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Differences in Sexual Guilt and Desire in East Asian and Euro-Canadian Men

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Differences in sexual desire between individuals of East Asian and European descent are well-documented, with East Asian individuals reporting lower sexual desire. The mechanisms that underlie this disparity have received little empirical attention. Recent research has found that sex guilt, “a generalized expectancy for self-mediated punishment for violating or for anticipating violating standards of proper sexual conduct” (Mosher & Cross, 1971, p. 27), mediates the relationship between culture and sexual desire in East Asian and Euro-Canadian women. The goal of this study was to explore this role of sex guilt in men. Male Euro-Canadian (n = 38) and East Asian (n = 45) university students completed online questionnaires. The East Asian men reported significantly lower sexual desire and significantly higher sex guilt. Sex guilt was a significant mediator of the relationship between ethnicity and sexual desire, as well as a significant mediator between mainstream acculturation and sexual desire. Among the East Asian men, mainstream acculturation was significantly and negatively correlated with sex guilt such that increasing mainstream acculturation was associated with less sex guilt. The diagnostic and clinical implications of the findings are discussed.

Compared to low sexual desire in women, which has received considerable empirical attention, studies of the equivalent concern in men have been relatively scarce. One question that has been neglected pertains to cultural differences in sexual desire in comparisons of men of East Asian and European descent. In particular, although there is evidence of lower sexual desire among East Asian men compared to those of European descent (Laumann et al., 2005), the meaning of these ethnic differences in desire is, at present, unclear. Although the consistently lower levels of desire found among East Asian men may indeed reflect less interest in sex, the possibility remains that such group differences are an artifact of the measures used to quantify desire such that Western notions of sexual desire may not hold for those from other ethnic groups. Moreover, the means by which culture influences sexual desire remain unclear. The goal of this study was to explore sex guilt as a mediating variable in the relationship between culture and sexual desire in East Asian and

European men. In this study, “*East Asian*” was used as a cultural, and not a geographical, term, and encompasses Chinese, Japanese, and Korean groups.

Estimates of the prevalence of low desire in men range from 1.3% to 41% (Frank, Anderson, & Rubinstein, 1978; Fugl-Meyer, Fugl-Meyer, & Sjogren, 1999; Laumann, Glasser, Neves, Moreira, & the GSSAB Investigators’ Group, 2009; Laumann et al., 2005; Laumann, Paik, & Rosen, 1999; Mercer et al., 2003; Najman, Dunne, Boyle, Cook, & Purdie, 2003), depending on the persistence of the problem, the frequency with which it occurs, and the age of the participants. For instance, 17% of the male participants aged 16 to 44 years in the U.K.-based National Survey of Sexual Attitudes and Lifestyles reported a lack of sexual interest (Mercer et al., 2003). However, this proportion fell to 1.8% when it was limited only to those complaints that lasted at least six months in the past year. In the Global Study of Sexual Attitudes and Behaviors (GSSAB), which surveyed 13,618 men aged 40 to 80 years living in 29 countries, estimates of the prevalence of lack of sexual interest ranged from 12.5% to 28% in various world regions (Laumann et al., 2005). These figures similarly fell when including only those who reported frequently experiencing a lack of sexual interest, with 1.3% to 3.1% falling into this category. Studies that have examined age-related changes in sexual desire have

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typically found that the prevalence of low sexual desire significantly increases with age (Araujo, Mohr, & McKinlay, 2004; Fugl-Meyer et al., 1999; Laumann et al., 2005; Laumann et al., 1999), although others have found only a modest association between age and desire (Najman et al., 2003).

There are also a small number of studies that have found cross-cultural differences in sexual desire in men. In a study of male university students, Brotto, Woo, and Ryder (2007) found that Euro-Canadian men scored significantly higher than East Asian men on the *Drive* subscale of the Derogatis Sexual Functioning Inventory (Derogatis & Melisaratos, 1979), indicating greater sexual interest among the Euro-Canadian men, although the authors did not provide prevalence estimates of low desire in the respective ethnic groups. Data from the GSSAB revealed that lack of sexual interest was more common in East Asia and Southeast Asia than in Europe and the non-European West, both when considering all men who endorsed the presence of the problem as well as those who indicated experiencing the problem at least periodically (Laumann et al., 2005). Overall, 19.6% of men in East Asia and 28% of men in Southeast Asia reported lack of sexual interest compared to about 13% in Europe and 17.6% in the non-European West. The corresponding figures for men who reported periodic or frequent lack of sexual interest were 12.1% in East Asia, 20.3% in Southeast Asia, 6.5% in Europe, and 9.5% in the non-European West.

These cultural differences in men's sexual desire are congruent with a larger literature that has examined culture-linked variations in many aspects of sexuality in both men and women. Almost without exception, this research has found significant differences in sexuality between individuals of European and those of East Asian descent. These disparities have been found in domains ranging from sexual knowledge to sexual attitudes, sexual function, age of sexual debut, and repertoire of sexual behaviors, with East Asian individuals demonstrating more sexually conservative propensities than their European counterparts across all of the domains that have been studied. East Asian individuals demonstrate significantly less accurate sexual knowledge (Brotto, Chik, Ryder, Gorzalka, & Seal, 2005; Meston, Trapnell, & Gorzalka, 1998; Woo, Brotto, & Gorzalka, 2009) and more conservative attitudes toward a range of sexuality-related topics including homosexuality, casual sex, and gender role traditionality (Ahrold & Meston, 2010) compared to those of European ancestry. East Asian individuals have also been found to report significantly lower sexual functioning (Brotto et al., 2005; Cain et al., 2003; Laumann et al., 2005; Woo, Brotto, & Gorzalka, 2011a, 2011b), later age at sexual debut (Cavazos-Rehg et al., 2009; Meston & Ahrold, 2010; Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998), and a more limited repertoire of sexual activities

(Meston & Ahrold, 2010; Meston et al., 1998; Tang, Lai, & Chung, 1997; Woo et al., 2009).

Although persons of East Asian descent have consistently endorsed lower levels of sexual desire according to measures that tap traditionally Western conceptions of the construct, what is less clear are the mechanisms by which culture exerts its effects on sexual desire. Speculations about mechanisms are widespread; however, to date we are aware of only two published studies that have empirically examined underlying mechanisms that may explain the relationship between culture and sexual desire. Woo et al. (2011b) recently examined the role of sexual conservatism and sex guilt in the relationship between culture and sexual desire in East Asian and Euro-Canadian female university students. Whereas both sexual conservatism and sex guilt mediated the relationship between ethnic group and sexual desire in the sample as a whole, sex guilt alone mediated the relationship between extent of Westernization and sexual desire among the subsample of East Asian women. Based on these findings, Woo et al. (2011b) concluded that the specific concept of sex guilt has more utility than the broader notion of sexual conservatism in accounting for cultural differences in sexual desire among women. Most recently, Woo et al. (2011a) also found that in a community sample of East Asian and Euro-Canadian women, sex guilt significantly mediated the association between community group (whether East Asian or not) and sexual desire.

As a personality trait, sex guilt has been characterized as "a generalized expectancy for self-mediated punishment for violating or for anticipating violating standards of proper sexual conduct" (Mosher & Cross, 1971, p. 27). Although conceived of as a personality trait, this definition also encompasses an affective element such that individuals may experience the emotion of guilt following a perceived violation of internalized sexual standards. The limited research that has compared ethnic groups on sex guilt has found cultural differences as well, with East Asian individuals reporting significantly greater sex guilt than their European descent counterparts (Abramson & Imai-Marquez, 1982; Woo et al., 2011a).

Given the significant ethnic difference in level of sexual desire among men of East Asian and European ancestry, and the relative dearth of studies attempting to understand this disparity, the primary aim of this study was to examine whether sex guilt plays a similar mediating role in the relationship between ethnicity and sexual desire in men as it does in women (Woo et al., 2011a, 2011b). Although there may be a general trend toward a decline in sex guilt over recent decades (Janda & Bazemore, 2011), gender differences remain, with men consistently reporting significantly lower levels of sex guilt than women (Abramson & Imai-Marquez, 1982; Mosher, 1973; Plaud, Gaither, & Weller, 1998). This raises the possibility that there may be significant

differences between men and women in how sex guilt, culture, and sexual desire interact. This study sought to clarify these interrelationships in a sample of men of East Asian and European ancestry.

Acculturation has been defined as a process of change that occurs when an individual moves to a new culture and incorporates information about and experiences with the new culture into their self-identity (Ryder, Alden, & Paulhus, 2000). Acculturative changes may take place in various domains of an individual's self-identity, including attitudes, behaviors, and values. Bi-dimensional acculturation—in which degree of affiliation with the culture of birth or upbringing (heritage acculturation) is considered to vary independently of degree of affiliation with the new culture (mainstream acculturation)—offers important insights into the effects of culture on sexuality between individuals belonging to the same ethnic group (Brotto et al., 2005). Therefore, a secondary aim of this study was to examine whether sex guilt mediates any effects of acculturation on sexual desire within the East Asian group alone.

Method

Participants

East Asian and Euro-Canadian male university students, who were 18 years of age and older and fluent in English, were eligible to participate. Of the 83 men who participated, 38 self-identified as Euro-Canadian, and 45 self-identified as East Asian. The Euro-Canadian men were significantly older by 1.3 years than the East Asian men, $t(63) = 2.82, p < .01$, although the two ethnic groups did not differ in years of education, $t(79) = 1.40, p > .05$. Demographic data are shown in Table 1.

Table 1. Demographic Characteristics of Euro-Canadian ($n = 38$) and East Asian ($n = 45$) Participants

Variable	Euro-Canadian	East Asian
Mean age in years (<i>SD</i>)*	21.5 (2.4)	20.2 (1.7)
Place of birth (%)**		
Canada or United States	92.1	31.1
China/Hong Kong/Taiwan	0.0	66.7
Southeast Asia	0.0	2.2
Europe	2.6	0.0
Other	5.3	0.0
Years of residency in Canada (<i>SD</i>)**	18.3 (7.4)	12.4 (5.9)
Education in years (<i>SD</i>)	14.7 (1.2)	14.3 (1.1)
Mean acculturation score ^a (<i>SD</i>)		
Mainstream	NA	65.5 (10.6)
Heritage	NA	66.1 (12.9)

Note. Significant group differences at * $p < .01$ and ** $p < .001$.
^aScale range = 20–180.

Procedure

This study was publicized via an advertisement that was posted on the Web-based research participation system for the university's human subject pool. Students who wished to participate in this study clicked on a link that was embedded in the advertisement, and were redirected to the secure Web site where the online questionnaires were located. The consent form was presented on the first page of the study that was visible to participants. The purpose of the study was described as being to improve our understanding of the relationship between culture and sexuality. The consent form also provided information about study procedures. Only those participants who consented to participate clicked on the "Continue to Next Page" button and were granted access to the questionnaires. All participants were recruited from the human subject pool at a large Canadian university, and were given extra course credits for their participation in this study. All procedures were approved by the university's behavioral ethics review board.

Measures

Vancouver Index of Acculturation (VIA). The VIA (Ryder et al., 2000) is a 20-item, self-report questionnaire that assesses mainstream and heritage acculturation as separate dimensions of acculturation. Higher scores on the mainstream dimension indicate greater incorporation of Western culture norms into an individual's self-identity, and higher scores on the heritage dimension indicate greater affiliation with one's culture of origin or upbringing. The VIA consists of 10 domains, with one heritage and one mainstream item associated with each domain. The VIA encompasses domains such as participation in cultural traditions, choice of marital partner, enjoyment of entertainment, and maintenance or development of cultural practices. Both dimensions of the VIA were found to have good internal consistency in the East Asian validation sample (Cronbach's $\alpha = 0.92$ for heritage acculturation and 0.85 for mainstream acculturation).

International Index of Erectile Function (IIEF). The IIEF (Rosen et al., 1997) is a 15-item, self-report questionnaire that measures various domains of male sexual functioning, including sexual desire, erectile function, orgasmic function, intercourse satisfaction, and overall sexual satisfaction. In this study, we examined the sexual desire (e.g., "How often have you felt sexual desire"), intercourse satisfaction (e.g., "How much have you enjoyed sexual intercourse"), and overall sexual satisfaction (e.g., "How satisfied have you been with your sexual relationship with your partner") domains, where higher scores reflect higher levels of sexual desire, intercourse satisfaction, and overall satisfaction. This

domain has been found to have moderate test–retest reliability ($r = .71$) and moderate to good internal consistency (Cronbach's alphas range from 0.77–0.91).

Revised Mosher Guilt Inventory (RMGI). The RMGI (Mosher, 1988) is a self-report questionnaire that measures sex guilt, hostility guilt, and guilty conscience. It consists of 114 items arranged in a limited comparison format. In this format, items are arranged in sets of two, and participants rate their responses to each item on a seven-point Likert scale that ranges from 0 (*not at all true for me*) to 6 (*extremely true for me*) while evaluating the intensity of “trueness” within each pair of items. In this study, only the 50 items that comprise the sex guilt subscale were administered. Sample items include, “Sexual relations before marriage, in my opinion, should not be practiced” and “Masturbation is wrong and a sin.” The total score for the sex guilt subscale ranges from 0 to 300 and was computed by adding the scores obtained on all items, with some items reverse-scored. Higher scores on this measure reflect greater sex guilt. Internal consistency for the sex guilt subscale in this sample was high (Cronbach's $\alpha = 0.96$).

Data Analyses

All statistical analyses were conducted using SPSS Version 13.0 (Chicago: SPSS Inc.). *T* tests were conducted to compare the two ethnic groups on self-reported sexual desire and sex guilt. Among the East Asian men, Pearson correlations were conducted to examine the correlations among acculturation, sex guilt, and sexual desire.

Mediation analyses were carried out using the bootstrap procedure recommended by Shrout and Bolger (2002). This method was used because the causal process between ethnicity and sexual desire is temporally distal (i.e., the effect of culture on sexual desire is likely to be transmitted through a number of links in a causal chain and influenced by a number of different factors). Three thousand samples, with replacement, were used in each mediation analysis. To demonstrate a mediation effect with the bootstrap method, the indirect effect of

the initial variable (i.e., ethnicity or acculturation) on the outcome variable (i.e., sexual desire) is required to be statistically significant. An SPSS macro developed by Preacher and Hayes (2004) was used to carry out the mediation analyses.

Results

Ethnic Group Comparisons on Measures of Sexuality

A Bonferroni correction was applied in comparing the two ethnic groups on sexual desire and sex guilt by dividing the conventional alpha of 0.05 by two (the number of comparisons being made). Thus, ethnic differences were considered statistically significant only if $p < .025$. Compared to the East Asian men, the Euro-Canadian men scored significantly higher on the sexual desire subscale of the IIEF, indicating higher levels of sexual desire among the Euro-Canadian men, $t(77) = 4.21, p < .001$.

We then examined the correlation between sexual desire and both intercourse satisfaction and overall satisfaction, as measured by the IIEF. In both samples of men, sexual desire was significantly positively correlated with intercourse satisfaction, $r(78) = 0.571, p < .001$; and with overall satisfaction, $r(79) = .517, p < .001$, with no significant differences in the strength of these correlations between the two groups.

The East Asian men scored significantly higher on the sex guilt subscale of the RMGI, $t(67) = 3.43, p < .01$, indicating that the East Asian men reported significantly more sex guilt than the Euro-Canadian men (see Table 2).

Scores on the RMGI sex guilt subscale and IIEF sexual desire subscale were significantly and negatively correlated in both the Euro-Canadian men, $r(29) = -.37, p < .05$, and the East Asian men, $r(38) = -.49, p < .01$, indicating that more sex guilt was associated with lower sexual desire in both ethnic groups.

The Mediating Role of Sex Guilt in the Relationship between Ethnicity and Sexual Desire

The effect of ethnicity on sex guilt was demonstrated ($\beta = 37.03, p < .01$), indicating that East Asian ethnicity

Table 2. Ethnic Group Differences on Scores from the Sexual Desire Subscale of the International Index of Erectile Function (IIEF) and the Sex Guilt Subscale of the Revised Mosher Guilt Inventory (RMGI)

Variable	Euro-Canadian		East Asian		<i>t</i> (<i>df</i>)	<i>p</i>	Effect Size ^c
	M	SD	M	SD			
IIEF desire ^a	7.50	1.52	5.81	1.95	4.21 (77)	<.001	.97
RMGI sex guilt ^b	71.10	43.29	109.58	48.69	3.43 (67)	<.01	.84

Note. Higher scores denote greater sexual desire (IIEF) and higher sex guilt (RMGI).

^aBased on $n = 36$ Euro-Canadians and $n = 43$ East Asians.

^bBased on $n = 31$ Euro-Canadians and $n = 38$ East Asians.

^cEffect size (Cohen's d) was calculated as $d = (M_1 - M_2)/s$, where $s = \sqrt{[(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2]/(n_1 + n_2)}$.

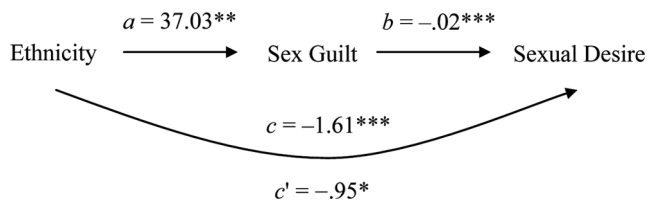


Figure 1. The mediating role of sex guilt in the relationship between ethnicity and sexual desire in Euro-Canadian and East Asian men. *Note.* *a* represents the effect of ethnicity on sex guilt, *b* represents the effect of sex guilt on sexual desire after controlling for the effect of ethnicity, *c* represents the direct effect of ethnicity on sexual desire, and *c'* represents the effect of ethnicity on sexual desire after controlling for sex guilt. * $p < .05$. ** $p < .01$. *** $p < .001$.

was associated with significantly higher sex guilt. The effect of sex guilt on sexual desire, holding ethnicity constant, was also significant ($\beta = -0.02$, $p < .001$), showing that increased sex guilt was associated with lower levels of sexual desire. The indirect effect of ethnicity on sexual desire, computed by multiplying the effect of ethnicity on sex guilt with the effect of sex guilt on sexual desire while controlling for ethnicity, was significant ($ab = -0.66$, $SE = 0.30$, 99% confidence interval [CI_{99}] = -1.65 , -0.07), indicating that sex guilt mediated the relationship between ethnicity and sexual desire (see Figure 1).

Effects of Acculturation (East Asian Men Only) on Measures of Sexuality

Among the East Asian men, there was a significant correlation between mainstream acculturation and RMGI sex guilt, $r(37) = -.38$, $p < .05$, such that greater mainstream acculturation was associated with lower levels of sex guilt. Mainstream acculturation was not significantly correlated with IIEF sexual desire ($p > .05$). Heritage acculturation was not significantly correlated with either IIEF sexual desire or RMGI sex guilt (all $ps > .05$).

The Mediating Role of Sex Guilt in the Relationship between Acculturation and Sexual Desire

There was a significant effect of mainstream acculturation on sex guilt ($\beta = -1.66$, $p < .05$), indicating that higher mainstream acculturation was associated with significantly less sex guilt. The effect of sex guilt on sexual desire, holding mainstream acculturation constant, was also significant ($\beta = -0.02$, $p < .001$), indicating that greater sex guilt was linked to lower sexual desire. The indirect effect of mainstream acculturation on sexual desire via sex guilt was significant ($ab = 0.04$, $SE = 0.02$, $CI_{95} = 0.005$, 0.080). Therefore, sex guilt mediated the relationship between mainstream acculturation and sexual desire among the East Asian men (see Figure 2).

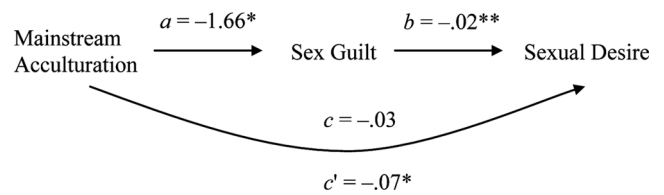


Figure 2. The mediating role of sex guilt in the relationship between mainstream acculturation and sexual desire in East Asian men. *Note.* *a* represents the effect of mainstream acculturation on sex guilt, *b* represents the effect of sex guilt on sexual desire after controlling for the effect of mainstream acculturation, *c* represents the direct effect of mainstream acculturation on sexual desire, and *c'* represents the effect of mainstream acculturation on sexual desire after controlling for sex guilt. * $p < .05$. ** $p < .001$.

When a mediation analysis was conducted with heritage acculturation as the predictor, the indirect effect of heritage acculturation on sexual desire via sex guilt was not significant ($ab = -0.003$, $SE = 0.01$, $CI_{95} = -0.03$, 0.02). Thus, sex guilt did not mediate the relationship between heritage acculturation and sexual desire.

Discussion

Ethnicity and Sexuality

Group comparisons revealed the Euro-Canadian men to have significantly less sex guilt than the East Asian men—a result that was consistent with our expectations and other research that has found greater sex guilt among Asian individuals, both in men (Abramson & Imai-Marquez, 1982) and women (Abramson & Imai-Marquez, 1982; Woo et al., 2011a, 2011b). Ethnic group differences in sexual desire were also in accord with our hypothesis and prior research on cultural differences in sexual desire, with the Euro-Canadian men reporting significantly higher sexual desire than the East Asian men (Brotto et al., 2005; Cain et al., 2003; Laumann et al., 2005). Interestingly, however, level of mainstream acculturation was not significantly correlated with sexual desire, as measured by the IIEF, in the East Asian men in this study. Although a near-significant correlation between mainstream acculturation and sexual desire was found in a large sample of university aged women (Woo et al., 2011b), a less robustly powered study on a community sample of East Asian women failed to find a significant association between desire and acculturation (Woo et al., 2011a). Because, as a group, East Asian men had lower levels of sexual desire than the Euro-Canadian group, this suggests that there may be more between-ethnicity differences in sexual desire compared to within-ethnicity differences. It is also possible, however, that this study was insufficiently powered to detect this association. Alternatively, it is also possible that the method used to index sexual desire (i.e., two items on the IIEF focusing

on frequency and severity of desire) was insufficient for adequately assessing sexual desire in East Asian men, and that a more comprehensive scale of desire may have allowed for such a relationship to emerge.

With respect to the mechanisms that underlie this ethnic disparity in sexual desire, mediation analysis revealed that sex guilt was a significant mediator of the relationship between ethnic group and sexual desire, such that East Asian ethnicity was associated with greater sex guilt, which, in turn, was linked to lower sexual desire. This finding is congruent with similar research in female university students (Woo et al., 2011b) and a community sample of women (Woo et al., 2011a), and indicates that sex guilt plays a similar role in the relationship between ethnicity and sexual desire in men as it does in women.

In addition to replicating similar results in women, this finding is noteworthy because standards of acceptable sexual conduct vary by gender in East Asian culture. Although East Asian culture has often been characterized by Western observers as being sexually conservative in general, there is evidence to suggest the existence of a double standard such that women are expected to adhere to more restrictive sexual standards than men. For example, one study of men in Hong Kong found greater tolerance of men than of women engaging in casual sex (Family Planning Association of Hong Kong, 2000). Another study conducted in Hong Kong found that more women than men believed that their relationships would remain unaffected if they discovered that their fiancées had had prior sexual partners (Liu, Ng, Zhou, & Haeberle, 1997). In contrast, the men in that study expected that their relationships would be irreparably damaged if they discovered the same of their female fiancées.

This pattern extends to the sexuality-related messages that parents convey to their children, with daughters receiving more prohibitive messages about abstinence until marriage, sex as an intimate activity that takes place within the context of a loving and committed relationship, and sex as a taboo topic, compared to sons (Kim & Ward, 2007). Indeed, it has been suggested that such parental communications about sexuality may explain the higher levels of sex guilt found among young East Asian women compared to their Euro-Canadian counterparts (Woo et al., 2011b).

Due to this sexual double standard, it might not only be expected that men would experience less sex guilt than women, but that the effects of sex guilt on sexual desire may be different in men and women. Interestingly, and consistent with other research on gender differences in sex guilt, the mean level of sex guilt reported by the men in this study is lower than that reported by women in other recent studies (Woo et al., 2011a, 2011b) that used the same measure of sex guilt, allowing for a direct comparison of levels of sex guilt across the two studies. This finding that sex guilt

mediates the relationship between ethnicity and sexual desire in men in the same way as it does in women indicates that sexual desire can be inhibited even with the relatively lower level of sex guilt found in East Asian men, and that the sexual double standard does not provide a protective effect against the impact of sex guilt on sexual desire in men.

Acculturation and Sexuality (East Asian Men Only)

In examining the effect of acculturation on sex guilt and sexual desire, mainstream acculturation was found to be significantly associated with sex guilt, such that East Asian men who were more mainstream acculturated reported less sex guilt. On the other hand, heritage acculturation was not significantly associated with sex guilt.

Mediation analysis revealed that sex guilt mediated the relationship between mainstream acculturation and sexual desire in the East Asian men, with more Westernized East Asian men reporting less sex guilt and greater sexual desire. This occurred, despite the finding that acculturation and sexual desire were not directly related in this group. On the other hand, sex guilt did not mediate the relationship between heritage acculturation and sexual desire. Again, these results replicated those found by Woo et al. (2011a, 2011b) in their samples of university and community women, respectively. Jointly, these findings suggest that whereas the effect of mainstream acculturation on sexual desire may be explained, at least in part, by acculturative effects on sex guilt, the degree of affiliation with the heritage culture is likely not related to sex guilt. Although speculative, it may be that heritage values/attitudes exert a more dominant effect on sex guilt than mainstream values/attitudes such that sex guilt is less likely to change as a function of relinquishing the heritage culture.

In general, an accumulating body of evidence supports the utility of considering cultural effects within a bi-dimensional acculturation model, whereby the influence of mainstream acculturation (i.e., Westernization) and heritage acculturation are considered orthogonally. Because length of time spent in the new culture may vary independently of level of acculturation (e.g., Brotto et al., 2005), our findings suggest that when considering sexual desire among East Asian men, one must take into account how sex guilt may be affected by their level of affiliation with the new culture. Specifically, extent of immersion into the mainstream culture might alleviate the intensity of sex guilt such that overall sexual desire is less inhibited. Because this effect of mainstream acculturation may not have necessarily been detected if the traditional proxy for acculturation (i.e., years in a new culture) were examined, our findings emphasize the importance of sexuality and culture researchers including measures of bi-dimensional acculturation in their research.

Limitations

There were limitations to this study that may affect the conclusions drawn. Because we drew from a university convenience sample, one must bear in mind that our findings may not be entirely generalizable to the larger population of men. It is possible that this sample's level of mainstream acculturation was higher compared to East Asian men in the general population, and we are making an assumption that the observed associations between culture, sex guilt, and sexual desire in this sample also hold for community men. There is also the limitation of the small sample size studied, which may lead to an overestimation of the magnitude of the observed associations. Finally, the measures of sexual desire and sex guilt that were used in this study have not been validated in East Asian populations. Although the IIEF has been linguistically validated and has been translated into 32 languages (Rosen, Cappelleri, & Gendrano, 2002), its psychometric properties, when used in East Asian individuals, remain unknown. These limitations suggest that the findings of this study need to be interpreted with caution, and emphasize the need for future research to study larger and more representative samples in order to better understand how sexual desire is experienced cross-culturally.

Clinical and Diagnostic Implications

As researchers and clinicians continue to debate the fate of our diagnostic nomenclature for the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed. [DSM-5]; see Binik, Brotto, Graham, & Segraves, 2010; Brotto, Graham, Binik, Segraves, & Zucker, 2011; Derogatis, Clayton, Rosen, Sand, & Pyke, 2011), these findings should be borne in mind when considering the construct of sexual desire. A recent critical review of the diagnosis of hypoactive sexual desire disorder in men found significant sex differences in the intensity and frequency of sexual desire such that, across studies, men consistently reported higher levels of sexual desire, fantasized more often, and desired sexual activity more frequently than women (Brotto, 2010). However, this review also emphasized the enormous within-sex variability in sexual desire, and qualitative research shows rather striking similarities in the ways in which men and women experience sexual desire (Janssen, McBride, Yarber, Hill, & Butler, 2008). Within the latter study, the broad categories of feelings about oneself, mood state, and feeling emotionally connected were identified by men themselves as significantly influencing their sexual desire. Insofar as sex guilt is an emotion that may be triggered in a given sexual scenario, it follows that sex guilt may be a potent inhibitor to men's sexual desire. Unfortunately, we are far from understanding cross-cultural differences in how sexual desire is experienced, and it may be that Western referents of sexual

desire (i.e., urge for sex and sexual fantasies; American Psychiatric Association, 2000) may be irrelevant to how sexual desire is experienced among East Asian individuals.

Evidence for cross-cultural variability in the experience of posttraumatic stress disorder symptoms has also led theorists to propose alterations in *DSM-5* criteria that account for this variability (Hinton & Lewis-Fernandez, 2010). Given the finding that East Asian men and women endorse significantly higher rates of sexual dysfunction than those from North America and Europe (Laumann et al., 2005), one must consider the possibility that this effect is an artifact of our Western-based measurement of sexual desire. The current finding that sex guilt significantly mediates desire in East Asian men lends support for this speculation that the experience of sexual desire is not a monolithic phenomenon.

The findings may also have implications for reproductive health behaviors. Another recent study of university-aged men found that the lower rates of physician-performed testicular examinations in East Asian men was accounted for by their higher rates of sex guilt (Woo, Brotto, & Gorzalka, 2010). Combined with data that show higher rates of sex guilt in East Asian men compared to their Euro-Canadian counterparts, these findings suggest that sex guilt may be an important variable to consider within the larger domain of reproductive health care of ethnic minority individuals.

This finding that sex guilt at least partially underlies cultural differences in sexual desire may denote a starting point for the development of an effective, evidence-based, psychological treatment for low sexual desire in men. Among women, treatment protocols that include cognitive-behavioral therapy as a key component have been found to be effective in improving sexual desire (McCabe, 2001; Trudel et al., 2001). Although the effectiveness of these treatments has not been studied in men, our results suggest that the inclusion of sex guilt as a treatment target in interventions may prove fruitful, especially for men who experience guilty feelings surrounding sexuality. Further research is clearly needed to evaluate the effectiveness of these treatments in alleviating sexual desire difficulties in men, as well as to assess the additional effect, if any, of incorporating a focus on sex guilt reduction.

Conclusion

The results of this study support the notion that sex guilt underlies cultural differences in sexual desire; and demonstrate that, regardless of gender differences in levels of sex guilt and sexual desire, sex guilt mediates the relationship between culture and sexual desire in men, as well as in women.

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