include under code for uses visual resources	10,4	
CSS(c)5	Try to prompt the group to mention carbohydrate foods such as sugars and starches	Y	Y	Y	Too specific and focused on content. Duplicate and content related.	10,4	
CSS(c)6	In order to manage time it may be helpful to park some of those questions by informing the group about the food activities taking place later in the course.	Y	N	N	Change to '*parks questions'* as a behaviour?	9	
CSS(c)7	Indicate food going into the mouth on the magnetic board or your illustration.	Y	Y	Y	Too specific: Include under code for uses visual resources	10,4	
CSS(c)8	Use the magnetic board, or draw a blood vessel (a tube) with some glucose in it. This is best done in the form of sugar cubes.	Y	Y	Y	Too specific: Include under code for uses visual resources	10,4	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CSS(c)9	Prompt the group into answers such as, people come in who are not supposed to (may disrupt the group, steal things), the room may get cold as the heat is lost (or too hot if air conditioning not working in summer) etc.	Y	Y	N	Too specific – related to use of analogies	10,4	
CSS(c)10	Add a pancreas and some keys in the pancreas, some in the blood vessel and then one sticking into the side of the cell. This cell should have some sugar in it as well.	Y	Y	N	Too specific - Include visual resources	10,4	
CSS(c)11	Using the magnetic board demonstrate the following points and using open questions, facilitate the group to explore the benefits of the incretin hormone actions	Y	Y	N	Too specific - Include under code for *uses visual resources*	10,4	
CSS(c)12	facilitate a discussion to explore what the group know about Type 1 diabetes.	Y	Y	Y	Duplicate	4	
CSS(c)13	If people come up with secondary causes of diabetes e.g. gestational diabetes, note on Causes flip chart and explore at this point, or park until 'causes' are discussed later in this section. If not suggested, then it is not necessary to raise it for discussion	Y	Y	Y	Too specific: include time or focus on needs of Same as CDbc19	10, 4	
CSS(c)14	Use your picture or diagram as a reference.	Y	Y	Y	Too specific - Include under code for uses visual resources	10, 4	
CSS(c)15	Use the magnetic board to demonstrate if you feel this may help the group to work out what happens	Y	Y	Y	Too specific - Include under code for uses visual resources	10, 4	
CSS(c)16	As participants identify correct answers/reason then capture these on the body diagram.	Y	Y	Y	Too specific and use of resources	10, 4	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CSS(c)17	Indicate this by using the diagram of the cell and the rusty locks.	Y	Y	Y	Too specific - Include under code for uses	10, 4	
CSS(c)18	Try to elicit answers from the group. If the information is not forthcoming then the Educator can explain	Y	Y	N	Duplicate and 2 behaviours (elicit information from group and when to provide answer	4	
CSS(c)19	Acknowledge responses.	Y	Y	Y	Duplicate but unclear as to HOW?	4	
CSS(c)20	Listen to and use responses to enable participants to explore that	Y	N	N	Duplicate	4	
CSS(c)21	Encourage people to explore how they would behave and the impact this may have on their long- term health.	Y	Y	N	Appears to be about future impact of options?	3	Prompt participants to review the impact of possible choices on their future health
CSS(c)22	Draw attention to the flip chart with 'Signs & Symptoms' identified in the earlier session. Work through the list of signs and symptoms.	Y	Y	N	Too specific Include in a possible higher level code: '	10, 4	Uses participants quotes on flipcharts as the content'
CSS(c)23	Link this to the 'Signs & Symptoms' flip chart	Y	Y	Y	Too specific Include in a possible higher level code	10,	
CSS(c)24	refer to Patient Story charts if appropriate).	Y	Y	Y	Too specific: Include in a possible higher level code: '*Uses participants quotes on flipcharts as the content'* Include in a possible higher level code: 'Uses	10, 4	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CSS(c)25	Facilitate a discussion about why there may not be any symptoms yet. Refer to the early signs of the development of diabetes appearing up to 10 years before diabetes presents.	Y	Y	N	Too specific and focused on content (check that this is under content list) Same as CDbc6	10, 4	
CSS(c)26	If blurred vision was mentioned explain the short- term effect on vision that may occur around diagnosis if blood glucose levels are high. There is an opportunity to talk about the long-term consequences with eyes in a later section	Y	Y	Y	Too specific and focused on content	10, 2	
CSS(c)27	Refer to Patient Story 'Signs and Symptoms' flip chart - if any points recorded are not signs or symptoms of diabetes, facilitate a discussion about it and ask permission to cross it off the list if it is not a symptom.	Y	Y	N	Appears to be related to how to integrate participant generated information into the session. Include as 'Uses participants quotes on flipcharts as the content'	4	
CSS(c)28	Explain that we often find that people report a wide range of symptoms that they think are part of their diabetes, but that aren't necessarily related.	Y	Y	Y	Too specific and focused on content. But may be considered in relation to *'using unrelated participant information'*?	10, 4	
CSS(c)29	Use responses to enable participants to explore:	Y	Y	Y	Duplicate	4	
CSS(c)30	The Patient Story flip charts 'Treatments' will already have recorded some of the things participants know or have heard about as treatments. Refer to this as a prompt	Y	Y	Y	Too specific 'Uses participants quotes on flipcharts as the content'	10, 4	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CSS(c)31	Use the list to support the group to work out how each point listed on the treatment flip chart affects blood glucose levels.	Y	Y	Y	Too specific 'Uses participants quotes on flipcharts as the content'	10, 4	
CSS(c)32	It may be helpful to use the magnetic pieces to run through each suggestion made by the group to illustrate how it may or may not help improve blood glucose levels.	Y	Y	Y	Too specific but an example of how to use resources: uses visual resources	10, 4	
CSS(c)33	Indicate the rusty locks.	Y	Y	Y	Too specific - uses visual resources	10, 4	
CSS(c)34	Refer to 'Treatments' flip chart and start with the medication participants have mentioned and discuss these first.	Y	Y	Y	Too specific 'Uses participants quotes on flipcharts as the content'	10, 4	
CSS(c)35	Educators may find it useful to use the magnetic board.	Y	Y	Y	Too specific: Include under code for *uses visual resources*	10, 4	
CSS(c)36	If any participants are on newer therapies the following explanation of these may be used. If there is no one on these therapies there is no need to discuss them. Participants may be able to explain to the group how the medication works, or the Educator may explain in simple terms:	Y	Y	N	Too specific and complex (2 behaviours) Include in a possible higher level code: 'Uses participants quotes on flipcharts as the content' and 'patient centred programme' - CDbc18	9, 4	
CSS(c)37	This is an opportunity to summarise the key messages you have just elicited.	Y	Y	Y	Change to 'but I think this seems to oppose the concept of getting the group to reflect?	7	Summarises key messages

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
CSS(c)38	Put up a flip chart with 'Reducing Blood Glucose' at the top. The group have already made suggestions about how to reduce blood glucose levels. Divide the flip chart into two halves down the centre. On one side write Blood Glucose (Day-to-day) on the other side write Insulin Resistance (Long-term).	Y	Y	N	Too specific This is related to preparing for the session	10	
CSS(c)39	Invite participants to run through their suggestions again. As answers are forthcoming ask the group if their suggestion has an immediate day-to-day effect or a long-term effect on blood glucose. If any points are not suggested by the group then facilitate the group to work out all the short-term and long-term effects as follows:	Y	Y	N	Too specific and focused on content. Will be covered by CDbc7	10, 4	
CSS(c)40	The group has already given you their ideas in the Patient Story so refer back to the 'Causes' flipchart.	Y	Y	Y	Too specific 'Uses participants quotes on flipcharts as the content'	10, 4	
CSS(c)41	Weight and shape are certain to be discussed. Ask the group why weight and shape should make someone more likely to get diabetes. Relate this to insulin resistance.	Y	Y	N	Too specific, 2 behavioural tasks and focused on content Will be covered by CDbc7	10, 4	
CSS(c)42	If there are suggestions that are not causes of diabetes, explore with the group what their thoughts are about the suggestion and whether the suggestion should stay on the list.	Y	N	Y	Focused on content but related to dealing with wrong answers. .	2	Prompts group to explore inaccurate answers/responses
CSS(c)43	Review learning (by asking what are your thoughts now about what you may want to change?) by listening to responses.	Y	Y	N	Purpose as well as behaviour. 'prompts participants to reflect on their thoughts about possible changes" ? CDbc9	3	

D. Behaviours identified from DESMOND Manual (DM) Chapters

Analysed and reduced before adding to this table (see Analysis of behaviours from DESMOND manual chapters 2013)

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
DM1	Ensuring individuals are supported in developing their own diabetes management plan	N	N	N	Will be included in Session K items '	8	prompt participants to develop an action plan'
DM2	Ensuring individuals with diabetes are supported in processing and understanding the information provided to them	N	N	N	Could be a higher level 'code' 'Support participants to process and understand new information'	9	
DM3	Ensuring everyone is treated non-judgmentally and with respect, regardless of how they decide to manage their diabetes	N	N	N	Could be a higher level 'code' Educator behaves in a non-judgemental way to all participants and their decisions.	9	
DM4	Ensuring empathy and warmth are demonstrated in all clinical and educational interactions	Y	N	N	Could be a higher level 'code' Educator acts in an empathic and warm manner: include in body language?	9	
DM5	Ensuring people with Type 2 diabetes are given the opportunity to reflect on the possible barriers to their self management	Y	Y	N		2	Prompts participants to reflect on the possible barriers to self management
DM6	Ensuring individuals are supported in developing general self management skills such as goal setting, action planning and problem solving	Y	Y	N	Complex and will be covered by Session F,G &K items (action planning) as well as the problem solving behaviours CDbc7	9, 4	
DM7	Ensuring individuals are supported in developing diabetes-specific self management skills such as self-monitoring	Y	Y	N	Will be focused in Session D – monitoring – duplicate	4	

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
DM8	Ensuring individuals are provided with a forum or space in which to discuss and explore their experiences of being newly diagnosed/living with diabetes	N	Y	N	Overall point of the programme and maybe more about commissioners than educator?	9	
DM9	Ensuring individuals are supported in managing their emotional responses to diabetes, its impact on their life and the impact of its complications	Y	N?	N		8	prompts participants to express and explore their emotional responses'
DM10	To promote active engagement of the individual in the sessions	Y	Y	N	Could be a higher level 'code' 'Ensures active engagement of all participants throughout the	9	
DM11	Encouraging them to think through questions before giving a direct answer	Y	N	Y		8	prompts people to reflect on answers to their own questions' before giving an answer
DM12	Asking them how they feel about what they have achieved	Y	Y	Y	Specific question which may be asked in different ways by educators:	8	Prompts participants to reflect on their achievements
DM13	one of the skills we help people gain is 'how to find out the answers to questions' and 'how to work this out for myself'	Y	Y	N	Make a higher level code: 'supports participants to work things out for themselves'	9	
DM14	Facilitate people to share their stories about positive attempts to change their lives to help their diabetes control	Y	Y	Y	Yes	7	
DM15	Provide time to reflect on and decide 'what am I going to do now as a result of this session	Y	N	Y	change to	8	'prompts participants to talk about what they are going to do as a result of the session'
DM16	The Educator does not lecture or dictate, they use questions (mainly open questions) to elicit the information from the group	Y	N	N	needs refining as too subjective - How to define lecture/dictate? ' Starts to consider 'Proscribed behaviours' Is the opposite to supporting participants to work things out for themselves	9	Avoids lecturing or telling participants about new or correct information'

Code	DOS Educator Behaviour Item	Educator behaviour	Active	Single behaviour	Comment	Category	Potential Revised item
DM17	support inquiry and possibly creativity to work out how their bodies work, what goes wrong in diabetes and what would help correct that	Y	Y	N	Needs to change as complex but is covered by item CDbc7	9, 4	
DM18	Avoiding 'heuristic processing' approaches (I am the expert, I know best)	Y	N	Y	Change to 'and links with CDbc7	8	Avoids telling people what to do'
DM19	you are seeking to use all the information from the participant (dealing with 'wrong' answers)	Y	Y	Y		7	uses all responses to questions to support the group to answer their own question'
DM20	When you nod and smile you encourage someone to talk more	Y	Y	Y		7	nods and smiles at participants'
DM21	Giving eye contact brings someone into a group.	Y	Y	Y	'	7	Uses direct eye contact'
DM22	standing closer to someone who is a little quiet and then moving away slightly will encourage them to talk a little louder	Y	Y	Y		10	
DM23	Using people's names increases rapport	Y	Y	Y		8	Uses participants names'
DM24	Acknowledging sometimes what might be going on in the room e.g. "I think I've lost you there haven't I" "You're looking confused, tired etc"	Y	Y	N	Change to '	8	Educator voices his/her perception of the group' (to support group/individual engagement)
DM25	Agree a signal or sign ahead of time with your fellow Educator, which will indicate you have lost your flow and need some assistance	N	Y	N	Change to 'and include in CDbc18	8, 4	educator uses signals to allow co-educator to know that she/he needs help'
DM26	Not focusing on the needs of one person at the expense of the rest of the group	Y	N	Y		8	Avoids focusing on the needs of one person at the expense of the rest of the group'

Appendix 6 The 105 DESMOND behaviours reduced to 48 behaviours

Original item Code	Revised Item number and descriptor
DbC1 DbC4 DbC7 DbC10	1. Asks open questions (about what participants know about the content area under discussion)
DbC2 DbC5 DbC8 DbC11	2. Uses reflective statements: repeats what participants have said
DbC3 DbC6 DbC9 DbC12 CSS(c)2 CSS(c)4 CSS(c)7 CSS(c)8 CSS(c)10 CSS(c)11 CSS(c)14 CSS(c)15 CSS(c)16 CSS(c)17 CSS(c)32 CSS(c)33 CSS(c)35	3. Uses Visual tools/resources
DbC13 DbC14	4. Avoids answering questions
DbC14 DbC14	5. Facilitates the group to answer their own questions
DbC1	6. Prompts participants to talk about their own thoughts and feelings regarding diabetes during the session

DbC2	7. Prompts participant questioning of personal beliefs
DbC3	8. Prompts participant exploration of understanding
DbC3	9. Prompts participants exploration of personal beliefs
DbC4	10. Avoids using judgmental statements regarding participant beliefs
DbC5	11. Uses participants words/phrases and analogies when working through the session content

DbC6 DbC14 CSS(c)3 CSS(c)5 CSS(c)12 CSS(c)20 CSS(c)25 CSS(c)29	12. Prompts participant exploration of gaps in knowledge
DbC7 CSS(c)18 CSS(c)36 CSS(c)39 CSS(c)41 CSS(c)42 DM17	13. Prompts participants to explore new concepts
DbC8	14. Facilitates participants to share their stories about positive attempts to change aspects of their lives to help manage their diabetes
DbC9 CSS(c)43	15. Prompts personal reflection about the impact of programme activities on personal diabetes self care
DbC10	16. Acknowledged participant emotional responses (positive or negative)
DbC10	17. Pursued participant emotional response
DbC10	18. Ignored participant emotional response
DbC10	19. Denied participant emotional response
DbC11	20. Provides time for participants personal self reflection
DbC12	21. Avoids making judgments about participants decisions regarding future changes
DbC13	22. Prompts exploration of barriers to desired changes
DbC15	23. Refers participants to comments on the flip charts
DbC16	24 Facilitates willing engagement of all participants
DbC19 CSS(c)6 CSS(c)13	25. Avoids running over time with each session (parks questions/does not discuss items that are not brought up by participants and not on content list
DbC20	26. Uses eye contact, facial expressions and body posture to support engagement of participants.
CSS(c)1	27. Summarises the groups understanding
CSS(c)9	28. Uses analogies
CSS(c)21	29. Prompt participants to review the impact of possible choices on their future health

CSS(c)22 CSS(c)23 CSS(c)24 CSS(c)27 CSS(c)30 CSS(c)31 CSS(c)34 CSS(c)36 CSS(c)40	30. Uses participants quotes on flipcharts as the content'
CSS(c)37	31. Summarises key messages
CSS(c)42	32. Prompts group to explore inaccurate answers/responses.
DM5	33. Prompts participants to reflect on the possible barriers to self management
DM9	34. Prompts participants to express and explore their emotional responses
DM11	35. Prompts people to reflect on answers to their own questions before giving an answer
DM12	36. Prompts participants to reflect on their achievements
DM13	37. Prompts participants to work things out for themselves
DM14	38. Facilitate people to share their stories about positive attempts to change their lives to help their diabetes control
DM15	39. Prompts participants to talk about what they are going to do as a result of the session
DM16	40. Avoids lecturing or telling participants about new or correct information
DM18	41. Avoids telling people what to do/what to think
DM19	42. Uses all responses to questions to support the group to answer their own question
DM21	43. Nods and smiles at participants
DM22	44. Uses direct eye contact
DM23	45. Uses participants names
DM24	46. Voices their perception of the group
DM25	47. Uses visible signals to allow co-educator to know that she/he needs help
DM26	48. Avoids focusing on the needs of one person at the expense of the rest of the group

Appendix 7

SORT CARD TASK 1 RESULTS

Code	Item	Label applied by Group 1	Label Applied by Group 2
1	Asks open questions (about what participants know about the content area under discussion)	Interpersonal and Facilitation Skills	Non Didactic Delivery
2	Uses reflective statements: repeats what participants have said	Time to Think	Empathic Delivery
3	Uses Visual tools/resources	Interpersonal and Facilitation Skills	Functional Delivery
4	Avoids answering questions	Ask and Answer own questions	Non Didactic Delivery
5	Facilitates the group to answer their own questions	Ask and Answer own questions	Non Didactic Delivery
6	Uses participants original comments on flipcharts in discussion	Uses flipcharts to record	Reflecting back content from the group
7	Prompts participants to discuss their own thoughts and feelings about diabetes during the session	Prompting discussion	Elicits thoughts, feelings and beliefs
8	Prompts participant questioning of personal beliefs and those held by others	Prompting discussion	Elicits thoughts, feelings and beliefs
9	Prompts participant exploration of understanding of issues discussed	Prompting discussion	Checking Understanding
10	Prompts participants to discuss their personal beliefs	Prompting discussion	Elicits thoughts, feelings and beliefs
11	Avoids using judgmental statements regarding participant beliefs	Dealing with issues of factuality/facticity	Non judgmental approach

12	Uses participants words/phrases and analogies when working through the session content	Making it real	Reflecting back content from the group
13	Prompts participants to explore new concepts	Dealing with issues of factuality/facticity	Checking understanding
14	Facilitates participants to share their stories about positive attempts to change aspects of their lives to help manage their diabetes	Prompting discussion	Elicits thoughts, feelings and beliefs
15	Prompts participants to discuss their thoughts about possible changes	Prompting discussion	Planning and goal setting
16	Acknowledges participants emotional responses (positive or negative	Responding to emotions	Responding to emotions
17	Pursued participants emotional response	Responding to emotion	Responding to emotion
18	Ignored participants emotional response	Responding to emotion	Responding to emotion
19	Denied participants emotional response	Responding to emotion	Responding to emotion
20	Provides time for participants personal self reflection	Responding to emotion	Responding to emotion
21	Avoids making judgments about participants decisions regarding future changes	Dealing with issues of factuality/facticity	Non Judgmental approach
22	Prompts exploration of barriers to desired changes	Problem Solving	Planning and goal setting
23	Refers participants to comments on the flip chart	Uses flipcharts to record	Reflecting back content from the group
24	Facilitates willing engagement of all participants	Responding to emotion	Group dynamics

25	Avoids running over time with each session (parks questions/does not discuss items that are not brought up by participants and not on content list)	Interpersonal and facilitation skills	Functional delivery
26	Uses eye contact, facial expressions and body posture to support engagement of participants	Interpersonal and facilitation skills	Empathic delivery
27	Summarises the groups understanding	Interpersonal and facilitation skills: sub category: Reflecting back	Reflecting back content from the group
28	Uses analogies	Making it real	Reflecting back content from the group
29	Prompt participants to review the impact of possible choices on their future health	Focus on what comes out of learning for practice: moving from discussion to action	Planning and Goal setting
30	Uses participants quotes on flipcharts as the content'	Uses flipcharts to record	Reflecting back content from the group
31	Summarises key messages	Interpersonal and facilitation skills: sub category: Reflecting back	Reflecting back content from the group
32	Prompts group to explore inaccurate answers/responses.	Dealing with issues of factuality/facticity	Checking understanding
33	Prompts participants to reflect on the possible barriers to self management	Focus on what comes out of learning for practice: moving from discussion to action	Planning and Goal setting
34	Prompts participants to express and explore their emotional responses	Responding to emotions	Elicit thoughts, feelings and beliefs
35	Prompts people to reflect on answers to their own questions before	Prompting discussion	Non didactic delivery

	giving an answer		
36	Prompts participants to reflect on their achievements	Focus on what comes out of learning for practice: moving from discussion to action	Reflecting back content from the group
37	Prompts participants to work things out for themselves	Problem solving	Planning and goal setting
38	Facilitate people to share their stories about positive attempts to change their lives to help their diabetes control	Prompting discussion	(not allocated a group)
39	Prompts participants to talk about what they are going to do as a result of the session	Focus on what comes out of learning for practice: moving from discussion to action	Planning and goal setting
40	Avoids lecturing or telling participants about new or correct information	Dealing with issues of factuality/facticity	Non didactic delivery
41	Avoids telling people what to do/what to think	Dealing with issues of factuality/facticity	Non didactic delivery
42	Uses all responses to questions to support the group to answer their own question	Dealing with issues of factuality/facticity	Non judgmental approach
43	Nods and smiles at participants	Interpersonal and facilitation skills	Empathic delivery
44	Uses direct eye contact	Interpersonal and facilitation skills	Empathic delivery
45	Uses participants names	Interpersonal and facilitation skills	Empathic delivery
46	Voices their perception of the group	Responding to emotions	Group dynamics
47	Uses visible signals to allow co-educator to know that she/he needs help	Interpersonal and facilitation skills	Functional delivery

48	Avoids focusing on the needs of one person at the expense of the rest of the group	Responding to emotions	Group dynamics

Appendix 8 Sort Card Task 2 – the final 46 behaviours and 5 labels

Label	Items (with original numbers)
Eliciting and responding to emotions and feelings	6 Prompts participants to talk about their own thoughts and feelings diabetes during the session 31 Prompts participants to express and explore their emotional responses
	16 Acknowledged participant emotional responses (positive or negative)
	17 Pursued participant emotional response
	18 Ignored participant emotional response
	19 Denied participant emotional response
Planning and Goal Setting	15 Prompts personal reflection about the impact of programme activities on personal diabetes self care
	14 and 38. Facilitates participants to share their stories about positive attempts to change aspects of their lives to help manage their diabetes No 36 Prompts participants to reflect on their achievements:
	22 Prompts exploration of barriers to desired changes
	29 Prompt participants to review the impact of possible choices on their future health
	33 Prompts participants to reflect on the possible barriers to self management
	39 Prompts participants to talk about what they are going to do as a result of the session
	Prompts the participants to reflect on their goals/plans
Facilitates non - judgemental engagement of all participants	3 Uses Visual tools/resources
	10 Avoids using judgmental statements regarding participant beliefs
	21 Avoids making judgments about participants decisions regarding future changes
	26 Uses eye contact, facial expressions and body posture to support engagement of participants.
	28 Uses analogies
	43 Nods and smiles at participants
	44 Uses direct eye contact
	45 Uses participants names
	Accepts right and wrong answers

Overall Group Management	20 Provides time for participants personal self reflection
	25 Avoids running over time with each session (parks questions/does not discuss items that are not brought up by participants and not on content list)
	46 Educator notices tone/dynamics of group, acknowledges these and uses it to manage the group*
	48 Avoids focusing on the needs of one person at the expense of the rest of the group
	Uses visible signals to allow co-educator to know that she/he needs help
Facilitates reflective learning	2 Uses reflective statements: repeats what participants have said
	4 Avoids answering questions
	5 Facilitates the group to answer their own questions
	7 Prompts participant questioning of personal beliefs
	9 Prompts participants exploration of personal beliefs
	11 Uses participants words/phrases and analogies when working through the session content
	12 Prompts participant exploration of gaps in knowledge 1. Asks open questions (about what participants know about the content area under discussion)
	13 Prompts participants to explore new concepts
	27 Summarises the groups understanding
	30 Uses participants quotes on flipcharts as the content'
	23 Refers participants to comments on the flip charts
	32 Prompts group to explore inaccurate answers/responses.
	40 Avoids lecturing or telling participants about new or correct information
	41 Avoids telling people what to do/what to think
	42 Uses all responses to questions to support the group to answer their own question
	31 Summarises key messages
	8 Prompts participant exploration of understanding*
	35 Prompts people to reflect on answers to their own questions before giving an answer* Educator gives answer to question without allowing group discussion
	Educator prompts group to summarise
	Educator prompts group to summarise the groups understanding
***reworded**	

APPENDIX 9 DRAFT revised DESMOND assessment tool (v1)

QD Study Coding Tool Pilot Revised Tool

A. Coder Name	B. Date of Coding:	C. Duration of Session Video:
D. Time started coding:	E. Time Completed coding	F: Total time used for this session of coding
Issues noted on recording (eg. Technical)		

Additional Comments: (eg. Educator Behaviours that are not included and should be; critical incidents that you don't know how to code)

	Issue/Concern	Timing on DVD

Facilitates non- judgemental engagement of all participants							
	Positive behaviours indicate with √	1	2	3	4	5	'opposite' items indicate with X
1	Uses open body language to support engagement of participants (e.g. Nods and smiles at participants, Uses eye contact, Uses all participants names)						Tends to use closed body language (e.g. Turns back on participants after asking them a question, uses one participants name)
2	Uses language that supports an 'empowering' approach						Behaves in a paternalistic manner (e.g. says well-done when someone gets the 'right' answer, but ignores/corrects a 'wrong' answer)
3	Uses non- judgmental statements regarding participant beliefs /actions and thoughts						Tells people they are wrong/incorrect in what they believe/think
4	Seeks answers from a number of participants before discussing further.						Accepts the first right answer before moving on.

Eliciting and Responding to emotions/feelings							
5	Prompts participants to express and explore their feelings about diabetes during the session						Avoids actively engaging participants in emotional discussion
6	Prompts exploration of participant emotional response						Retreats from/ignores participant emotional response
7	Acknowledged participant emotional responses (positive or negative)						Denied participant emotional response

Managing Questions from the Group							
8	Encourages the group to discuss/answer information- seeking questions generated by the group						Tends to answer all questions
9	Parks questions that arise that will be developed in another session						
10	Uses all (right and wrong answers) responses to questions to support the group to answer their own questions						Ignores wrong answers/tells participants they are wrong/only uses ‘correct’ responses

11	Provides 'up to date' information only after exploring the groups knowledge						
12	Manages the participant who keeps asking questions						

Facilitating Reflective Learning							
13	Uses own analogies						Uses minimal visual tools and resource to support participants questioning
14	Uses Visual tools and resources to support participants questioning/answering/exploration						Does not use analogies
15	Uses/Refers to participants' original comments/quotes on flipcharts in discussion						Does not refer to flip charts thought session
16	Uses reflective statements: repeats what participants have said						Avoids using participants' words to support reflection. Tends to interpret the words used by participants
17	Uses participants words/phrases and analogies when working through the session content						Educator uses his or her own words and analogies. No sign of facilitating people to explore their own.

18	Facilitates the group to answer their own questions						Educator gives answer to question without allowing group discussion
19	Prompts participant to **explore** misconceptions and gaps in **knowledge**/Prompts participants to explore their own thoughts about the content area under discussion /Prompts group to discuss inaccurate answers/responses						Tends to provide new/correct information using lecturing style /Ignores potentially inaccurate answers
20	Prompts group reflection and understanding at regular points						Uses technical language without checking the groups understanding
21	Prompts participant **discussion and questioning** of **personal beliefs** and those held by others						Avoids discussion of beliefs within the group
22	Prompts all participants to ask questions about issues discussed						Rarely invites participants to ask questions
23	Summarises key messages **elicited from group**						Educator tends to summarise key messages
24	Prompts group to summarise the their own (group) understanding						Educator tends to summarise what she/he thinks the groups understanding (without checking)

***Behavioural Change,* Planning and Goal Setting**							
25	Acknowledges when participants decide not to make any future changes to self care behaviours or beliefs						Expects participants to make necessary changes.
26	Prompts participants to discuss their thoughts about possible changes to self management						Avoids generating discussion about possible changes.
26	Prompts participants to review the impact of possible choices on their future health						Avoids generating discussion about range of options/impact
28	Prompts participants to talk about what they are going to do as a result of the session						Rarely asks participant what they are going to do as a result of the session
29	Prompts the individual or group to problem solve possible barriers to **desired changes**						Discussion of 'problem solving' barriers to their plan tends to be focused on superficial thoughts (eg. Time)
30	Prompts the participants to problem solve possible barriers **to self management**						
31	Prompts the participants to reflect on their goals/plans						Avoids discussion regarding the goals/plans
32	Facilitates people to share their stories about positive attempts to manage their diabetes						Does not actively ask people to share their stories about positive attempts. The participants not the educator raise any

							such stories.

Overall Group Management							
33	Provides time for participants personal reflection in response to question						Tends to ask questions but move on to next plan without allowing silence for reflection
34	Manages time within session (parks questions/does not discuss items that are not brought up by participants and not on content list, explains that questions will be covered in other sessions)						
35	Educator notices tone/dynamics within the group, acknowledges these and uses it to manage the group						Tends to ignore issues within the group.
36	Prompts engagement of all participants in the group						Focuses on the needs of one person at the expense of the rest of the group Tends to allow 1/2 participants to dominate the engagement of the group. May avoid seeking engagement from quieter members of the group.
37	Uses co-educator to support delivery of sessions						No involvement of co educator within session observed.

Appendix 10

The DESMOND STUDY
Revised Assessment TOOL
GUIDANCE MANUAL

Sue Cradock

January 2014

CONTENTS Page

A Manual for Coders for the EDUCATOR BEHAVIOUR CODING TOOL

This manual provides detailed descriptions of each of the numbered items to be coded within the DESMOND educator behaviour coding tool and **must be used to help decide how to code each item.**

The manual is 'work in progress' and will be updated to support the improvement of the inter-rater agreement of the tool. As such, each coder is asked to review the document at each time of coding to remind themselves as to the detail of the item.

The DESMOND Educator behaviour coding tool

The DESMOND Educator behaviour coding tool is being developed to support assessing the delivery of the DESMOND self-management programme as part of research into the validity of the current assessment tools.

It contains 5 'global' categories of programme delivery which. Each of the global categories contain a subset of individual specific items that have been derived from the current DESMOND assessment tools. Each of these items describe a discreet behaviour to be coded when observed.

Where appropriate, an 'opposite' item (labelled as NON DESMOND) has been provided.

Additional spaces have been provided on the coding tool for coders to identify significant behaviours within the delivery but have not been included in the current coding tool.

It is designed to be used for any of the specific sessions within the DESMOND programme at this stage.

It does NOT include specific content items at this stage. This is partly as a requirement of this work is to develop a generic coding tool.

Observation Procedure:

Watch the whole session of video recording

If you prefer to break the observation session down then observe for 10' and review coding items – making notes in pencil to assist you in your final decision. This may help you code items that may only be observed once or twice during the delivery.

Review all the items in the coding tool and place a tick within the relevant box of the behavioural item.

If the DESMOND behaviour for the item is **most commonly** seen then the 'tick' is entered into the left hand column (tends to left).

If the NON DESMOND behaviour is **most commonly** seen, then the 'tick' is entered into the right hand column (tends to right).

When placing your tick, you are coding for the behaviour that is **MOST COMMONLY** seen during the viewing. For example: the educator may only once prompt the group to discuss/answer a question, but is seen many times to answer any questions from the group: this will be coded as the latter. Avoid ticking just because you have seen one of the examples. On its own the example may not represent the 'whole' of the item.

If you have concerns/questions/additions to the guidance, then please add your thoughts and send them back to me.

GROUP 1: 5 items

Facilitates Non Judgemental engagement of all participants

These items are designed to capture aspects of the delivery that identify the ability of the educator to engage all participants within the group and avoid using JUDGEMENT with participant's responses.

Judgement is often categorised in terms of 'negative' judgement (saying no to incorrect answers), but this item includes 'positive' judgement: the affirming of correct answers, the saying 'well done' to someone who talks about losing weight.

Item 1: Body Language

DESMOND Indicator (1D): THE EDUCATOR USES A RANGE OF OPEN BODY LANGUAGE TO SUPPORT ENGAGEMENT OF PARTICIPANTS

Code this item if you see more of the open body language examples below:

- Nods and smiles at participants,
- Uses direct eye contact WITH THE WHOLE GROUP
- Maintains direct eye contact with single participants when supporting them to explore their own thoughts/questions
- Moves around the room to look at all participants
- Maintains open stance for the whole of the session.

NON DESMOND Indicator (1ND): THE EDUCATOR TENDS TO USE MORE CLOSED BODY LANGUAGE BEHAVIOURS

Code this item if you see more of the closed body language examples below

- Turns back on participants after asking them a question
- Avoids direct eye contact
- Uses folded arms
- Uses/ focuses on manual/prompt cards after asking participants a question
- Focuses more on the board/flipchart than the participants

Item 2: Non Judgemental Responses

DESMOND indicator (2D): THE EDUCATOR USES NON- JUDGMENTAL STATEMENTS REGARDING PARTICIPANT VERBAL UTTERANCES

A non-judgemental approach is likely to include repeating the words of the participant (to demonstrate that they have noticed) and then asking a question depending on the context (e.g.…and you believe that your diabetes is caused by falling over last year….have I understood that correctly? OR e.g.….when you say that you are keen to keep active, what makes you say that?)

Demonstrates unconditional positive regard to whatever the participants say

Avoids the use of phrases such as 'well done', 'oh dear'; 'that's right; 'no that's not right'

NON DESMOND indicator (2ND): THE EDUCATOR USES JUDGEMENTAL STATEMENTS IN RESPONSE TO PARTICIPANTS VERBAL UTTERANCES

Tends to use phrases like 'well done', 'oh dear'; 'that's right'

The educator is telling participants the right way to behave or that they are wrong in what they think.

This may be direct (you shouldn't do that; no, that is wrong) or indirect (we are not saying you cannot have potatoes) which may include the use of 'leading questions' – (so do others think that fasting is the best idea to lose weight?')

Tone of voice may appear patronising 'well done – see, you have got all the answers!"

Item 3: Generating Answers from participants

DESMOND indicator (3D): THE EDUCATOR SEEKS ANSWERS FROM A NUMBER OF PARTICIPANTS BEFORE DISCUSSING FURTHER, INCLUDING RIGHT AND WRONG ANSWERS.

Code this item if the educator seeks more than one answer from the group. When a member of the group answers a question, the educator asks the rest of the group how they would respond to the question, and seeks/takes answers from a number of participants before further discussion

The Educator collects a range of answers before moving on to explain what he /she understands is the correct answer.

Is clearly trying to see what the majority of the group participants think about the aspect of the discussion

NON DESMOND indicator (3ND): THE EDUCATOR ACCEPTS THE FIRST (RIGHT) ANSWER AND/OR IMMEDIATELY PROVIDES CORRECT OR UP TO DATE INFORMATION

Code this item if you see:

After the educator has asked a question, the educator tends to accept the first answer from one participant and agrees that this is the right answer.

OR takes the first answer and immediately corrects the participant/gives the 'correct' answer.

Item 4: Seeking clarification of participants contribution

<u>DESMOND Indicator (4D):</u> THE EDUCATOR SEEKS CLARIFICATION OF PARTICIPANTS CONTRIBUTION

Code this item if the educator is observed regularly to check that he/she understands what the participant is trying to say.

NON-DESMOND indicator (4ND): THE EDUCATOR RARELY SEEKS CLARIFICATION OF PARTICIPANTS CONTRIBUTION

Code this item if the educator avoids checking out his/her understanding of the contributions by participants. The educator will be observed to make assumptions about the meaning and may actually use words to describe what he/she thinks they have heard, and the observer considers this to be an alternative meaning.

Item 5: Provision of Specific Health Messages

DESMOND Indicator (5D): THE EDUCATOR AVOIDS GIVING GENERAL HEALTHY EATING MESSAGES

Code this item if the educator avoids giving general messages regarding healthy lifestyle and focuses on the messages within the curriculum. The educator is more likely to help participants reflect on the meaning of key messages in relation to their risk factors

NON-DESMOND Indicator (5ND): THE EDUCATOR PROVIDES GENERAL HEALTHY EATING MESSAGES

Code this if the educator tends to add in 'general' messages about health. For example: 'you know it is important to eat healthily', 'you should avoid eating lots of xxxx'; 'it is important to make sure you eat xxxx'.

ELICITING AND RESPONDING TO EMOTIONS/FEELINGS (EMPATHETIC RESPONDING)

This section identifies the educator's skill in identifying/managing emotional talk within the participants. These items are attempting to describe the DESMOND behaviour described as Empathy in the original tool.

Item 6: Eliciting Emotions

DESMOND indicator (6D): PROMPTS PARTICIPANTS TO EXPRESS AND EXPLORE THEIR FEELINGS ABOUT DIABETES DURING THE SESSION

Uses phrases like ‘how do feel when you think about that?’ or ‘how are you feeling now we have discussed that?’ at least once or twice during each session.

NON DESMOND indicator (6ND): AVOIDS ACTIVELY ENGAGING PARTICIPANTS IN EMOTIONAL DISCUSSION

The educator never asks the participants how they are feeling within the section

DESMOND indicator (7D): ACKNOWLEDGES AND/OR PROMPTS EXPLORATION OF PARTICIPANT EMOTIONAL RESPONSE

Any emotional (feeling) word/phrase from participant is noted by the educator, who may then encourage the participant to discuss further. When you say you feel stuck, what is are stuck with/what would help you now? The educator may notice and acknowledge words of emotion used by participant but not explore further. (e.g. you say that you feel angry, what do others feel..)

NON DESMOND indicator (7ND): RETREATS FROM/IGNORES /DENIED PARTICIPANT EMOTIONAL RESPONSE

Any participant words of emotion (e.g. this hurts/I find this frustrating) are not heard/ ignored by the educator.

The educator actually tells the participant that they don't need to/shouldn't feel what they are feeling. (e.g. 'you don't need to feel scared of insulin' or 'you are doing so well, you shouldn't feel upset'.

Code 'NOT SEEN' if there are no emotional cues from participants for the educator to pick up on.

Appendix 11

TRANSCRIBED EDUCATOR DELIVERY FOR SESSION C – REVIEWED BY SC FOR ADDITIONAL ITEMS NOT INCLUDED IN REVISED DESMOND ASSESSMENT TOOL.

The EDUCATOR talk is **BOLD**

Dialogue	Description of behaviour and related item within current tool	? Included
What we're going to do now is what diabetes is, how it occurs, etc okay? So 1st of all um can you tell me what do you think diabetes is	Briefly outlines purpose of session Closed question	Yes
Too much insulin pancreas isn't functioning as it should be		
Right yep	Affirmed correct answer	Yes
And so it's producing too much attention		
And what you mean what we talking about when you were talking about blood tests what did that show	Open question to relate to participants previous words	Yes
That blood glucose was too high		
It's the blood sugar yep	Affirmed correct answer	Yes
That with type II diabetes the insulin doesn't break down the sugars as well as it should		
Yes so you get so we end up getting too much sugar going round in the blood for the purpose of today when we're talking about sugar that is in the blood will refer to it as glucose okay so that's exactly right when we've got diabetes what happens is we know is that we've got too much of the sugar going round in the blood okay and will build on that further so let's take a step back 1st were going to have a look at what normally happens when we don't have diabetes as in with the digestive system okay where do we get our glucose from	Affirmed correct answer Provided (?new) information without exploring with group	Yes

From food		
Absolutely what kind of food in particular	Affirmed correct answer Asks open question to explore further	Yes
Carbohydrates		
Carbohydrates right and and why do we why do we actually need glucose from our foods	Affirmed correct answer Asks open question to explore further	Yes
For energy		
For energy absolutely because it gives us energy so if we what kind of foods are we going to give Desmond then what kind of carbohydrates would we normally have	Affirmed correct answer Asked open question to explore further	Yes
Pasta		
Yet we can have pasta I'll give him some potatoes I haven't got a pasta one okay	Affirmed correct answer Used visual resources Changed the participants words without checking	Yes
Should of said potatoes		
That's okay um bread cake all these type of things a sandwich here we often have don't we if we are feeling feeling hungry and we need some energy so in a normal person who doesn't have diabetes we eat the food where does it go to	Explanation? Asked open question to explore further	Yes
In the stomach		

Appendix 12

REVIEW OF NON ASSESSMENT TOOL BEHAVIOURS BY SC AND HE

HE Open coding educator behaviour – first attempt and **SC's mapping onto current tool**

Explains session content – **32**

Refers to content in subsequent sessions - **?32**

Mentions what will be covered later -**?32**

Asks open question to group / individual participant

Asks for ideas/answers to a question **-3**

Asks them to explain something – **4**

Asks them to summarise content/learning/understanding – **16**

Asks them how easy/difficult task was – not in tool

Asks clarification/probing question – **12/4?**

Prompts participant/group for further response/explanation - **?12/14**

Acknowledges participant's response – not in tool

Confirms 'right' answer – not in tool but related to 3

Explains key terms – not in tool

Gives information – not in tool - ?related to 3

Explains information – not in tool (?highlights a need for a 'provision of information' label?

Gives advice – not in tool but related to 11/18

Explains task – not in tool

Uses analogy/metaphor to explain something - **8**

Uses visual resource(s) – **9**

Uses group's answers to add to visual resource -**11**

Looks around (makes eye contact with) whole group – 1 but more specific (**is in examples for 1)**

Answers participant's clarification question **?11**

Answers participant's question **11**

Praises group for knowledge/learning **2**

Asks closed question to check whether group has understood- there are 2 items here but the latter is linked with **12/16?**

Gives clues to help group get right answer - **?12**

Uses participants' names – this is not a specific item but is used as a strategy example **for item 29**

Summarises discussion **16**

Asks group if they have any questions **?12/14**

Refer (points) to content on flipchart **10**

Refers to content in earlier session not in tool **?9/10**

Returns to earlier problems/questions listed on flipchart paper to work through answers **11**

Responds to participant's questions by turning question back to group **11**

Writes/draws on flipchart **9**

Writes participants' responses on flipchart **9**

Uses humour not in tool (although was in original DESMOND tool but hard to code (what is humour? What do we mean by 'use'?)

Distributes (visual) resources to group Not in tool

Invites participants to undertake task Not in tool

Encourages group – not sure? What did they do to demonstrate this?

Talks to other educator **- 30**

Looks at notes not in tool

Sorts out resources – not in tool

Uses 'real life' resources – not in tool

Asks group questions with X options (e.g. which of these…) **-12**

Demonstrates (how to read fat content) not in tool

Gives their opinion - ?not in tool

APPENDIX 13

QD Study Draft Revised DESMOND assessment tool

A. Coder Name	B. Date of Coding:	D. Duration of Session Video:
	C. Label on DVD	
E. Time started coding:	F. Time Completed coding	G: Total time used for this session of coding
Issues noted on recording (eg. Technical)		

Additional Comments: (eg. Educator Behaviours that are not included and should be; critical incidents that you don't know how to code)	Timing on DVD

Instructions for Use of Coding Tool

Watch the session video recording in 10 minute sections or as a whole.
Using the 10 mins reviewing will allow you to review the behaviours in the coding tool at regular intervals and write examples to assist you with making the final decision at the end of the session you are coding.
Review all the items in the coding tool and place a tick within the relevant box of the behavioural item.
If the DESMOND behaviour for the item is **most commonly** seen then the 'tick' is entered into the left hand column (tends to left).
If the NON DESMOND behaviour is **most commonly** seen, then the 'tick' is entered into the right hand column (tends to right).
If neither behaviour is seen then enter the tick in the 'NOT SEEN' (if present) OR write NOT SEEN
When placing your tick, you are coding for the behaviour that is **MOST COMMONLY** seen during the **full** session you are reviewing.
For example: the educator may only once prompt the group to discuss/answer a question, but is seen many times to answer any questions from the group: this will be

coded as the latter. Avoid ticking just because you have seen one of the examples. On its own the example may not represent the 'whole' of the item

Each set of items is grouped into one of 6 sections which is labelled with an overall title:

Facilitates Non Judgemental engagement of participants
Eliciting and Responding to emotions/feelings
Facilitating Reflective Learning
Behavioural change, planning and Goal Setting
Overall group management
Additional Items

Entered into database (SC): Site/Educator ID (SC to add)

Facilitates non- judgemental engagement of all participants				
	DESMOND behaviours	Tends to LEFT	Tends to RIGHT	Non DESMOND behaviours
1	The educator uses a range of open body language techniques to support engagement of participants			The educator tends to use more closed body language behaviours
2	The educator uses non-judgmental statements in response to participants verbal utterances			The educator uses judgemental statements in response to participants verbal utterances
3	The educator seeks answers (including right and wrong answers) from a number of participants before discussing further			The educator accepts first right answer and/or immediately provides correct or up to date information
4	The educator seeks clarification of participants contribution			The educator rarely seeks clarification of participants contribution
5	The educator avoids giving general healthy eating messages			The educator provides general healthy eating messages

Eliciting and Responding to emotions/feelings (Empathetic Responding)					
	DESMOND behaviours	Tends to LEFT	Tends to RIGHT	Non DESMOND behaviours	
6	The educator prompts participants to express and explore their feelings about diabetes during the session			The educator avoids actively engaging participants in emotional discussion	
7	The educator acknowledges and/or prompts exploration of participant emotional response			The educator retreats from/ignores/denies participant emotional response	Emotional Response not seen

Facilitates Reflective Learning				
	DESMOND behaviours	Tends to LEFT	Tends to RIGHT	Non DESMOND behaviours
8	The educator uses analogies			The educator avoids the use of analogies
9	The educator uses Visual tools and resources			The educator uses minimal visual tools and resources
10	The educator uses and refers to participants' comments/quotes			The educator uses his or her own words when working through session content
11	The educator prompts the group to discuss/answer their own questions			The educator immediately answers most questions asked by the group
12	The educator prompts participant to explore misconceptions and gaps in knowledge and their own thoughts about the content area under discussion			The educator immediately provides correct information to fill apparent gaps in knowledge.
13	The educator notices and prompts participant discussion of personal HEALTH beliefs (related to cause, consequences, treatment, signs and symptoms of diabetes)			The educator avoids discussion of HEALTH beliefs within the group
14	The educator prompts all participants to ask questions about issues discussed			The educator rarely invites all participants to ask questions
15	The educator prompts group to summarise their key messages from the session.			The educator tends to summarise key messages

16	The educator prompts group to summarise their own (group) understanding of the content under discussion.			The educator tends to summarise what she/he thinks the groups understanding (without checking)
17	The educator prompts participant 'self-talk' about how the key messages from the session applies to them.			The educator does not ask participants to reflect on how the messages apply to them

Behavioural Change, Planning and Goal Setting				
	DESMOND behaviours	Tends to LEFT	Tends to RIGHT	Non DESMOND behaviours
18	The educator acknowledges when participants decide not to make any future changes to self-care behaviours or beliefs			The educator appears to expect participants to make necessary changes. This may be implicitly or explicitly expressed.
19	The educator prompts participants to discuss their thoughts about possible changes to self-management			The educator avoids generating discussion about possible changes.
20	The educator prompts participants to review the impact of possible choices on their future health			The educator avoids generating discussion about range of options/impact OR only prompts a single participant to do this
21	The educator prompts participants to talk about what they are going to do as a result of the session			The educator does not ask participants to talk about what they are going to do as a result of the session (or only discusses this with one participant)
22	The educator prompts the individual or group to problem solve possible barriers to change (e.g their desired changes or possible barriers to self-management)			The educator avoids active problem solving support
23	The educator prompts the participants to reflect on their goals/plans			The educator avoids reflective discussion regarding the goals/plans

24	The educator facilitates people to share their stories about positive attempts to manage their diabetes			The educator avoids the use of participant stories of positive success.	
25	The educator supports participants to plot their results on the health profile/complete their action plan			The educator provides little support to assist participants with the completion of their health profile/action plan.	
26	The educator prompts reflection of changes already made (F2 delivery only)			The educator does not prompt reflection of changes made	Not coded as not F2

Overall Group Management				
	DESMOND behaviours	Tends to LEFT	Tends to RIGHT	Non DESMOND behaviours
27	The educator uses strategies to manages time within session			The educator avoids using strategies to assist with managing time
28	The educator notices tone/dynamics within the group, acknowledges these and uses them to manage the group			The educator tends to ignore issues within the group. No issues noted in the group
29	The educator prompts engagement of quieter participants in the group			The educator avoids seeking engagement of quieter members of the group
30	The educator uses co-educator to support delivery of sessions			The educator appears to work alone despite opportunities that may be assisted by co - educator
31	The educator manages group to provide time and space to complete tasks			The educator avoids managing group to allow time and space to complete tasks
32	The educator provides overviews of the sessions/day			The educator does not provide overviews of the sessions/day
33	The educator outlines the style of the sessions *(Code only for session A)*			The educator does not outline the style of the sessions

Additional Items (NOT IN DESMOND QD TOOLS)				
	Possible DESMOND Item			Possible NON-DESMOND Item
34	The educator only provides new information after group discussion/explorations	Tends to LEFT	Tends to RIGHT	The educator provides new information with little exploration within the group
35	The educator explains/discusses key terms (eg: glucose, HbAic)	Tends to LEFT	Tends to RIGHT	The educator avoids discussion of meanings of new terms
36	The educator engages participants using rapport building skills	Tends to LEFT	Tends to RIGHT	The educator avoids using rapport building skills
37	The educator facilitates full participant engagement in interactive tasks	Tends to LEFT	Tends to RIGHT	The educator tends to facilitate interactive tasks with only a few participants
38	The educator avoids giving their own opinion	Tends to LEFT	Tends to RIGHT	The educator gives their own opinion
39	The educators tone of voice is warm and curious	Tends to LEFT	Tends to RIGHT	The educators tone of voice is dominant and autocratic

Appendix 14

University of Leicester Hospitals NHS Trust Logo
And DESMOND Logo

DESMOND National Office
Leicester General Hospital
Gwendolen Road
Leicester
LE5 4PW
Tel : 0116 258 7290
Fax : 0116 258 6165

An exploration of the validity of the Assessment Tools used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND structured group education programme for those with newly diagnosed Type 2 diabetes.

To: (*Name and address of DESMOND Educator*)

Dear xxxx (*name*)

We are writing to you about being involved in the above research study.
Sue Cradock, one of our national trainers and a founder member of the DESMOND collaborative, is undertaking research into the **observation tools** (DOS and DOT) used as part of the quality assessment process of educators.
In particularly, she is interested in finding out how much of what is delivered by educators in the programme, is captured in the DOS. In additional to this, she will be looking to see what other techniques are used by accredited educators to support the programme, that perhaps should be included as part of the assessment process.

To do this, Sue will be analysing video recordings of programmes being delivered by accredited educators such as yourself. This will involve Sue herself attending one of your programmes and recording the session using a static video camera. She will not interact with the delivery of the programme at all. For further information see the enclosed participant information leaflet.
Following initial analysis, she will be interviewing the educators involved to explore their views and reflections on the initial analysis and about the tools. Part of her research is to consider how the DOS could be of more use to educators in their practice of DESMOND delivery and she would be interested in your views on this.

If you are interested in helping Sue with this study could you please let me know either by contacting us either by returning the attached reply slip to the address above or by replying to us on the following email address: bernie.stribling@uhl-tr.nhs.uk

We will then let her have your contact details.

Alison Harding/Bernie Stribling
DESMOND National Programme

The DESMOND Quality Assurance Assessment Tools Study: Reply Slip

Please complete this form indicating your interest in participating in the study, and return to:

DESMOND Quality Assurance Assessment Tools Study (FAO Sue Cradock)
DESMOND National Office
Leicester General Hospital
Gwendolen Road
Leicester LE5 4PW

Sue Cradock will contact all educators who express an interest in taking part within 3 weeks of receiving the reply slip.

✂----------

PCT:

Educator Name…….

Address ……..

……..

……..

Male / Female

Telephone No……

Email address ……..……

Preferred time and method of contact……

Signature……

Please tick one of the following options:

☐ **I am interested in taking part in the DESMOND Quality Assurance Tools Study / I would like to find out more about the study.**

☐ **I am not interested in taking part in the study. Please do not contact me again.**

University of Leicester

NIHR CLAHRC
Leicestershire, Northamptonshire and Rutland (LNR)

DESMOND Quality Development Study

Educator Participant Information Leaflet

An exploration of the validity of the Assessment Tools used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND Structured group education programme for those with newly diagnosed Type 2 diabetes.

Principle Investigators:
Sue Cradock (PhD Student Department of Health Sciences, University of Leicester) Lead Researcher
Dr Helen Eborall (Department of Health Sciences, University of Leicester)
Professor Melanie Davies (Department of Cardiovascular Sciences, University of Leicester)
Professor Richard Baker (Department of Health Sciences, University of Leicester)
Dr Marian Carey (National Director: DESMOND. University of Leicester Hospitals NHS Trust)
Mrs Bernie Stribling (National Programme Manager: DESMOND. University of Leicester Hospitals NHS Trust)

We are inviting you to take part in a research study on the DESMOND newly diagnosed programme. Before you decide whether to take part, it is important that you understand why the research is being done and what it will involve.

What is the purpose of the Study?

The purpose of the study is to examine how well the DESMOND Observation Sheet and Tool (DOS and DOT) represent the delivery of the programme. The DOS and DOT combined is used to accredit DESMOND educators by measuring their performance in the delivery of the programme. There is a need to assess the tool's validity – i.e. to assess whether the tool measures what we think it measures.

Why have I been invited to take part?

Because you are have been accredited as a DESMOND educator and therefore someone who is delivering the programme to the required standard. The study is not about assessing you as an educator but assessing the tools used to assess the programme as delivered by someone like yourself. Not all suitable educators will be recruited, as we will attempt to recruit a mix of educators based on their professional group if possible.

If I take part, what do I have to do?

Following your agreeing to take part in the study, Sue will discuss with you which DESMOND programme will be suitable for her to attend and record. She will then provide you with information sheets to send to the patient participants who have been registered for attendance at that programme.
On the day of recording, all you will need to do is help Sue find the suitable place for the recording equipment.
Following the recording of the programme, and the initial analysis of findings from all the recordings, Sue will make contact with you to interview you about the findings. This will be within a year of the recording of the programme. The discussion will focus on the analysis of all the programmes she has recorded and analysed, not on your specific session.

Do I have to take part?

It is completely your choice whether you take part or not. If you decide to join the study, you are still free to change your mind at any time during the study. That decision will not affect your future as a DESMOND educator.

If you decide to take part, you will be asked to sign a Consent Form once you have had the opportunity to read this leaflet and ask any questions you might have. You will be given a copy of your signed form to keep for your own information

Will it cost me anything to take part?

It is not expected that there will be any costs incurred by you as part of the study. Telephone interview costs will be met by us.

Will my taking part in this study be kept confidential?

Yes. We will follow ethical and legal practice in accordance with the Data Protection Act (1998). All information about you will be handled in confidence. Access to identifiable data (name, address etc) will be limited to selected members of the research team and to auditors for the purpose of monitoring the quality of the research. This information and other personal details will not be included in analysis, or in publications or reports. All information collected during the study will be identified by a unique code so that you cannot be identified from it. All data will be kept on secure computer servers and in locked filing cabinets within a locked office at University of Leicester. The recorded video and audio data will be kept in securely at the University of Leicester for 6 years.

What are the possible benefits or risks of taking part?

The results of this study will potentially result in a more focused and usable reflection/assessment tool for DESMOND educators and assessors.
By taking part in this study, you will be contributing to a detailed analysis of the DOS/DOT assessment tools used to help educators reflect on their practice as well being used to accredit them.
If you are recruited to the study and agree to take part, you will offered a copy of the recording of your delivery should you like to receive one for your own review.

We do not anticipate any risks to you taking part in this study but all health research is covered for mishaps in the same way as for patients undergoing treatment in the NHS, i.e. compensation is only available if negligence occurs.

Will I be able to find out the results?

Following early analysis of the videoed sessions, you will be provided with a summary of the data as part of the follow up interview. At the end of the study, a report outlining the findings and recommendations of the study will be sent to all involved. We will also write reports for professional medical journals, present the results at conferences, and publicise them through Diabetes UK and various diabetes websites

Who is organising and funding the study?

The study is funded by the Leicester, Northampton and Rutland CLAHRC and organised by University of Leicester.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, known as a Research Ethics Committee, to protect your safety rights, well-being and dignity. This study was given a favourable opinion by the East Midlands Research Ethics Committee on 24th May 2012. The study has received research governance approval from your Primary Care Trust.

What if there is a problem?

If you have any concerns about any part of this research project please contact the principle investigator, Sue Cradock (contact details are below). She will do her best to answer any of your questions. If you remain unhappy and wish to complain formally, you can do this using the normal NHS Complaints Procedure.

Who can I contact for further information?

Your main contact for this study is:
Ms Sue Cradock, telephone: 07774722210, Email: sc391@le.ac.uk

Alternatively if you would like to discuss this research with someone who is not on the study team you may contact Jayne Hill - Ethics and Regulatory Affairs Coordinator, Leicester Diabetes Centre [jayne.hill@uhl-tr.nhs.uk]

What happens next?

If you are interested in taking part, then please contact Alison Harding on the phone number or email address on the letter attached to this leaflet. She will pass your details onto Sue Cradock, who will contact you to find out if you are still happy to take part and answer any questions you may have. If you decide to join the study, then arrangements will be made with you about recording a suitable DESMOND session.

Thank you for taking time to read this leaflet.

University of Leicester

NIHR CLAHRC
Leicestershire, Northamptonshire and Rutland (LNR)

DESMOND Quality Development Study

Patient Participant Information Leaflet

An exploration of the validity of the Assessment Tools used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND Structured group education programme for those with newly diagnosed Type 2 diabetes.

Principle Investigators:

Sue Cradock (PhD Student Department of Health Sciences, University of Leicester)

Dr Helen Eborall (Department of Health Sciences, University of Leicester)

Professor Melanie Davies (Department of Cardiovascular Sciences, University of Leicester)

Professor Richard Baker (Department of Health Sciences, University of Leicester)

Dr Marian Carey (National Director: DESMOND. University of Leicester Hospitals NHS Trust)

Mrs Bernie Stribling (National Programme Manager: DESMOND. University of Leicester Hospitals NHS Trust)

You are registered to attend a DESMOND diabetes education programme that has been selected to be part of a research study. Whilst the study is not focused on you specifically, your role in the programme is inherently part of the study and so it is important that you understand the purpose of the research and how it may impact on you. Should you decide not to attend the programme that is being recorded, you can be registered for another suitable session.

What is the purpose of the Study?

The DESMOND programme is run across the country and has been shown, through research studies, to have benefits to people with Type 2 diabetes, like you. Part of the success of the programme is ensuring that the educators are delivering the programme in the best way possible and to support that, each educator is assessed using a set of paperwork that guides the assessor to observe their performance. We have examined this paperwork and need to check how it covers the programme and the way the educator works, in more detail. To do this we need to record and analyse some DESMOND programmes in a real life setting.

How will I be involved?

The programme that you have been registered to attend is selected to be recorded, as an already 'accredited' educator will be delivering it: someone who has already been shown to be delivering the programme in the described way. To see the educator in action, and analyse what she/he is doing, your role in taking part in the programme is vital. So whilst our study is not specifically focused on you, your participation is inherently part of what makes the educator do what she/he does.

You will not be asked to do anything more than participate in the programme as you would normally, once you have agreed to be part of the programme being filmed.

Will my taking part in this study be kept confidential?

Yes. We will follow ethical and legal practice in accordance with the Data Protection Act (1998). There will be no personal details kept known or kept about you. Any information about you that comes to light as part of the discussions during the programme being recorded will only be seen and heard by the research team. All written information collected during the study will be identified by a unique code so that you cannot be identified from it. All data (written and recorded) will be kept on secure computer servers/data keys and in locked filing cabinets within a locked office at University of Leicester. The recorded video and audio data will be kept in securely at the University of Leicester for 6 years.

What are the possible benefits or risks of taking part?

The results of this study will potentially result in a more focused and usable reflection/assessment paperwork for DESMOND educators and assessors.

This will in turn support the development of educators delivering the programme across the country. It is also expected that this work will influence similar assessment processes for other DESMOND programmes.

We do not anticipate any risks to you taking part in this study but you may like to know that health research is covered for mishaps in the same way as for patients undergoing treatment in the NHS, i.e. compensation is only available if negligence occurs.

Will I be able to find out the results?

Should you be interested in the results, the research team will be happy to send you a copy of the final report. We will write reports for professional medical journals, present the results at conferences, and publicise them through Diabetes UK and various diabetes websites

Who is organising and funding the study?

The study is funded by the Leicester, Northampton and Rutland CLAHRC and organised by University of Leicester.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, known as a Research Ethics Committee, to protect your safety rights, well being and dignity. This study was given a favourable opinion by East Midland Research Ethics Committee on 24th May 2012. The study has received research governance approval from your Primary Care Trust

What if there is a problem?

If you have any concerns about any part of this research project please contact the principle investigator, Sue Cradock (contact details are below). She will do her best to answer any of your questions. If you remain unhappy and wish to complain formally, you can do this using the normal NHS Complaints Procedure.

Who can I contact for further information?

Your main contact for this study is:

Ms Sue Cradock, telephone: 07774722210, Email: sc391@le.ac.uk

Alternatively if you would like to discuss this research with someone who is not on the study team you may contact Jayne Hill - Ethics and Regulatory Affairs Coordinator, Leicester Diabetes Centre [jayne.hill@uhl-tr.nhs.uk]

What happens next?

If you are happy to attend the DESMOND programme that is being recorded, then come along to the session that you have been booked into. Sue Cradock will meet with you briefly to make sure you are clear about what is happening and happy to consent to being part of the research.

Please note: If you agree to take part and turn up to the DESMOND programme that is due to be recorded, your involvement in the programme cannot be withdrawn once the recording has been taken.

Should you arrive and decide that you do not want to be recorded then the DESMOND educators will arrange for you to attend an alternative date.

Thank you for taking time to read this leaflet.

University of Leicester

NIHR CLAHRC
Leicestershire, Northamptonshire and Rutland (LNR)

DESMOND Quality Development Study
Educator Consent Form

An exploration of the validity of the Assessment Tools used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND Structured group education programme for those with newly diagnosed Type 2 diabetes.

Principal Investigators:
Sue Cradock PhD Student
Dr Helen Eborall (Department of Health Sciences, University of Leicester)
Professor Melanie Davies (Department of Cardiovascular Sciences, University of Leicester)
Professor Richard Baker (Department of Health Sciences, University of Leicester)
Dr Marian Carey (National Director: DESMOND. University of Leicester Hospitals NHS Trust)Mrs Bernie Stribling (National Programme Manager: DESMOND. University of Leicester Hospitals NHS Trust)

Centre No: ☐ ☐ **Educator No:** ☐ ☐

Please initial each box

1. I have read the participant information sheet (*Version 4, 30/4/2012*) of the above project and have been given a copy to keep. I have had the opportunity to ask questions about the project and I am satisfied with the information I have been given. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without role as an educator being affected. ☐

3. I understand that any information related to me will be kept securely and if used in publications or reports, I will be anonymised. ☐

4. I agree that the educational program in which I take part will be video and audio recorded. I was informed that the data will be stored in the University of Leicester and destroyed after 6 years ☐

5. I agree to take part in the above study.

_____	_____	_____
Name of Educator	Date	Signature
_____	_____	_____
Name of person taking consent	Date	Signature

University of Leicester

NIHR CLAHRC
Leicestershire, Northamptonshire and Rutland (LNR)

DESMOND Quality Development Study
Patient Participant Consent Form

An exploration of the validity of the Assessment Tools used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND Structured group education programme for those with newly diagnosed Type 2 diabetes.

Principal Investigators:
Sue Cradock PhD Student
Dr Helen Eborall (Department of Health Sciences, University of Leicester)
Professor Melanie Davies (Department of Cardiovascular Sciences, University of Leicester)
Professor Richard Baker (Department of Health Sciences, University of Leicester)
Dr Marian Carey (National Director: DESMOND. University of Leicester Hospitals NHS Trust)

Mrs Bernie Stribling (National Programme Manager: DESMOND. University of Leicester Hospitals NHS Trust)

Centre No: ☐ ☐ **Educator No:** ☐ ☐ **Patient No** ☐ ☐

Please initial each box

1. I have read the participant information sheet (*Version 2, 30/4/2012)* of the above project and have been given a copy to keep. I have had the opportunity to ask questions about the project and I am satisfied with the information I have been given. ☐

2. I understand that the focus of the research is on the educator delivering the programme not myself but that any information related to me will be kept securely and if used in publications or reports, I will be anonymised. ☐

3. I agree that the educational program in which I take part will be video and audio recorded. I was informed that the data will be stored in the University of Leicester and destroyed after 6 years ☐

4. I agree to take part in the above study. ☐

_____	_____	_____
Name of patient	Date	Signature
_____	_____	_____
Name of person taking Consent	Date	Signature

Appendix 19

NIHR CLAHRC
Leicestershire, Northamptonshire and Rutland (LNR)

University of Leicester

An exploration of the content validity of the Assessment Tools used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND structured group education programme for those with newly diagnosed Type 2 diabetes.

Study Protocol

Principal Investigator

Sue Cradock

Co-Investigators

Dr Helen Eborall

Professor Melanie Davies

Professor Richard Baker

Mrs Bernie Stribling

Dr Marian Carey

Ms Cheryl Taylor

Dr Wendy Hardeman

Background

The provision of self management education is now considered to be a fundamental part of diabetes care (Department Of Health 2001, 2002. NICE 2003). It is recognised that people with diabetes (and other long term conditions) are the main carers of their own condition and the role of health care provision is to recognise that they may require support to do this, in terms of knowledge and self management skills. People with diabetes in England and Wales are now more frequently offered some form of education at the time of their diagnosis, however the length, content and style of education options varies greatly between services. The need to design and evaluate programmes to ensure greater clinical and cost effectiveness

was recognised by NICE (2003). Subsequently, Diabetes UK and the Department of Health in England, published a set of standards to guide those developing such programmes (Diabetes UK and Department of Health 2005). These standards include that programmes should be supported by a written curriculum, underpinned with theories and an explicit philosophy, delivered by trained educators and quality assured. The quality assurance system is expected to include the following 3 aspects.

- The development of a defined programme, with a clear content, structure, curriculum and underlying philosophy which educators are given the necessary training to deliver. The training programme itself is tested and informed by the quality assurance process.
- Defined quality assurance 'tool(s)' based on the set curriculum, philosophy and process that identifies a core set of observable behaviours required to deliver the programme. These could be described as standards and a benchmarking process could inform the standards set and their review on a periodic basis.
- Internal and external process in place to assess the delivery and organisation of the programme itself.

The DESMOND (Diabetes Education and Self Management for Ongoing and Newly Diagnosed) Collaborative has developed a range of structured group education programmes. The initial programme developed by the DESMOND Collaborative sought to meet the national criteria from the outset. The programme has a written curriculum which seeks to provide clarity for educators as to the required educator processes and participant activities, as well as an agreed content framework to support the delivery of an 'ideal' DESMOND programme for those with newly diagnosed (ND) Type 2 diabetes. The descriptions of required educator behaviours have been developed using the underpinning philosophy and theoretical approaches (Skinner et al 2005, 2006) The collaborative developed a 'quality development' (QD) process rather than 'quality assurance' as it recognised the need to be clearer about what could be delivered by educators and that educators will be developing their practice over time and with experience.

The need to establish behavioural benchmarks and a process for educator reflection and development of the delivery of the DESMOND ND programme was guided by the

recognition that training health care professionals to deliver a diabetes related behaviour change programme may not always result in them successfully delivering a programme/intervention as it was designed (Pill et al., 1999). Even if training workshop participants (e.g. DESMOND educators) are motivated to change the way they work (by integrating new practices into their work), workshop attendance alone is reported as not sufficient to change practice and thus the DESMOND QD process needed to be more extensive and designed to support ongoing development (Anderson et al., 2005). The QD process for the current DESMOND ND programme consists of internal (self and peer reflection) and external processes. The external component starts with initial training and is followed by the application of two external review tools (at predetermined times):

1. The DESMOND observation sheet (DOS) is a paper-based assessment tool with a set of criteria designed to assess the extent to which the content and process indicators of observable educator behaviours are being delivered.
2. The DESMOND Observational Tool (DOT) is a quantitative measure of who is talking at 10-second intervals and is designed to assess the 'who is talking most' interaction of the educator and the participants of the group.

In an RCT of the DESMOND programme, the less time the educator spoke was associated with increased health belief change in the participants – one of the key theoretically based process indicators for successful outcomes of the programme (Skinner et al., 2008)
An underlying assumption of the DESMOND programme is that successful educator delivery of the programme will lead to successful participant outcomes (weight loss, increased smoking cessation and positive change in illness beliefs) based on the use of the behavioural/learning theories used to design the programme (Davies et al., 2008).
As far as we understand, this detailed 'observation of educator behaviours' approach to QD is unique to DESMOND and as such would benefit from further study.

Rationale:

The DOS and DOT are combined into one toolkit and is used to accredit DESMOND educators (735 across the UK as of November 2011) by measuring their performance in the delivery of the programme. Internal reviews of the tool's use have highlighted variability in

its use by assessors (Cradock et al. 2010, 2011) It may seem important to first work towards reducing variability, but this view is based on the assumption that the tool is valid. In order to improve the external validity of the tool (the extent to which it can be used in other areas) an assessment of the 'internal' validity is required to answer the question: does the tool measure what we think it measures? Whilst there appears to be face validity for the tool – DESMOND educators and assessors have developed the tool and believe that it covers the important aspects - there has been no formal assessment of other aspects to support validity. The next step would be to assess content validity of the toolkit: does it cover most of the desired content? The desired content of the toolkit is taken from the theoretical and philosophical basis for the programme.

The research question is therefore 'To what extent do the current DESMOND observational tools assess the criteria that have been identified as the measure of the quality of programme delivery?'

Aim and Objectives:

Aim: To investigate the content validity of the DESMOND QD observation tools (Desmond Observation Sheets (DOS) and Desmond Observation Tool (DOT)) in relation to the delivery of the Newly Diagnosed (ND) programme by a number of educators.

Objective 1. Assess the extent to which the DOS captures all the activities and behaviours that are key to the theoretical and philosophical bases for the programme.
Objective 2. Describe the amount of educator behaviour that the DOS captures (in the major/significant sessions of the programme) and to the extent to which each behaviour is utilised.
Objective 3. Describe and analyse all educator behaviours that are not identified by the DOS, and review their relevance to the underlying philosophy and their impact on the delivery of the programme.
Objective 4. Provide recommendations for improving the tools to support improved internal validity and use by educators/assessors.

Study Methods:

Study Design

Objective 1 will be met by a review of the literature in relation to the theories and philosophy that are reported to underpin the programme and mapping of the findings (in terms of activities/educator behaviours) to the current DOS tool. This will ensure that the DOS contains all the key aspects of the theories/philosophy and covers the behaviours associated with those theories.

Objectives 2 & 3 will be met by analysing video recordings of a selection of DESMOND programmes being delivered by accredited DESMOND educators and undertaking semi-structured interviews with educators.

Objective 4 will be met by assessing the results of Objectives 2/3 and submitting a report to the CLAHRC Curriculum and Training Advisory Team.

Setting and sampling

Programmes from up to 5 geographical areas will be included in the study; these will include rural and urban areas. Within these areas we will purposively sample educators from the pool of accredited DESMOND educators, to include a range in terms of years of experience of delivering the programme; length of time since training; and frequency of programme delivery.

The sample size has been informed by studies of treatment fidelity in intervention studies, which suggest selecting 20-40% of the deliverers of the intervention when analysing adherence to protocol (Schlosser 2002). The current study is unique as is not testing the intervention itself and given that the programme now has 735 educators nationally, to assess the delivery of 147 - 294 educators would be a major undertaking. Others have suggested that the decision regarding the amount of an intervention to be assessed will be guided by available resources (Hardeman and Michie 2009). Furthermore, as part of the analysis is qualitative in nature, our sample size will depend in part upon reaching theoretical saturation; from previous experience we therefore anticipate requiring analyses of approximately 20 educators' delivery. We will therefore seek to recruit 10 - 20 educators. This involves observing the delivery of up to 10 programmes as 2 educators deliver each programme. As this study focuses on educator performance, there is no requirement to sample patients within the programmes.

Recruitment

The DESMOND national office maintains a register of trained educators across the UK and will identify a pool of educators, within the chosen sites, who can be approached. The

DESMOND national office will send each of the educators identified a educator-participant information leaflet (Appendix 1) and invitation letter (Appendix 2) with a reply slip (with postage paid) giving permission for the investigator to contact them directly by telephone. The investigator will contact those educators who reply indicating willingness to be contacted; she will provide information about the study, check the educator's willingness to participate, and arrange a suitable time to undertake the video recording. This contact will be made at least 4 weeks prior to the programme delivery. The educator will then be asked to complete a consent form on the day of recording (Appendix 3).

Once the date of the recording is agreed, the programme coordinator will inform potential patient-participants that this particular programme is being recorded and that they will be sent an information sheet explaining this (Appendix 4). The information sheet will briefly outline the importance of the study; it will emphasise that the focus of the research is the educator delivering the intervention (not the patients) but explain that the educator's interaction with patient-participants is a necessary part of it. Furthermore, they will be informed that all data used for analysis will be anonymised, and that access to the video recordings will be limited to the research team (see sections on data storage and confidentiality below). Written consent from patient-participants will be sought on the day of recording (Appendix 5). It is hoped that all patients arriving on the day of the recording will agree to be filmed but, in the event of a patient arriving on the day and not giving their consent, then the recording will be abandoned.

Data collection

The video recording will be conducted using a fixed camera position for a single viewpoint with the investigator moving the camera to maintain focus on the educator and avoid the faces of patient-participants. The focus of the recording camera will be on the educators, but it is likely to be impossible to avoid recording patient-participants who move in front of the camera during session activities. The recording will include the voices of the patient-participants, to allow the analysis of the interaction between the educator and patients. To support the clarity of recorded discussions, digital audio recorders will be placed at suitable places within the room. The investigator will take field notes during the programme recording to support analysis (below).

After preliminary analysis of the video recordings, the investigator will contact the educator-participants to arrange the follow up interview. Follow-up interviews will be conducted with educators within 18 months of the initial recording. Interviews will be arranged at a time and place convenient for educators, which includes the possibility that some will be conducted by

telephone. Interviews will be semi structured and informed by a flexible topic guide (Appendix 6).

Data analysis

Recordings of the sessions will be analysed using 2 different approaches:

(a) Firstly, the current DOS and DOT tools will be used to produce the current standard QD score, and also to quantify the amount of time spent on individual educator behaviours (as per the current tool). As most of the structured coding (using the categories in DOS) will be performed by a single coder (SC), despite the coder being an expert in the use of the tool and may show high consistency of use, a test of validity is required to demonstrate that this coder is not using the coding tool in an 'idiosyncratic way'. A second 'expert' coder (CT) will code a sample of the initial recorded observations. The approach that will be used to establish reliability in this part of the study is that of 'inter-rater' reliability and a measure of correlation will be established (Kappa test of correlation). If the Kappa test shows low correlation then before the researcher continues to code the remaining video data, a means of establishing greater correlation would be identified. This is likely to involve the 2 observer/raters identifying the areas of disagreement and developing an agreed framework to support future coding. The 2nd coder will be asked to code further excerpts until improved correlation is achieved.

(b) Open coding will be conducted with the aim of identifying all behaviours and techniques used by educators (i.e. allowing free coding of behaviours not included in the current tool). To enhance reliability and avoid bias in this aspect of the study, a second coder (HE) will code a sample of the initial recorded observations. Discussions between SC and HE will produce and refine a coding framework.

The findings from (b) will then be compared with the behaviours listed in DOS (a) to reveal any behaviours/activities and techniques used by educators that are not captured by DOS. Initial analysis will examine these behaviours and techniques in terms of relevance and usefulness to the DESMOND programme, and categorised as follows:

- Not in tool but congruent/enhance the programme
- Congruent but do not add to the programme
- Neutral (do not do harm – but may waste time)
- Unhelpful/negative

Preliminary findings from this analysis will serve as part of the basis of the interviews conducted with educators, facilitating discussion of behaviours and techniques that are assessed using the current tool along with exploration of behaviours and techniques that emerge in the comparative analysis.

An assessment will also be made of the session(s) that illustrate 'best practice' for the whole session. Best practice will expect to be defined as those sessions that contain a larger proportion of the desired educator behaviours. Identification of this relationship will offer an opportunity for reducing the amount of time the assessor needs to be reviewing the programme delivery during planned assessment visits.

The results from analysis of the videos will be integrated with the results of the theory mapping exercise (objective 1) to inform development of an improved tool. The development of this will include prioritising the most important behaviours/activities that an assessment should focus on.

Data storage

The principal investigator will be responsible for both the recording and the storage of the recorded data during the programme delivery. Each recording will be downloaded onto an encrypted memory key and a secure hard drive. Each recording will be transcribed and the transcriptions will be kept for 6 years on the secure hard drive at University of Leicester. The videos will be destroyed at the end of the study. A database will be compiled to list all the details of recordings. A copy of all personal data (educator) will be kept on the secure hard drive at the University of Leicester.

Costings

See APPENDIX 7

Ethical Issues and Confidentiality

The investigator will seek to make the presence of the camera and the operator less obtrusive by avoiding the use of a roving camera or directly engaging with patient-participants or educators during the programme. Whist the camera may be expected to influence the interaction of the group, this is likely to be small (Heath et al. 2010) but will be considered when the data are analysed, and will feature in the follow-up interviews with educators.

Informed consent, protection of vulnerability and management of sensitive issues

The details of ensuring informed consent are described above.

Educators: we are selecting accredited educators; their *performance* will not be individually judged or affect their status or future career as an educator, rather their *delivery* is the subject of the analysis. The investigator will seek to understand any concerns about this from the educators during initial discussions about the study. To support this view the investigator will not provide any feedback on performance to the educator unless the educator requests it. The risk to the educators is likely to be minimal. This is an observational study and there is no direct intervention from the investigator to the delivery of the programme. Prior experience of the investigator during observation work as part of observation visits, suggests that the educators can usually perform in their usual way, despite the presence of the camera and observer. If any situation affects the programme to an extent that it is not usual delivery, and the educator wishes the recording to be halted, then the recording will be abandoned until the situation is resolved.

Patient-participants: As mentioned earlier in the recruitment section, the investigator will seek to be clear to patient-participants that the recording will be focused on the educator and not the participant. But as the study requires analyses of educator behaviours this will require the responses of the participants to be observed. In the experience of the investigator, patient involvement in the DESMOND programme does not usually cause emotionally sensitive discussions but should this happen, then the investigator will sensitively seek understanding from those affected about whether the recording should be erased. If the situation affects the programme to an extent that it is not a usual delivery, then the recording will be abandoned, as this will affect the analysis of the data

Confidentiality:

Patient-participants: The patient-participant details will not be known to the investigator, as there is no requirement for the investigator to be in direct contact with them. The video recordings that will contain their voices and may contain their images will be stored on an encrypted/password protected data key, with a copy on the secure hard drive at University of Leicester.

Educator-participants: The names and contact details of the educators will be kept on an encrypted/password protected data key and copied onto the secure hard drive at University of Leicester.

The recorded electronic video files will initially be transferred from the video camera data card to an encrypted password protected data key via a password protected laptop. As soon as possible, the files will be copied to and securely stored on the University hard drive. The recorded observations will be transcribed by the investigator and each educator will be allocated a code (E1, E2, E3 etc). The details of these codes will be also kept securely as described above.

Educators' identities will be anonymised in the data records whenever they are published.

As far as possible, all reference to particular institutions and organisations will be anonymised.

Appendix 20

NHS
Health Research Authority

NRES Committee East Midlands - Leicester
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Telephone: 0115 8839435
Facsimile: 0115 8839294

24 May 2012

Miss Susan Cradock
Advanced Post Graduate Student
University of Leicester
Adrian Building
University Road
Leicester
LE1 7RH

Dear Miss Cradock

Study title:	**An exploration of the content validity of the Assessment Toolkit used to review educator activities and behaviours in relation to the quality assessment of the delivery of the DESMOND Structured group education programme for those with newly diagnosed Type 2 diabetes.**
REC reference:	**12/EM/0129**
Protocol number:	**UNOLE 0263**

Thank you for your letter of 17 May 2012, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS sites

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Covering Letter		
Evidence of insurance or indemnity		16 August 2011
Interview Schedules/Topic Guides	1	14 December 2011
Investigator CV		29 March 2011
Letter from Statistician		
Other: Outline Costings		
Other: CV - Dr Eborall		
Other: CV - Professor Davies		
Other: CV - Professor Baker		
Other: Letter from National Officw to suitable educators	2	03 May 2012
Participant Consent Form: Patient	2	30 April 2012
Participant Consent Form: Educator	2	30 April 2012
Participant Information Sheet: Educator	4	30 April 2012
Participant Information Sheet: Patient	2	30 April 2012
Protocol	7	03 November 2011
REC application	65721/300850/1/112	02 March 2012
Response to Request for Further Information		17 May 2012

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

12/EM/0129	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project

Yours sincerely

pp.

Dr Carl Edwards
Chair

Email: georgia.copeland@nottspct.nhs.uk

Enclosures: "After ethical review – guidance for researchers"

Copy to: *Mrs Carolyn Maloney, University of Leicester*

Appendix 21

Topic guide for Focus Group interviews with DESMOND Educators

Notes: The topic guide will be a flexible tool which is open to revision if new areas of interest arise during the process of data collection.

Two visual prompts will be used: 1) a copy of the DESMOND tool in progress will be sent to the educator before their interview; 2) a card showing the 6 main areas/behaviours from the tool will also be used. In the case that the interview is conducted by telephone, both will be sent to the educator beforehand.

Introduction to the interview: reassure the participants being interviewed that:

- I am interested in finding out educators' views about the emerging DESMOND QD tool and how it relates to their delivery of DESMOND
- You are free to say as much or as little as you wish in response to any line of questioning
- I'm not be looking for 'right or wrong' answers – I am interested in your views!
- The information collected during the interviews will be treated as confidential and the transcripts will not be shared outside of research team (myself and my supervisors)
- The interview will be recorded and transcribed

Areas for discussion:

A: Background

- (intro question – e.g. what do you know about the current QD process?)

- Have you used the previous tools at all – e.g to help your delivery?
  - How useful were they
  - Why not?

B: The tool

- (Use prompt card with the 6 labels – and work through each in turn)
  - Label 1:
    - How does this 'description' relate to the delivery of DESMOND as you understand it?
    - As an educator how easy or difficult do you find this label?

    repeat for labels 2-6)

  - (show cards for behaviours included in the label)
    - How does this description of a behaviour relate to the delivery of DESMOND as you understand it?
    - As an educator, how easy or difficult do you find this behaviour?

- **C: Educator using tools**

- I now want you to think about how as an educator you might use the tool to help inform your own delivery..
  - I sent you this so that you can have a look beforehand...
    - What are your first impressions?
    - What do you think works well?
    - What doesn't work so well?
  - This particular item – has been one of the difficult items for the coders – what are you thoughts on in

- Are there any behaviours that you feel are integral to DESMOND delivery that are not captured in this tool?

  Further prompts..
- Content
- Format/length

D: closing

D: (remind educator of purpose of interview…) Is there anything else you think that we haven't covered?