## Running head: DEFINING AND MEASURING “SEXUAL ORIENTATION”

**Defining and measuring “sexual orientation:”**

**Building a comprehensive framework**

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**Abstract**

A review of the literature, relevant to defining and measuring “sexual orientation,” reveals significant challenges such as a lack of consensus, narrow interpretations, and lack of construct validity. Researchers who’ve attempted to measure “sexual orientation” and its presumed components typically have relied on a few instruments which have been criticized as inconclusive, oversimplified, loose, and imprecise. Considering the emerging trend to improve research, human rights, and health care delivery to sexual minorities, it is strongly recommended that a comprehensive, multi-component approach to measure “sexual orientation” be developed and used in future research. Drawing from the past research, and projecting future research, a framework for the operationalization of “sexual orientation” is therefore proposed. In this framework, appropriate questions have been collected from a variety of references which provides a more comprehensive model for defining and measuring “sexual orientation.”

Key words/phrases: Sexual orientation definition, measuring sexual orientation, sexual minority research, health care for sexual minorities; LGB

**Sexual behavior and/or psychological definitions**

Definitions of sexual orientation within the literature have generally comprised a "behavioral" component and/or a “psychological" component (Kinsey, 1948; Klein, 1985). Earlier informers such as Freund (1974) defined sexual orientation as the relative “erotic preference for the body of one sex over that for the other” (p. 26), but more recently there is a greater consideration given to “identity,” and/or “relational” components (APA, 2009; IOM, 2011). The American Psychological Association’s definition of sexual orientation appears more exclusive: “*Sexual orientation* refers to an enduring *pattern* [emphasis added] of attraction, behavior, emotion, identity, *and* [emphasis added] social contacts” (APA, 2010, p. 74). Not all definitions include all of these components and as mentioned above, often contain either the conjunction "and" or "or" in their description(s) (Sell, 1997).

Sexual orientation has been defined in a basic dictionary as “the inclination of an individual with respect to heterosexual, homosexual, and bisexual behavior” (*Merriam-Webster‘s Collegiate Dictionary*, 2005). However, this is really a narrow definition of something that in reality is complicated and multifaceted. Such definition seems to make an *a priori* assumption that the “inclination” of a person is synonymous with their behavior. But, we have learned that this is not always true; that not everyone with a particular sexual inclination practices that behavior (APA, 2009; IOM, 2011).

In the studies reviewed by Diamond (1993), of those who used some assessment of sexual behavior to determine the prevalence of sexual orientation, few assessed psychological state. Conversely, earlier authors defined sexual orientation as descriptive of the psychological states (e.g. attractions, feelings, fantasies, thoughts, etc.) without regard to behaviors, *per se* (Krafft-Ebing, 1886; Ellis & Symonds, 1897; Mayne, 1908; Robinson, 1936). But, according to *The American Psychological Association (APA) Task Force on Appropriate Therapeutic Responses to Sexual Orientation*, sexual behavior may be a correlate of sexual orientation but not, "necessarily the principal dimension of the construct" (APA, 2009, p. 30). The Task Force defined sexual orientation as "…an individual’s patterns of erotic, sexual, romantic, and affectional arousal and desire for other persons based on those persons’ gender and sex characteristics" (APA, 2009, p. 11). A key word in this definition is "patterns," as is the case in the APA (2010) definition. This would seem to eliminate those who have/had situational, casual, or incidents.

The Task Force report (APA, 2009) seems to indicate strongly that sexual orientation is embedded in the psychological states for the same-sex, opposite-sex, or both sexes distinguished from merely same-sex behavior. Although their theoretical opinion about sexual orientation is widely different than earlier views, the APA seems to be in-line with earlier thinking such as Krafft-Ebing (1886) who felt that one's feelings for the same sex were not the same as one having sexual acts with the same sex. In other words, someone was not necessarily considered a “homosexual” because they had had sexual acts with someone of the same sex. Additionally, individuals may not identify as homosexual (gay or lesbian) even if they have participated in same-sex behavior, regardless of their psychological state (APA, 2009; IOM, 2011). A good example of people having sexual acts with persons of the same sex, yet absent of other components (e.g. psychological states), are some prison inmates.

As Sell (1997, 2007) noted, other definitions have included either a psychological *or* a behavioral component:

For example, LeVay (1993) defined sexual orientation as “the direction of sexual feelings or behavior toward individuals of the opposite sex (heterosexuality), the same sex (homosexuality), or some combination of the two (bisexuality).” Weinrich (1994) defined homosexuality either (1) as a genital act, *or* (2) as a long-term sexuoerotic status. Here the psychological states referred to are "sexual feelings" and "sexuoerotic status", respectively; the behavioral construct is "sexual behavior" or "genital act," respectively. The psychological and behavioral components in both definitions are joined by "or" signifying that either one can be used to assess sexual orientation. (Sell, 2007, p. 359).

Sell (2007) observed that the definition given by Francoeur, Perper & Scherzer (1991) involved both sexual attraction and “genitally intimate activity.” Sell noted that “using the conjunction ‘and’ makes it unclear as to whether both components are necessary for the assignment of sexual orientation classifications” (p. 359).  
**Identity-based definition**

Some have stated that “sexual orientation can be defined by romantic *or*  [emphasis added] sexual attraction *or* arousal; by sexual activity or behavior; *or* [emphasis added]by ‘identity,’ meaning that a person regards herself or himself as homosexual or heterosexual”

(*Harvard Mental Health Letter*, 2006, p. 7; Savin-Williams, 2006). While this definition can be inclusive of attractions ([psychological states) and/or behaviors, a key word in this definition construct is “identity”). It appears that while one may have sexual attraction for the same-sex, the opposite-sex, or both, they may, or may not identify, or self-label as heterosexual, homosexual, or gay, lesbian, or bisexual. At any rate, this definition is more like potpourri than anything solid and accordingly what one concludes about sexual orientation may depend on which definition (or part of the definition) one chooses. This makes research and service-delivery difficult.

The APA’s take force report (APA, 2009) regards *sexual orientation* as separate from *sexual orientation identity*. According to them,

“S*exual orientation identity* refers to acknowledgment and internalization of sexual orientation and reflects self-exploration, self-awareness, self-recognition, group membership and affiliation, culture, and self-stigma. Sexual orientation identity involves private and public ways of self-identifying and is a key element in determining relational and interpersonal decisions, as it creates a foundation for the formation of community, social support, role models, friendship, and partnering" (APA, 2009, p. 30).

Finally, identification within the social context seems to be a very important factor and some authors note that levels of expression, behavior, and identity may change over time, culture, and place depending on the prevailing social context (Chiang, 2006; Tannenbaum, 2006).

**Relational-based definition**

As mentioned, there is currently a greater consideration now given to relational components of sexual orientation (APA, 2009). The *Institute of Medicine* (IOM) defines sexual orientation as:

“An enduring pattern of or disposition to experience sexual or romantic desires for, *and* [emphasis added] *relationships* [emphasis added] with, people of one’s same sex, the other sex, or both sexes. As this definition makes clear, sexual orientation is inherently a relational construct. Whether a sexual act or romantic attraction is characterized as homosexual or heterosexual depends on the biological sex of the individuals involved, *relative to each other*. One’s sexual orientation defines the population of individuals with whom one can potentially create satisfying and fulfilling sexual or romantic relationships. Such relationships help to meet basic human needs for love, attachment, and intimacy and are, for many people, an essential aspect of the self.” (IOM, 2011, p. 27)

The IOM committee’s definition of sexual orientationincorporates three core ideas:

First, sexual orientation is about intimate human *relationships* [emphasis added]—sexual, romantic, or both. These relationships can be actualized through behavior or can remain simply an object of desire. Second, the focus of sexual orientation is the biological sex of a person’s actual potential relationship partners—that is, people of the same sex as the individual, people of the other sex, or people of either sex. Third, sexual orientation is about enduring patterns of experience and behavior. A single instance of sexual desire or a single sexual act generally is not regarded as defining an individual’s sexual orientation (p. 27).

According to the IOM, regardless of the biological sex of the other person, the sexual act or romantic attraction potentially brings about satisfying and fulfilling relationships. The key word here is “relationships.” So, "men who have sex with men" (MSM), who otherwise lack any further relationship, or “enduring patterns” with each other, do not necessarily have to be grouped with those men who identify as "gay." The term MSM was created in the 1990s by epidemiologists, and used in Centers for Disease Prevention and Control (CDC) surveillance systems, in order to study the spread of disease among men who have sex with men, regardless of sexual orientation identification (CDC, 2010). While the definition of MSM helped us to learn more about health issues, it did less in the way of teaching us about sexual orientation, *per se*.

**Neurobiological definition**

Examining neurobiological components of sexual orientation from a biological standpoint have taken place. For example, “cerebral responses to putative pheromones and objects of sexual attraction were found to differ” between identified “homosexual” and “heterosexual” subjects in brain imaging, as reported in the Savic and Lindsrom (2008) study. It’s hard to conclude if the findings could assist in defining sexual orientation from a purely neurobiological standpoint since observation may mirror perceptional differences.

Savic and Lindsrom (2008) raised question as to “..whether certain sexually dimorphic features in the brain may differ between individuals of the same sex but different sexual orientation” (p. 9403). But the problem of operationalizing sexual orientation still exists. The authors also admitted that prior studies could not provide “conclusions about underlying mechanisms because they imaged perceptional processes, which could be innate, as well as learned” (p. 9403). Savic and Lindstrom (2008) used a convenience sample and therefore cannot be generalized. It would a broad leap to use any deductive reasoning from these findings; in others words, we cannot conclude that those who meet initial operational criteria for a particular sexual orientation would then have certain sexually dimorphic features in their brains that distinguish them between other individuals of other sexual orientations. Research in this area would be interesting, but as Gergen (2010) has warned, an overreliance on cortical research can lead to a shift toward diminishing socio-cultural processes, which should not be overlooked.

**Definitional variations of sexual orientation in government, law, and policy**

Outside of academic, clinical, and research circles, some governments have also attempted to define sexual orientation. For example, the Human Rights Act (HRA) of the District of Columbia defines sexual orientation as “male or female homosexuality, heterosexuality and bisexuality, by preference *or* [emphasis added]practice” (HRA, 2007). Thus, the HRA plain language actually allows for a narrow interpretation (by either psychological *or* behavioral component).

Definitional issues have also been addressed in high profile legal cases. A group of 13 organizations presented an Amici Curiae in support of the plaintiff-appellees in legal case against California's Proposition 8 and according to one expert witness Psychologist Gregory Herek, “Most social science and behavioral research has assessed sexual orientation in terms of attraction, behavior or identity, or some combination thereof”. But in the end, Herek concluded that “[S]exual orientation is at its heart a *relational* [emphasis added] construct, because it is all about a relationship of some sort between one individual and another, and a relationship that is defined by the sex of the two persons involved” (The United States District Court for The Northern District of California, Perry, et al vs Schwarzenegger, et al, p. 71).

As the Perry, et al case illustrates, “sex and sexual orientation are necessarily interrelated, as an individual’s choice of romantic or intimate partner based on sex is a large part of what defines an individual’s sexual orientation.” According to the Amici Curiae “homosexual conduct and identity together define what it means to be gay or lesbian” and cite other cases to support “that homosexual conduct and attraction are constitutionally protected and integral parts of what makes someone gay or lesbian.” Finally, the court stated that, “Our decisions have declined to distinguish between status and conduct in [the context of sexual orientation]” (p. 120). They did not wish to make a distinction between attraction, conduct, and identity.

An international collaboration, concerned about international human rights law drafted the Yogyakarta Principles, which is set of principles relating to "sexual orientation" and "gender identity" (Yogakarta Principles, 2007). They said that, "Sexual orientation is understood to refer to each person’s capacity for profound emotional, affectional and sexual attraction to, and intimate and sexual relations with, individuals of a different gender or the same gender or more than one gender." (p. 6).  Here, the authors emphasize the word "profound," which would seem to distinguish them from less persistent and intense experiences of those dimensions.

**Measuring sexual orientation for research purposes**

Attempts to measure sexual orientation has been long dated (e.g. Ulrichs, 1994/1860; Hirschfeld, 1896). The most common method for assessing sexual orientation for research has been through self-reports (subjective data), or clinical reports (objective data), particularly in behavioral and psychoanalytic literature (Chung & Katayama, 1996). Yet anecdotal reports alone are not considered rigorous enough to satisfy the scientific community. However, questions at-large point to how we hook up the objective and the subjective data to the empirical domain.

Bell and Weinberg (1978) had their respondents rate arousal separate from attraction and found differences. This finding helped to support the need for a multiple-component model. While Davis, et al. (1998) discussed several psychometrics of sexual orientation, according to Sell (1997; 2007) former researchers wanting to measure sexual orientation generally chose from a few basic measurement tools: The commonly referred, Kinsey’s Scale (also referred to as the Heterosexual-Homosexual Rating Scale) (Kinsey, Pomeroy & Martin, 1948), Shively and DeCecco’s Scale (Shively & DeCecco, 1977), the Klein Sexual Orientation Grid (Klein, Sepekoff & Wolf, 1985), or the Sell Assessment of Sexual Orientation (Sell, 1996).

In critique of such psychometics, Sell (2007) noted that Kinsey’s Scale was “unsatisfactory because it forces the artificial combination of psychological and behavioral components and incorrectly requires individuals to make tradeoffs between homosexuality and heterosexuality” (p. 370). While Klein et al. (1985) seemed to be poised to improve a definition of sexual orientation, the grid was criticized as “unsatisfactory because the relative importance of each dimension in measuring sexual orientation has not thoroughly investigated or grounded in strong theory, and like Kinsey and Klein required subjects to make trade-offs between heterosexuality and homosexuality” (p. 370). As for Shively and DeCecco’s scale, Sell noted that it was inadequate because “its properties had not been thoroughly investigated and its consideration of physical and affectional preference was oversimplified or even inappropriate” (p. 370).

Sell (2007) made the point that “psychological components of definitions may include for example, such terms as sexual passion, sexual urge, sexual feelings, sexual attraction, sexual interest, sexual arousal, sexual desire, affectional preference, sexual instinct, sexual orientation identity, and sexual preference” (p. 360). He goes on to note that, “each of these terms, however may also require some construct, and may have a distinct meaning, and may not necessarily be indicative of the same phenomenon. That is, different terms in definitions may be describing slightly different phenomena despite the similar label for that phenomena” (p. 360). For example, a behavioral component can vary between definitions and each one of these components presents challenges for operationalizing them for measurement.

Tannenbaum (2006) stated that researchers must consider how identity also varies among individuals and communities. A friend from a strict Hindu region once told me, “We don’t have ‘homosexuals’ here.” When prodded more, she admitted there were, but people rarely verbalized the fact. Tannenbaum noted that more research should be conducted to determine distinctions among various groups.

Sell’s (n.d.) recommends a good foundation for operationalizing sexual orientation. The format he proposed considers multiple components rather than something monolithic. Beckstead (2012) suggests that assessment of sexual orientation should also include erotic attraction and “aversions” considering both sex characteristics and age characteristics.

**Problems with research**

The major challenge with defining sexual orientation has been the lack of consensus, narrow interpretations, mono-dimensional rankings, and construct validity (Gonsiorek & Weinrich, 1995; Chung & Katayma, 1996; Neighbors, 2000; APA, 2009; IOM, 2011). The most basic problem in the research has been the question of how to categorize subjects into sexual orientation cohorts (Neighbors, 2000; IOM, 2011). A lack of a clearly defining and measuring of sexual orientation has led to misunderstandings (IOM, 2011).

Historically, clinicians and researchers have often been confused when studying sexual orientation (Gonsiorek & Weinrich, 1995; APA 2009; IOM, 2011). The IOM found in literature reviews that researchers failed to define sexual orientation and they also differed theoretically (IOM, 2011).

Ultimately, because definitions can be arbitrary, it makes past research difficult to interpret. Nevertheless, gay, lesbian, bisexual men and women - and other men and women who have sex (or not) with their same-sex, or opposite-sex - represent an incredibly diverse community, and because of this, difficult to study unitarily (Chung & Katayama, 1996). In fact, some argue that the use of an umbrella term such as LGBT (Lesbian, Gay, Bisexual and Transgender), actually obscures the differences among them (IOM, 2011).

Sell (1997) and IOM (2011) contend that we need to get a clearer definition of sexual orientation. Looking at sexual behavior as the sole basis for a definition of sexual orientation seems inadequate (Sell, 1997, 2007; IOM, 2011). A celibate person could be straight, gay, bisexual, or something else? With arousal or attraction as the standard, many people might look more or less homosexual or heterosexual. Researchers might report subjects as one particular orientation based on consistency of identity, behavior, and/or attraction. Until those various approaches have been thoroughly tested, we won’t know much about sexual orientation, or get a clear relationship to important health matters.

**Other orientations?**

A Washington, D.C. Superior Court ruling in *Parents and Friends of Ex-gays (PFOX) vs. D.C. Office of Human Rights* identified “ex-gays” “as a protected class under sexual orientation” (NEA Ex-Gay Educators Caucus, 2010, nap.). The term “ex-gay” has been used in the literature to describe a person who has experienced change in [sexual orientation](http://en.wikipedia.org/wiki/Sexual_orientation), or who has once identified as gay, but subsequently identifies as straight. But, the change elements vary among individual and in reports (Throckmorton, 19989; Spitzer, 2003). The ambiguity of the term “ex-gay” therefore is something future researchers need to be mindful of when studying this population (Beckstead, 2012).

Savin-Williams and Cohen (2010) write about other phenomena referred to as “mostly straight, most of the time”. Here the authors talk about men who do not neatly fit into a category of “straight,” “gay,” or “bisexual.” These men self-identify as “mostly straight,” but will on occasion have some sort of same-sex encounter albeit, attraction, sexual interaction, crush, or romantic relationship with other guys. One would say they are bisexual, but they refuse such identity as this does not seem to be a set pattern for them. These authors also point out that their experience with subjects seems to correlate with national surveys in the United States and Canada which have shown that 3 to 4 percent of male teenagers, when given a choice to select a term that best describes their sexual feelings, desires, and behaviors opt not for heterosexual, bisexual, or gay, but for “mostly” or “predominantly” heterosexual. These nuances create greater challenges for defining and measuring sexual orientation.

Others believe that there may be other sexual orientations in our species such as asexual (having no sexual interested in females or males). Bogaert (2004) analyzed data from more than 18,000 British residents and found that 185, or about 1 percent of this population described themselves as “never having a sexual attraction to anymore.” There are also discussions about “*panromantic* (also *omniromantic*): romantic attraction towards person(s) of any gender or lack of gender, including persons of nonbinary gender – the romantic aspect of [*pansexuality*](http://en.wikipedia.org/wiki/Pansexuality),” but research is lacking and rather than seen as orientation, *per se*, these are often seen more in terms of roles (Diamond & Butterworth, 2008); pedophlia, hebephilia, ephebophilia, teleiophilia, and gerontophilia are seem in terms of age and described as paraphilia rather than distinct sexual orientations.

**Summary and recommendations for improvement**

The definition and measurement of sexual orientation has been shown to be problematic. The problem with defining sexual orientations has been the lack of consensus and/ or an inconsistency of definition among professionals and researchers. Inconsistent definitions have made past research difficult to interpret. Most significant is that previous researchers have largely failed to operationalize the concept of sexual orientation, i.e. to develop a standard definition and method for measuring a phenomenon that in large part is non-observable and subjective. Attempts to define sexual orientation generally included self-reported sexual behavior and/or psychological state (e.g. attraction), and/or sexual orientation or gender identity, and/or relational-based components. To avoid these nuances there is a need to define each of these components clearly and operationalize them using standardized measurement instruments. Researchers who’ve attempted to measure sexual orientation typically have relied on only few psychometrics which have been criticized as inadequate, i.e. inconclusive, oversimplified, loose, or imprecise. According to the Institute of Medicine, the “lack of standardized measures contributes to the variability of population estimates of sexual orientation and makes comparisons across studies difficult” (IOM, 2011).

Unless the components that encompass *sexual orientation* (e.g. *heterosexual*, *homosexual*, *bisexual*, (and other sexual minority terms)) are clearly, consistently, and reliably operationalized, future research will be problematic, limiting the ability of medical and mental health care providers to understand, describe, and meet the health care needs of these populations (HHS, 2011; 2012; IOM, 201). It is therefore recommended the various components needed to measure sexual orientation be considered when conducting future research (e.g., through the addition of appropriate questions on questionnaires and/or suitable standardized instruments), vs. something monolithic. This would help provide more data to assist in conceptualizing the phenomena of sexual orientation better. Studies should be conducted using both the subject’s narrative comments and responses to standardized measures. One without the other is not enough. This will indeed be a challenge for researchers considering the time and effort it will require. However, listening to what people have to say, orally and in writing, about themselves, in addition to what they report on standardized instruments is a powerful combination and it is more respectful in the long run. A reliable and valid narrative as well as psychometric understanding of the nature and experience of sexual orientation would serve better the populations who will be reliant on healthcare and other services in the future. This is relevant given that there’s governmental interest in conducting research to better understand and serve the health care needs of sexual minorities (NIH, 2012).

I agree with Sell’s (2012) recommendation that a good foundation for operationalizing sexual orientation should considers multiple components rather than something monolithic. Further, the major components needed for operationalizing a clear and comprehensive definition of sexual orientation should also include gender identity, psychological, relationship factors, and identity using both narrative and metric responses. All components should be measured in terms of the subject’s historical context, present state, and the desired future.

It is also important to get a clear indication of the subject’s own gender identification. One way to deal with this is to ask subjects what their birth gender was compared to what their psychological gender is, in other words what gender do they feel they are despite how they were born. If there is dichotomy, then questions to help identify areas of transgender would be appropriate. In addition, for those who were born intersexed, it would be helpful if they were asked about this, particularly by health care providers since they may require specialized services.

Psychological states should be surveyed to include the subject’s general patterns of attraction, erotic desires, emotional preferences, thoughts, ideas, and romantic inclinations. Incidental occasions of sexual experiencing (fleeting thoughts, situations, etc.) should be distinguished from patterns (prevalent, persistent, continuing, etc.). Surveyed behaviors should include the general patterns of erotic sexual behaviors and distinguishing between incidents and patterns of behavior. Surveying of behavior need not be exclusive of sexuality since relationships encompass many behaviors that don’t include sexuality.

It is recommended that researchers develop and consistently use standardized ways of asking subjects how they define, label, and identify their own sexual orientation identity. According to the APA sexual orientation identity is the pattern of feeling, thinking and acting with which subjects typically self-identifies and may also include how subjects typically are identified by their social group(s). For example, subjects may label themselves and/or groups to which they do, or do not belong using terms such as gay, straight, bisexual, lesbian, and others. Subjects also may self-label to varying degrees (e.g. “somewhat homosexual”, “more heterosexual than homosexual”, etc.) as indicated on the surveys provided by Kinsey, et al. (1948), Klein, et al. (1985), Sell (1996), Shively and DeCecco (1977), and others.

In terms of relational surveying, researchers should seek to find out a number of objective and subjective facts about the subject. Researchers should assess whether: 1) the subject is currently legally married, in a stable and committed relationship, or other arrangement (e.g. dating); 2) the subject’s current primary intimate human relationship is romantic, sexual, both, or neither; 3) whether or not the subject’s current primary intimate human relationship is “satisfying and fulfilling” (IOM, 2011, p. 27); and, what aversions they may have (Becksted, 2012); 4) the sex of the subject’s spouse or partner in his/her current primary intimate human relationship; 5) is there are desires of a future intimate human relationship. If so, researchers should have them specify (including the ideal gender of the partner). Researchers should ask subjects to describe the historical (past) contexts of their intimate human relationship(s) to include the sex(es) of those partners, the romantic elements (considering psychological variable questions), and sexual elements (considering questions from behavioral variables), as applicable.

Drawing from the past research, and projecting future research, *a proposed framework* was developed to display multiply components and questions to build a framework for the operationalization of sexual orientation, which will be useful to researchers and clinicians. Appropriate questions have been collected from a variety of references which can assist in the process of defining and measuring sexual orientation, and can be a foundation for more inclusions moving forward (See appendix 1).

Operationalizing a definition of sexual orientation will not solve problems of sexual minority stigma, but it will allow more opportunities to understand people and subgroups as a whole, rather than in minor component such as sexual behavior, for example. It also allows the opportunity to understand and accept a person’s identity, an important subjective factor, aside from their affect, presentation, or prescribed idiosyncrasies, which are generally objective.

Finally, while there is largely a shared presumption that psychological functioning can be traced to the brain, we cannot solely rely on brain imaging to determine sexual orientation since brain activity and behavior are highly influenced by culture and the social environment in which all humans live (Gergen, 2010). Defining and measuring sexual orientation is also difficult when there are many prevailing theories. For example, some do not see sexual orientation as binary, rather something on a spectrum, and some see it as fluid. Some see some sexual expressions as not orientation, per se, but rather an experience of some type of pathology. Although there is debate as to whether or not a person’s erotic interest or desire is inherently fixed, we do know that levels of expression, behavior, and identity can change over time, in culture, and places depending on the prevailing social context. This being the case, research in order to address social changes must be conducted continually in order to adequately address emerging diverse health care needs of all.

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**Appendix 1**

1. Proposed Framework for Operationalization (Defining/Measuring) of Sexual Orientation

Variable

*Behavior*

Operational Questioning

What are the actual sexual behaviors distinguished between incidental and patterns of behavior1,2,3,4,5,7

Variable

*Psychological*

Operational Questioning

What are the patterns of internal erotic desires, thoughts, fantasies1,3,6,7

What are the patterns of internal emotional preferences1,3,7,9

What are the patterns of internal romantic thoughts, ideas, drives1,7,10

What gender(s) is the subject’s attraction toward (distinguish between incidental and patterns of attraction)1,2,7,11

Variable

*Identity*

Operational Questioning

How does the subject describe (label) his/her sexual orientation identity in accordance to: individual (self-label) and group (community, culture, place of faith/worship/religious affiliation, social, role models, friends, partner, colleagues) affiliation (APA, 2009)1,3,7,13,14,15,16,17

How does the group’s affiliates identity (label) the subject1,3,7,14,17

Variable

*Relational*

Operational Questioning

Is the subject currently: legally married, in a stable and committed relationship, or other (e.g. dating)1

Is the subject’s current primary intimate human relationship: romantic, sexual, both, or neither1

Is the subject’s current primary intimate human relationship “satisfying and fulfilling” (IOM, 2011, p. 27) 1

What is the gender of the subject’s partner in his/her current primary intimate human relationship1

Are there desires of a future intimate human relationship, if so explain (include the ideal gender of the partner) 1

Describe the historical (past) contexts of the subject’s intimate human relationship(s) to include the gender(s) of those partners, the romantic elements (consider questions from the psychological variable), and sexual elements (consider questions from the behavioral variable), as applicable1

Optional Variables

*Cerebral (bio-chemical)*

Operational Questioning

What are cerebral responses that may be measured on brain scans (Savic & Lindsrom, 2008).

Is there genital engorgement in response to exposure to different erotic material that may be measured penile or vaginal photoplethysmography (Meston, n.d.; Kuban, Barbaree, & Blanchard, 1999).

1. Building on the framework:

What are other operational questions and metrics that should be presented?

Footnotes

Metrics:

1 subjective and objective narratives, 2 Sell (1996) items 7-10, 3 Kinsey et al (1948), 4 Klein (1985) item B, 5 Friedman (n.d.) item 14, table A, 6 Friedman (n.d.) item 7-12, 7 Shively & DeCecco (1977), 8 Klein (1985) item C, 9 Klein (1985) item D, 10 Schluter (2002) item 80, 11 National Survey of Family Growth Audio-CASI as cited in (Sell, n.d.), 12 Friedman (n.d.) items 7-12, 13 Klein (1985) item F, 14 Schluter (2002) item 82, 15 Miller (2002), 16 Sell (1996) items 11-12, 17 Friedman (n.d.) item 13