Published in final edited form as:

Psychol Rep. 2010 December ; 107(3): 773–783. doi:10.2466/03.08.16.PR0.107.6.773-783.

Sex Differences in the Factor Structure of a Modified Sexual Experiences Questionnaire¹

Madhavi K. Reddy^{1,2,3} and **Maureen Murdoch^{1,3,4}**

¹Minneapolis VA Medical Center, Minneapolis, MN

²Department of Psychiatry, University of Minnesota Medical School, Minneapolis, MN

³Center for Chronic Disease Outcomes Research, Minneapolis, MN

⁴Department of Medicine, University of Minnesota Medical School, Minneapolis MN

Summary

Sexual harassment has long been a problem in educational, employment, and military populations. It is unclear whether existing questionnaires used to measure sexual harassment in the U.S. military—particularly, derivatives of the Sexual Experiences Questionnaire—perform similarly in men and women. Using exploratory factor analyses in a mixed sample of active duty troops and veterans (289 men, 181 women) sex differences were found in one version's factor structure. Implications and suggestions for improving the validity of the questionnaire for men are offered.

Sexual harassment is a societal issue that largely affects individuals in the workplace. Unfortunately, it is all too common in the U.S. military, with one broad survey indicating 78% of women and 38% of men on active duty reported some type of sexual harassment during the course of one year (Bastian, Lancaster, & Reyst, 1996). While harassment can range from crude and offensive behaviors to sexual coercion, the extant literature shows a pattern of psychological and physical ailments associated with all forms of harassment, including depression, posttraumatic stress disorder, alcohol abuse, and somatic complaints (Murdoch & Nichol, 1995; Skinner, Kressin, Frayne, Tripp, Hankin, Miller, & Sullivan, 2000; Kang, Delager, Mahan, & Ishii., 2005; Vogt, Pless, King, & King, 2005). These adverse consequences can affect both men and women. However, most of the focus on harassment has been of women by men. To this end, most measures have been developed based on women's experiences of male harassment.

The best known of these, the Sexual Experiences Questionnaire (SEQ) (Fitzgerald, Shullman, Bailey, Richards, Swecker, Gold, et al., 1988) is a suite of closely related self-report inventories (cf. Gutek, Murphy, & Douma 2004) designed to assess sexual harassment in a variety of settings. The Sexual Harassment Core Measure (SHCore) (Stark, Chernyshenko, Lancaster, Drasgow, & Fitzgerald, 2002) is an abbreviated SEQ derivative currently considered the “gold standard” for evaluating sexual harassment in the Armed

¹Address correspondence to Dr. M. K. Reddy, Alpert Medical School of Brown University, Department of Psychiatry and Human Behavior, Providence Veterans Affairs medical Center, 830 Chalkstone Avenue, Building 32, Providence Rhode Island, (madhavi_reddy@brown.edu).

Forces (Lipari & Lancaster 2003). However, the SHCore was primarily generated on the basis of female troops' experiences of sexual harassment (Fitzgerald, Magley, Drasgow, & Waldo, 1999). Not surprisingly, several have questioned the SEQ and its several derivatives' saliency and applicability to men (Berdahl, Waldo, & Magley, 1996; Waldo, Berdahl, & Fitzgerald, 1998).

As a result of problems with the SHCore's temporal stability and lack of sensitivity, a "best-performing" SHCore version was created for use by the authors that combined some items rewritten to express plain language and some that used the SHCore's original wording. The rewritten items attempted to clarify that both men and women could harass other men. Items were selected to maximize the test's temporal reliability and substantive case-finding for both men and women. This "best-performing" version also deleted SEQ items that Donovan and Drasgow (1999) had identified as functioning differently across the sexes.

Besides concerns about how consistently various SEQ derivatives perform across the sexes, different analyses have identified slightly different factors structures across samples. For example, using an earlier SEQ version, a three-factor structure emerged in a university sample of student women (Fitzgerald, et al., 1988). These factors included "gender harassment" (hostile, insulting verbal and nonverbal behaviors), "unwanted sexual attention" (verbal and nonverbal behaviors including touching and sexual imposition), and "sexual coercion" (threats and bribes in exchange for sexual favors). In a large sample of military women, however, a four-factor structure emerged containing four factors: sexist hostility, sexual hostility, and the usual unwanted sexual attention and sexual coercion factors (Fitzgerald, et al., 1999). Sexist hostility refers to one being discriminated against based on one's sex, while sexual hostility refers to more explicitly sexual behaviors. Male troops' responses were later mapped to a structure like the women's, but only after deleting all items pertaining to sexual coercion and assault (Fitzgerald, et al., 1999). Thus, it is unclear what factor structure would have emerged for men had those items been retained.

Given inconsistencies found in the factor structure of earlier versions of the SEQ and the uncertain generalizability of women's findings to men, the factor structure of the "best-performing" SHCore measure was examined for men and women using exploratory factor analysis.

Method

The authors' Human Studies Subcommittee reviewed and approved all aspects of the study's protocol.

Participants

Between May and August 2001, all 701 TRICARE and CHAMPUS military enrollees within a large Midwestern VA medical facility's catchment area were mailed a 13-page questionnaire, \$5 incentive, and cover letter describing the study's risks and benefits. TRICARE and CHAMPUS are health care plans for U.S. military members and their dependents. Respondents to the study did not include dependents, only active duty or retired military personnel. At two-week intervals, non-respondents were sent a postcard reminder

followed by two additional copies of the questionnaire. Return of a completed survey signified participants' consent to take part in the study. The response rate was 76% ($n = 530$). Fifteen cases with missing data and 45 respondents who did not list their sex were removed, resulting in a sample of 181 women and 289 men. Of the women, 84.5% identified as white, 7.2% as African-American, and 3.3% as Hispanic; 45.9% were married; and the mean age was 41.6 yr. ($SD = 8.7$). Among the men, ethnic makeup was similar to women, but 70.6% of men were married and the mean age was 44.9 yr. ($SD = 11.4$). About one-third of the sample was still on active duty; the remainder was military veterans. Women had served an average of 11.8 yr. in the military ($SD = 7.7$), and men, an average of 15 yr. ($SD = 8.2$). Sixty-three percent of women and 73% of men reported having at least two years of college credits, with 12% of men and 23% of women reporting a four-year college degree.

Measure

Technically, the Department of Defense does not consider work-related sexual assault to be sexual harassment (Lipari & Lancaster, 2003). However, their stance runs counter to most legal scholars' and social theorists' conceptualizations of sexual harassment (e.g. Bargh, Raymond, Strack, & Pryor, 1995; Wolfe, Sharkansky, Read, Dawson, Martin, & Ouimette, 1998; McDermut, Haaga, & Kirk, 2000; Avina & O'Donohue 2002). In keeping with these scholars' conceptualizations, the "best-performing" SHCore measure with two additional SEQ items pertaining to attempted and completed sexual assault was included. The more inclusive measure is referred to as the BP-SHCore+ ("Best-performing" SHCore *plus* sexual assault items). In earlier work, the BP-SHCore+ had good internal consistency reliability (Cronbach's $\alpha = .87$) for both men and women.

Results

In this sample, internal consistency was $\alpha = .94$ overall, $\alpha = .94$ for women, and $\alpha = .88$ for men. Endorsement rates of each item differed by sex, with women endorsing each behavior twice as often as men (see Tables 1 and 2).

Exploratory factor analyses were conducted separately for men and women using principal axis factoring with oblique rotation. The Kaiser criterion, which calls for extracting all factors with eigenvalues greater than 1, was the criterion for the number of factors to extract. The women's sample produced a three-factor structure (Table 1) that explained 53% of the variance in women's responses, while a four-factor structure emerged for men (Table 2) and explained 58% of the variance in their responses. Most items loaded similarly to the three-factor structure presented by Fitzgerald and colleagues (1999), but there were a few differences. For women, two items originally labeled as unwanted sexual attention by Fitzgerald, et al., 1999 ("kept trying to go out with you ..." and "kept trying to have a sexual romance with you ...") loaded most strongly on the sexual hostility factor, though both also loaded substantially on the other two factors. For men, these two items formed their own factor, which was named "persistent unwanted advances," and did not load on any other factors. For men, one item labeled unwanted sexual attention by Fitzgerald, et al., 1999 ("touched you in a sexual way") loaded most strongly with the sexual hostility factor, though it loaded almost as strongly on the sexual coercion factor. Originally labeled sexual coercion

by Fitzgerald, *et al.*, the item, “treated you badly for refusing sex,” loaded predominantly on men’s unwanted sexual attention factor, though it also had substantial loadings on the sexual coercion and persistent unwanted advances factor (1999).

Discussion

The purpose of the present study was to examine whether a sexual experiences questionnaire designed to maximize temporal stability and substantive case-finding in men would have a factor structure similar to that found in women. Unfortunately, despite modifications to the SHCore, findings showed persistent sex differences. In turn, results raise questions about the original SHCore’s generalizability across the sexes. The results suggest that a three-factor structure may not be the best way to conceptualize sexual harassment experienced by military men. In addition to the more usual domains of sexual hostility, unwanted sexual attention, and sexual coercion, men’s responses to the BP-SHCore+ were also explained by a fourth factor related to “persistent unwanted advances.” It was also found that several items originally described by Fitzgerald, *et al.* (1988) as tapping into an “unwanted sexual attention” domain loaded more strongly on other factors for men. These differences from previously reported factor structures are no doubt related to the fact that men’s responses to the sexual coercion and sexual assault items were not excluded in the present analyses.

With these items included, a closer examination of the four-factor structure suggests that men’s responses to the BP-SHCore+ mapped to an underlying structure of verbal behaviors (sexual hostility), physical behaviors (unwanted sexual attention), quid pro quo demands for sexual favors (sexual coercion) and “approach-based” behaviors (persistent unwanted advances) (Stockdale, Visio, & Batra, 1999).² Several items also held substantial loadings on more than one factor, suggesting that the behaviors they measured tended to occur within a variety of sexual harassment contexts for men. Particularly, the item, “Touched you in a sexual way,” loaded roughly evenly across all four factors.

Women’s responses showed that the “persistent unwanted advances” items loaded primarily on the sexual hostility factor, but also had substantial loadings on unwanted sexual attention and sexual coercion. In contrast, men’s responses were uniquely salient to the persistent unwanted advances factor. While there are many possible explanations for this finding, including chance, two particularly merit attention. First, persistent unwanted advances may represent a unique phenomenon for military men that tend not to co-occur with other sexually harassing behaviors. Second, for men, the items’ wording may have confused pleasurable experiences with unpleasurable ones, resulting in a distinct factor. For example, heterosexual men tend to find “approach-based” behaviors, such as sexual come-ons and repeated requests for dates, flattering and enjoyable when women are the initiators (Stockdale, *et al.*, 1999); they tend to have a very different reaction when other men are the initiators, however.

²Approach-based harassment consists of unwanted behaviors that tend to imply sexual attraction and may function to initiate a relationship.

In general, individuals tend to judge behaviors as more harassing when they are perpetrated by men towards women than when women commit them against men (Gutek, Morasch, & Cohen, 1983; Waldo, et al., 1998). However, very few investigators have examined the effects of same-sex sexual harassment on men. Among those who have, Faley, Knapp, Kustis, Dubois, & Young (2006) estimated that the per-incident cost of sexual harassment of men by men in the Army was nearly 10 times that associated with women harassing women (Faley, et al., 2006). Consistent with this, Dubois, Knapp, Faley, and Kustis (1998) concluded from a broad-based survey of military troops that men harassed by other men reported significantly more pervasive and severer consequences than men harassed by women.

Unfortunately, the SHCore does not specify the initiator's sex for the persistent unwanted advances items, and the authors failed to correct this error in the revision. Consequently, men's responses may have reflected both positively valenced or neutrally valenced events (when men were "approached" by women) and negatively valenced events (when they were "approached" by other men). In contrast, since women tend to find these behaviors demeaning and threatening, regardless of the initiator's sex (Gutek, et al., 1983), likely most of their responses reflected aversive experiences. To test this hypothesis further, it is recommended that future SHCore versions use separate questions to ask about male initiators and female initiators of persistent, unwanted advances. Factor analyses could then be used to see if items' loading patterns differ according to the perpetrator's sex and respondents' sex.

Although only three factors emerged from the exploratory factor analysis of women's data, compared to four for men, an underlying structure related to verbal behaviors, physical behaviors, and quid pro quo demands for sexual favors also explained well the women's responses to the BP-SHCore+. With the exception of the "persistent unwanted advances" items, already discussed above, the women's 3-factor structure aligned quite closely to that originally reported by Fitzgerald, et al. (1988). However, as with the men, several items had substantial loadings across multiple factors, suggesting that these behaviors occurred within a variety of sexual harassment contexts.

Although the BP-SHCore+ rectified some deficiencies in the original SHCore, more work is needed to create a survey that adequately captures both men and women's sexual harassment experiences. To better understand the implications of the fourth factor that emerged from the analysis of men's data, if any, investigators are urged to employ more qualitative work to better explicate how men appraise and experience potentially sexually harassing behaviors. Although the present paper has yielded some useful information in this regard, it has also shown that much more needs to be done. Sexual harassment, as currently understood, is not rare among men—particularly among military men. As with women, sexual harassment has been associated with decreased productivity at work, anxiety, and depression in men (Magley, Waldo, Drasgow, & Fitzgerald, 1999). The goal, therefore, should be the development of measures that perform as well in men as they do in women.

Limitations and Conclusion

That the BP-SHCore+ incorporates simpler wording is an advantage. However, by changing the wording of some items, new ambiguities may have been introduced. Also, the present sample was unique in that the individuals had sought medical services in the past and probably were not representative of U.S. troops in general. For example, the sample was relatively older and more educated than most U.S. troops, and Marines were underrepresented. While the study's response rate was excellent, it did not preclude non-response bias.

Despite these limitations, the present study is one of the few to report on the psychometric properties of men's responses to a SEQ version. It is understood that the authors are not the first to critique the SEQ and its versions; for a thorough review, see Gutek, et al (2004). However, the authors agree with Gutek, et al. (2004) assertion that the SEQ (and its many versions) is a work in progress. Particularly in military populations, more research is needed to produce a more universally applicable measure of sexual harassment.

Acknowledgments

Dr. Murdoch is a Core Investigator in the Center for Chronic Disease Outcomes Research, a Department of Veterans (VA) Affairs Health Services Research and Development Service (HSR&D) Center of Excellence. This manuscript was funded by VA HSR&D grant IIR-96-014.

Appendix.

Stem: Please indicate whether each of these occurred during your military service: A co-worker or supervisor ...

Original Factor Assignment by Fitzgerald et al (1999)	Item #	SEQ Item
SH	1	Told sexual stories or jokes that were offensive to you?
SH	2	Tried to talk "sexy" with you when you didn't want to? *
SH	3	Made offensive remarks about your appearance, body, or sexual activities
SH	4	Made gestures or used body language of a sexual nature which embarrassed or offended you?
SH	5	Made crude comments about your body? *
SH	6	Made crude comments about how you looked? *
SC	15	Treated you badly for refusing to have sex with him/her? *
SC	16	Implied faster promotions or better treatment if you were sexually cooperative?
SC	9	Made you feel like you were being bribed with some sort of reward or special treatment to engage in sexual behavior?
SC	10	Made you feel threatened with some sort of retaliation for not being sexually cooperative (for example, by mentioning an upcoming review?)
SC	17	<u>Tried</u> to have sex with you against your will, but didn't succeed? *
SC	18	<u>Made</u> you have sex with him/her even though it was against your will? *

Original Factor Assignment by Fitzgerald et al (1999)	Item #	SEQ Item
USA	11	Touched you in a sexual way? *
USA	12	Tried to stroke you when you didn't want him/her to? *
USA	13	Tried to fondle you when you didn't want him/her to? *
USA	14	Tried to kiss you when you didn't want him/her to? *
USA	7	Kept trying to go out with you, even after you said you didn't want to? *
USA	8	Kept trying to have <u>sexual</u> romance with you, even after you said you didn't want to? *

Note.— SH = Sexist Hostility; USA = Unwanted Sexual Attention; SC = Sexual Coercion Response options were 1: Never, 2: Once, 3: More than Once.

* Wording modified from the original.

References

- Avina C, & O' Donohue W (2002) Sexual harassment and PTSD: is sexual harassment diagnosable trauma? *Journal of Traumatic Stress*, 15, 69–75. [PubMed: 11936724]
- Bargh JA, Raymond P, Strack F, & Pryor J (1995) Attractiveness of the underling: an automatic power: sex association and its consequences for sexual harassment and aggression. *Journal of Personality and Social Psychology*, 68, 768–781. [PubMed: 7776181]
- Bastian LD, Lancaster AR, & Reyst HE (1996) Department of Defense 1995 Sexual Harassment Survey. Arlington, VA: U.S. Department of Defense Manpower Data Center.
- Berdahl J, Waldo C, & Magley V (1996) The sexual harassment of men? Exploring the concept with theory and data. *Psychology of Women Quarterly*, 20, 527–547.
- Donovan MA, & Drasgow F (1999) Do men's and women's experiences of sexual harassment differ? An examination of the differential test functioning of the Sexual Experiences Questionnaire. *Military Psychology*, 11, 265–282.
- DuBois CL, Knapp DE, Faley RH, & Kustis GA (1998) An empirical examination of same- and other-gender sexual harassment in the workplace. *Sex Roles*, 39, 731–749.
- Faley RH, Knapp DE, Kustis GA, Dubois CLZ, & Young J (2006) Estimating the organizational costs of same-sex sexual harassment: the case of the US Army. *International Journal of Intercultural Relations*, 30, 557–577.
- Fitzgerald LF, Magley VJ, Drasgow F, & Waldo CR (1999) Measuring sexual harassment in the military: the Sexual Experiences Questionnaire (SEQ-DoD). *Military Psychology*, 11, 243–263.
- Fitzgerald LF, Shullman SL, Bailey N, Richards M, Swecker J, Gold Y, Ormerod M, & Weitzman L (1988) The incidence and dimensions of sexual harassment in academia and the workplace. *Journal of Vocational Behavior*, 32, 152–175.
- Gutek BA, Morasch B, & Cohen AG (1983) Interpreting social-sexual behavior in a work setting. *Journal of Vocational Behavior*, 22, 30–48.
- Gutek BA, Murphy RO, & Douma B (2004) A review and critique of the Sexual Experiences Questionnaire (SEQ). *Law and Human Behavior*, 28, 457–482. [PubMed: 15499825]
- Kang H, Dalager N, Mahan C, & Ishii E (2005) The role of sexual assault on the risk of PTSD among Gulf War Veterans. *Annals of Epidemiology*, 15, 191–195.
- Lipari R, & Lancaster A (2003) Armed forces 2002 sexual harassment survey (No. 2003-026). Arlington, VA: U. S. Department of Defense Manpower Data Center.
- Magley VJ, Waldo CR, Drasgow F, & Fitzgerald LF (1999) The impact of sexual harassment on military personnel: is it the same for men and women? *Military Psychology*, 11, 283–302.
- McDermut JF, Haaga DA, & Kirk L (2000) An evaluation of stress symptoms associated with academic sexual harassment. *Journal of Traumatic Stress*, 13, 397–411. [PubMed: 10948481]

- Murdoch M, & Nichol K (1995) Women veterans experiences with domestic violence and with sexual harassment while they were in the military. *Archives of Family Medicine*, 4, 411–418. [PubMed: 7742963]
- Skinner K, Kressin N, Frayne S, Tripp T, Hankin C, Miller D, & Sullivan ML (2000) The prevalence of military sexual assault among female veterans' administration outpatients. *Journal of Interpersonal Violence*, 15, 291–310.
- Stark S, Chernyshenko OS, Lancaster AR, Drasgow F, & Fitzgerald LF (2002) Toward standardized measurement of sexual harassment: shortening the SEQ-DoD using item response theory. *Military Psychology*, 14, 49–72.
- Stockdale MS, Visio M, & Batra L (1999) The sexual harassment of men. Evidence for a broader theory of sexual harassment and sex discrimination. *Psychology, Public Policy, and Law*, 5, 630–664.
- Vogt DS, Pless AP, King LA, & King DW (2005) Deployment stressors, gender, and mental health outcomes among Gulf War I Veterans. *Journal of Traumatic Stress*, 18, 115–127. [PubMed: 16281203]
- Waldo C, Berdahl J, & Fitzgerald L (1998) Are men sexually harassed? If so, by whom? *Law and Human Behavior*, 22, 59–79. [PubMed: 9487791]
- Wolfe J, Sharkansky EJ, Read JP, Dawson R, Martin JA, & Ouimette PC (1998) Sexual harassment and assault as predictors of PTSD symptomatology among US female Persian Gulf War military personnel. *Journal of Interpersonal Violence*, 13, 40–57.

Table 1.

Summary of Exploratory Factor Analysis Results for BP-SHCore+ in Women using Maximum Likelihood Estimation (N = 181)

Item	Percentage Endorsing Item	Sexual Hostility	Sexual Coercion	Unwanted Sexual Attention
Made crude comments about how you looked	47.0%	.82	.29	.10
Made crude comments about your body	46.4%	.79	.29	.12
Made offensive remarks about your appearance, body, or sex life	56.4%	.78	.16	.28
Tried to talk sexy	55.8%	.76	.16	.33
Made gestures of a sexual nature	53.0%	.76	.23	.24
Told sexual stories or jokes	65.7%	.64	.12	.20
Kept trying to go out with you	46.4%	.60	.33	.40
Kept trying to have a sexual romance	39.2%	.50	.42	.48
Implied faster promotions or better treatment if you were sexually cooperative	9.9%	.17	.83	.10
Made you feel threatened with some sort of retaliation	16.6%	.21	.82	.21
Treated you badly for refusing to have sex	20.4%	.26	.82	.24
Made you feel like you were being bribed	17.7%	.17	.78	.14
Tried to fondle you	33.1%	.32	.23	.80
Tried to kiss you	37.0%	.23	.18	.79
Tried to stroke you	37.6%	.44	.26	.73
Touched you in a sexual way	43.6%	.49	.27	.61
Made you have sex even though it was against your will	9.9%	.02	.04	.57
Tried to have sex with you, but didn't	17.1%	.09	.52	.57

Table 2.

Summary of Exploratory Factor Analysis Results for BP-SHCore+ in Men Using Maximum Likelihood Estimation (N = 289)

Item	Percentage Endorsing Item	Sexual Hostility	Unwanted Sexual Attention	Sexual Coercion	Persistent Sexual Advances
Made offensive remarks about your appearance, body, or sex life	29.1%	.85	.10	.08	.18
Made crude comments about your body	23.8%	.84	.08	.11	.27
Made crude comments about how you looked	26.2%	.83	.05	.09	.29
Made gestures of a sexual nature	28.3%	.78	.14	.21	.03
Told sexual stories or jokes	28.7%	.64	.07	.11	-.05
Tried to talk sexy	27.4%	.59	.15	.27	.28
Touched you in a sexual way	21.1%	.38	.24	.35	.20
Tried to have sex with you, but didn't	7.4%	.14	.90	.01	.20
Tried to fondle you	14.5%	.15	.82	.23	.32
Made you have sex even though it was against your will	4.3%	-.03	.80	.03	-.01
Tried to stroke you	17.2%	.30	.66	.09	.25
Treated you badly for refusing to have sex	9.6%	.06	.60	.40	.44
Tried to kiss you	16.2%	.05	.60	.49	.37
Implied faster promotions or better treatment if you were sexually cooperative	4.0%	.02	-.08	.87	.16

Item	Percentage Endorsing Item	Sexual Hostility	Unwanted Sexual Attention	Sexual Coercion	Persistent Sexual Advances
Made you feel threatened with some sort of retaliation	7.9%	.27	.04	.81	.21
Made you feel like you were being bribed	8.3%	.14	.53	.70	.09
Kept trying to go out with you	21.1%	.17	.08	.10	.91
Kept trying to have a sexual romance	17.9%	.06	.25	.26	.86