Supplement 5

Appendix Box 1: Patient and public involvement (PPI)

At what stage in the research process were patients/public first involved in the research and how? Patients need to benefit from our study – this has been our priority from the beginning. We therefore included patients already at the stage of planning. The study grew out of our clinical activity and therapy expertise with chronic pain patients. We then asked our patients whether they would accept the study design, the deception condition, and which information they considered necessary to understand the procedure. We conducted an interview with the chairwoman of the German Pain Patient Organisation "UVSD SchmerzLOS" (independent association of active pain patients in Germany, "Painless"), Heike Norda, to discuss the study. "UVSD SchmerzLOS" also published an interview in their journal introducing the main aspects of clinical applications of placebo effects. Finally, we highlighted the clinical relevance of the study in the discussion section of our paper.

How was the development of the research question and outcome measures informed by patients' priorities, experience, and preferences? Through our daily work in the outpatient pain centre and as consultants for pain at the hospital we have gained a lot of experiences with patients suffering from chronic pain, especially clinical back pain. Particularly as psychological pain therapist collaborating with anaesthetists there have been many possibilities to observe (a) that the same active component of a prescribed pain medication yields different outcomes and (b) how the patients have received and in which context they have taken their medication. These real-life and clinical observations combine somatic and psychological factors in pain in a brilliant way, ultimately leading to our placebo research questions. Our outcome measures were standardized questionnaires and single rating scales that have been developed and evaluated with patients in German pain clinics and outpatient centres for years. Our special questions for the outcome scale "expectancies" was developed together with patients.

How did you involve patients in the design of this study? As described above, we involved patients in the design of the study by conducted interviews at our outpatient pain centre. We also discussed our ideas with the chairwoman of the German Pain Patient Organisation "UVSD SchmerzLOS", Heike Norda. It was very important to us to include patients from the beginning on and to receive their input and approval of the study.

Were patients involved in the recruitment to and conduct of the study? Patients were not

specifically appointed to recruit others. However, some did pass the information on to their acquaintance, but we did not include patients who had been previously informed about the study rational as our study design required the study, patients were involved as sovereign participants and the questionnaires and rating scales were used and evaluated by professionals.

How will the results be disseminated to study participants? The study rational was disclosed to all participants in a 30-60 minute personal conversation with the study's pain psychologists right after the intervention. The goal was to explain the deception condition and to point out that the placebo and nocebo effects were generated by themselves via targeted processes. We described to all patients how they can use placebo and nocebo effects for pain modulation and offered information sheets. Furthermore, the patients discussed the results of the study in our group therapy as well as in their single therapy setting with their pain psychotherapists. The authors will disseminate the results via conference presentations. All participants will receive a translated version of the main publication. Funding bodies and other journal editors internationally will be encouraged to incorporate the patients' expectancies into their therapy set-up.