

Acculturation and Sexual Function in Canadian East Asian Men

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ABSTRACT

Introduction. Recent studies have demonstrated the importance of considering acculturation when investigating the sexuality of East Asian women in North America. Moreover, bidimensional assessment of both heritage and mainstream cultural affiliations provides significantly more information about sexual attitudes than simple unidimensional measures, such as length of residency in the Western culture.

Aim. The goal of this study was to extend the findings in women to a sample of East Asian men.

Main Outcome Measures. Self-report measures of sexual behaviors, sexual responses, and sexual satisfaction.

Methods. Euro-Canadian (N = 124) and East Asian (N = 137) male university students privately completed a battery of questionnaires in exchange for course credit.

Results. Group comparisons revealed East Asian men to have significantly lower liberal sexual attitudes and experiences, and a significantly lower proportion had engaged in sexual intercourse compared with the Euro-Canadian sample. In addition, the East Asian men had significantly higher Impotence and Avoidance subscale scores on the Golombok Rust Inventory of Sexual Satisfaction, a measure of sexual dysfunction. Focusing on East Asian men alone, mainstream acculturation, but not length of residency in Canada, was significantly related to sexual attitudes, experiences, and responses.

Conclusions. Overall, these data replicate the findings in women and suggest that specific acculturation effects over and above length of residency should be included in the cultural assessment of men's sexual health. **Brotto LA, Woo JST, and Ryder AG. Acculturation and sexual function in Canadian East Asian men. J Sex Med 2007;4:72–82.**

Key Words. Acculturation; Culture; East Asian Culture; Male Sexual Function; Sexual Dysfunction

Introduction

Human sexuality is very much influenced by culture, and East Asian discomfort with sexuality can be observed in myriad settings [1–3]. Discussions of a sexual nature are taboo in Chinese families, where older generations, having themselves received inadequate sex education, prefer not to talk about it [4]. Schools provide minimal sex education, and even health professionals shy away from discussing sexuality [5]. Sex is also considered a private issue in Japanese and Korean societies and is rarely discussed in

public [6,7]. This restrained sexuality is a result of the emphasis placed on propriety and compliance with strict moral and social codes in many Asian cultures [8]. Despite the cultural differences in sexual openness, a review of a quarter century of sexuality research published between 1971 and 1995 reveals that only 26% of research articles reported on the cultural attributes of the sample, with ethnicity included as a variable of interest in a mere 7% of the articles [9]. Whereas greater attention has been given to ethnicity in contemporary sexuality research, with twice as many recent articles including ethnicity as a vari-

able of interest compared with articles published before 1990, the absolute frequency with which ethnicity is included as a research variable remains low [9].

Given the increasing ethnic diversity in Canada and the United States, attention to culture is critical if we are to attain a more complete understanding of the factors that shape sexuality. Data from the 2001 Census show that 18% of Canada's population was foreign-born, and that Canadians listed more than 200 ethnic groups in answering the question on ethnic ancestry. In addition, the profile of immigrants to Canada has changed dramatically; whereas most immigrants until 1960 were from Europe, recent immigrants were most likely to be from Asia. In fact, 58% of the immigrants who arrived in Canada between 1991 and 2001 came from Asia, with the largest group comprising individuals from China [10]. It is therefore not surprising that individuals of Chinese origin form the largest visible minority group in Canada, accounting for 3.7% of the total population [11]. In the United States, individuals of Chinese origin account for 3.6% of the total population, and Asian population growth during the 1990–2000 period was more than three times the national average [12]. There is therefore an urgent need to gain a more complete understanding of the sexuality of individuals of Asian ancestry to facilitate the provision of culturally appropriate attention to sexuality.

The recently published large, multiethnic Study of Women's Health Across the Nation is likely the largest and most culturally inclusive study conducted in North America on sexual practices and health, with 3,262 women from Caucasian, African-American, Chinese, Japanese, and Hispanic backgrounds reporting on their sexual activities and functioning [13]. In another large-scale study, data for 11,161 men and women from the second British National Survey of Sexual Attitudes and Lifestyles were examined to investigate the frequency of risky sexual behaviors and negative sexual health outcomes in Caucasians and the largest ethnic minority groups in Britain-Caribbean, African, Indian, and Pakistani [14]. These two large-scale studies, together with other smaller ones that have examined cultural differences in relation to sexual behaviors and attitudes, have consistently found ethnic group differences in sexual behaviors, knowledge, attitudes, and function [15–20]. Without exception, persons of East Asian ancestry have been found to have less sexual knowledge, more conservative attitudes

toward sexuality, later onset of sexual intercourse, less sexual experience, and fewer sexual responses compared with all other ethnic groups that have been studied. In fact, ethnicity was found to be a better predictor of sexual behaviors than knowledge, attitudes, and beliefs about sexual activity related to HIV infection [16].

Although these studies have contributed substantially to our understanding of cultural differences in sexuality-related attitudes, beliefs, and behaviors of an individual from a different culture who moves into a new (e.g., North American or European) one, they have been limited to date. In particular, these studies have focused on group differences according to self-identified ethnicity and therefore do not take into account the more subtle effects of moving into a new culture on self-identity, a process known as acculturation. Acculturation is the process that occurs when an individual moves to another culture and attempts to integrate into the new culture by incorporating characteristics and values of the new culture into one's personality and self-identity. Attention to acculturation is crucial given the amazing cultural and geographic diversity among East Asian individuals in North America and the extent to which each individual assimilates and adopts Western values and customs as well as maintains ties with his/her culture of origin. The study of acculturation could provide valuable information that is overlooked by focusing entirely on ethnic group membership.

In studies that have considered the influence of acculturation on sexuality, length of residency in the new culture was commonly used as a proxy for degree of acculturation. However, acculturation level can only be inferred, not ascertained, by length of residency because this method of measuring acculturation does not take into account numerous factors that can influence integration into the North American culture. For instance, degree of involvement in one's ethnic community, amount of contact with North American people, amount of pre-immigration exposure to the Western culture, willingness to learn a new language, and openness to the customs and values of a different culture affect acculturation independently of how long an individual has lived in North America. Furthermore, the assumption implicit in using length of residency to approximate acculturation is that individuals who move to a new culture simultaneously relinquish their culture of origin (heritage culture), and assume the attitudes, behaviors, and values of the predominant culture

in the new setting (mainstream culture). In reality, it is questionable whether the heritage and mainstream cultures are truly opposite ends of the same dimension [21]. In contrast to length-of-residency measures, the bidimensional model of acculturation allows for the possibility that acculturating individuals may continue to maintain ties with the values, beliefs, and behaviors of their heritage culture while embracing many aspects of the mainstream culture [22].

Recently, it has been shown that the use of a validated measure of bidimensional acculturation, rather than dependence on duration of residence in the new culture, as an approximation of degree of acculturation significantly predicted the extent to which East Asian women in Canada adopted more liberal sexual attitudes [15,21]. Specifically, if an East Asian woman continued to maintain strong ties with her heritage culture, increasing mainstream acculturation did little to liberalize her sexual attitudes; conversely, increasing exposure to the North American culture led to the embracing of more liberal sexual attitudes if she relinquished her heritage culture to a certain degree. This is an example of a notable and subtle pattern of change in sexual attitudes in acculturating East Asian women that could not have been detected by length-of-residency measures. This study also found that whereas sexual desire and arousal were not significantly associated with length of residency in Canada, they were significantly and positively related to mainstream acculturation, a result that suggests that it was the adoption of North American culture, and not merely living in Canada, that led to reports of greater sexual desire and arousal [15]. Overall, these findings demonstrate that a bidimensional measure of acculturation, compared with solely measuring length of residency, can provide a more rich and textured understanding of changes in sexuality that occur when individuals move to a new culture.

The extent to which these findings generalize to men is unknown given that only female participants have been studied in this prior research that looked at bidimensional measures of acculturation and sexuality. However, in other cultural research that included gender differences, women, but not men, were found to be significantly influenced by mainstream acculturation on whether or not they had engaged in intercourse [23]. This raises the possibility that acculturation may influence the sexuality of men and women differently. To the best of our knowledge, the study by McLaughlin

et al. is the only one to date that has considered gender differences in the relationship between acculturation and sexuality transformation [23]. Further research will be necessary to gain a better understanding of how the sexuality of men and women undergoes transformation in response to encountering a new culture.

The goal of the current study is to replicate the study by Brotto et al., but in a sample of men [15]. As cited, this research has found that bidimensional acculturation was a strong predictor of sexual attitudes and experiences in East Asian women. The current study hypothesizes that acculturation toward Western ideologies, and distance from traditional cultural affiliation, might also increase liberalism of sexual attitudes in men and affect sexual responses (e.g., erection, ejaculation, sexual satisfaction, etc.). Three different types of cultural comparisons will be employed in this study: (i) between the self-identified ethnic group; (ii) using length of residency alone as a proxy for acculturation; and (iii) incorporating bidimensional acculturation that measures acculturation to the new culture and simultaneous affiliation with the previous culture. The findings have promise for leading to a better understanding of the relationship among acculturation, sexual attitudes, experiences, and responses in men, and have implications for the assessment, classification, and treatment of sexual difficulties.

Methods

Participants

First- and second-year undergraduate students from a large Canadian university were eligible to participate. Advertisement materials indicated that heterosexual orientation was an inclusion criterion. This is because research has suggested that having a double minority status (i.e., being Asian and gay) is associated with greater stigmatization than having a single minority status, and this may influence attitudes and behaviors toward sexuality [24]. A total of 291 men returned their questionnaires and, of them, 124 self-identified as Euro-Canadian and 137 self-identified as East Asian. The remaining 30 men identified other ethnic groups and were therefore excluded from all analyses. The largest East Asian group included those who self-identified as Chinese or Taiwanese (82%), with the others having a heritage culture as Japanese (0.7%), Korean (5%), Vietnamese (1.4%), Indonesian (7.7%), or an East Asian mix (3.2%). Because this study was advertised on a

Table 1 Demographic variables in Euro-Canadian and East Asian male participants

Variable	Euro-Canadian (N = 124)	East Asian (N = 137)
Mean age in years (SD)**	20.9 (3.6)	19.9 (1.9)
Birth country (% of each group)		
Canada or the United States	91.0	36.0
East Asia	1.5	55.0
South Asia	1.0	8.5
West Asia	0	0
Europe	5.6	1.0
South Africa	0	0
South America	1.0	0
Mean years in Canada (SD)***	19.6 (5.1)	13.1 (6.0)
Mean education in years (SD)***	13.6 (1.3)	13.0 (1.5)
Marital status (%)		
Unmarried	97.6	99.3
Common-law	0.8	0
Married	0.8	0.7
% currently in a relationship*	49.0	37.0
% ever in a relationship***	95.2	75.4
Mean longest relationship duration in months (SD)*†	15.8 (17.9)	11.6 (13.0)
Ethnicity of partner (%)		
Most recent***		
Euro-Canadian	86.0	18.1
East Asian	11.8	76.6
Other	2.2	5.3
Second most recent***		
Euro-Canadian	85.9	26.9
East Asian	8.4	73.1
Other	5.7	0
Third most recent***		
Euro-Canadian	85.9	30.0
East Asian	7.8	67.5
Other	6.3	2.5
Mean age in years at first sexual intercourse (SD)	17.2 (1.57)	17.4 (1.96)

Significant group differences at * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

†For individuals reporting ever having a relationship.

University Subject Pool system in which students receive course credit for participating in research, only interested individuals participated, yielding a response rate of 100%.

All demographic data are presented in Table 1. The Euro-Canadian participants were significantly older ($t(259) = 2.94$, $P = 0.004$; mean difference = 1 year), and had significantly more education ($t(246) = 2.18$, $P = 0.03$; mean difference = 0.6 years) than the East Asian group. There were significantly more Euro-Canadian men currently in a relationship ($\chi^2(1) = 3.81$, $P = 0.034$), and ever in a relationship ($\chi^2(1) = 20.15$, $P < 0.001$), with the longest relationship length also being significantly longer in this group ($t(265) = 2.24$, $P = 0.026$). In examining only those individuals who have been in a relationship, ethnicity of recent partners was found to differ significantly between groups, with East Asian men being much more likely to have an East Asian partner for their most recent, ($\chi^2(10) = 75.93$, $P < 0.001$), second most recent ($\chi^2(10) = 57.48$, $P < 0.001$), and third most recent

($\chi^2(9) = 47.47$, $P < 0.001$) relationships compared with the Euro-Canadian participants, who were more likely to have had recent relationships with Euro-Canadian partners.

Although age significantly differed between the groups, a multivariate ANOVA examining the interaction between group and age on these dependent variables was not significant ($F_{5,152} = 1.542$, $P > 0.05$). Thus, age was not covaried out of any subsequent analysis.

Procedure

A general announcement in several sections of an introductory psychology course was made, and students who were interested in participating received a consent form and questionnaire package to take home and return in a sealed envelope to the research laboratory. The battery of questionnaires was estimated to take approximately 90 minutes to complete. We administered questionnaires to both male and female students, with only the male data being considered in this article. All participants gave written informed consent and

received extra course credit for their participation. All procedures were approved by the university's ethics review board.

Measures

Derogatis Sexual Functioning Inventory (DSFI)

The DSFI is a multidimensional self-report inventory with 10 domains [25]. We included the Information (26 items), Attitude (30 items), Experience (24 items), Drive (five items), Fantasy (20 items), and Body Image (15 items) subscales to provide an overall measure of sexual permissiveness/liberalism in beliefs and behaviors. We also included two measures from the DSFI that assess psychological symptoms: the Brief Symptom Inventory (53 items) and Affect Balance (40 items) subscales.

The Information subscale assesses general knowledge about sexual anatomy, physiology, and psychology, in which subjects indicate true or false to a series of statements. The Attitude subscale assesses liberal attitudes toward a variety of sexual stimuli and issues such as masturbation and oral sex on a 5-point scale, from strongly disagree to strongly agree. The Experience subscale assesses a range of lifetime sexual experiences by tallying the number of items that participants report. The Drive subscale indexes level of sexual interest/libido by measuring the frequency of various sexual activities. The Fantasy subscale presents a number of fantasy themes and measures the extent to which the person has experienced that fantasy. The Body Image subscale is gender specific and lists a series of statements about one's body that the respondent can agree or disagree with. The Brief Symptom Inventory on the DSFI is a distinct psychometric instrument that measures psychopathology in terms of nine major symptom dimensions and three global indices of distress. Finally, the Affect Balance Scale, another distinct psychological test instrument, is a measure of negative emotions that may be involved with sexual concerns. Overall internal consistency and test-retest reliability are good. We also examined age of first sexual intercourse, which is one distinct item on the DSFI.

Golombok Rust Inventory of Sexual Satisfaction (GRISS) for Men

The GRISS was administered as a measure of sexual problems in men [26]. It is a 28-item scale with a 5-point Likert response format. Subscales include: Impotence, Premature Ejaculation, Non-Sensuality, Avoidance, Dissatisfaction, Infre-

quency, and Non-Communication. Available normative data on the GRISS total score indicate that it has split-half reliability of $r = 0.87$ and test-retest reliability of $r = 0.76$. It significantly discriminates between men with and without a diagnosis of sexual dysfunction [27]. Participants were told to think about their current or most recent sexual partner when answering items on the GRISS.

Vancouver Index of Acculturation (VIA)

The VIA was used to measure heritage and mainstream dimensions of acculturation consistent with a bidimensional model [21]. Item content was initially derived from an item list provided by J. W. Berry, tested in a sample of Chinese university students, refined, and subsequently tested in three different undergraduate samples of Chinese, non-Chinese East Asian, and non-English speaking (excluding East Asian) individuals. The VIA consists of 20 items, which are paired (heritage and mainstream) in 10 domains as follows: traditions, marriage, social activities, comfort with people, entertainment, behavior, practices, values, humor, and friends. Each item is rated on a 9-point scale, ranging from *strongly agree* (1) to *strongly disagree* (9). Higher scores on the mainstream dimension reflect adaptation to the individual's current cultural context (North American culture, in the present study), and higher scores on the heritage dimension reflect the maintenance of one's cultural values and traditions. Reliability, as measured by Cronbach's alpha, was 0.91 for the heritage dimension and 0.89 for the mainstream dimension. Concurrent validity is good, ranging from -0.57 to -0.60 for the heritage dimension and from 0.51 to 0.60 for the mainstream dimension. Finally, factorial validity was obtained using a principal component analysis with promax rotation on two Chinese groups, one East Asian group, and the other a mixed immigrant group; orthogonal factors corresponding to heritage and mainstream dimensions were clearly extracted [21].

Data Analyses

Independent-samples t -tests were used to compare groups on intercourse rates, and multivariate analyses of variance (ANOVA) were used to compare groups on DSFI subscale items and GRISS subscale items. Significant multivariate effects were followed up by univariate tests of significance.

To explore the effects of acculturation in the Asian sample, a series of multivariate general lin-

ear model ANOVAs were conducted given that many of the questionnaire subscales are theoretically and empirically related, and because doing so controls for Type I error inflation. Heritage and mainstream acculturation were entered as independent dimensional predictors, and the sexual functioning subscales (eight DSFI scales, and seven GRISS subscales) were entered separately as dependent variables. Interaction terms were also entered into the model, but were dropped if they did not attain significance. A similar multivariate analysis was conducted for "Years in Canada."

Results

Effects of Self-Identified Ethnic Group (Euro-Canadian vs. East Asian) on Sexuality Measures

A total of 79.3% of the Euro-Canadian men and 52% of the East Asian men reported experiencing penile-vaginal intercourse at least one time in their life, with rates being significantly higher in the Euro-Canadian group ($\chi^2(1) = 15.19$, $P < 0.001$). However, among nonvirgin participants only, the age of first sexual intercourse did not significantly differ between the two groups ($t(118) = -0.66$, $P > 0.05$).

There was a significant overall multivariate effect for ethnic group on DSFI subscales ($F_{9,102} = 4.79$, $P < 0.001$, Wilks' $\lambda = 0.70$). Follow-up univariate tests revealed significantly higher Information ($P < 0.001$), Experience ($P = 0.027$), Drive ($P = 0.005$), and Attitude ($P = 0.001$) scores in Euro-Canadian compared with East Asian men. Interestingly, Body Image scores were higher in East Asian compared with Euro-Canadian men ($P < 0.001$), and the groups did not differ with respect to sexual fantasies ($P > 0.05$). On measures of affect, East Asian men had significantly higher psychological symptoms ($P < 0.001$) and less positive affect ($P < 0.005$).

Only men who had had sexual intercourse were included in the analyses of the GRISS. The overall multivariate effect was significant for ethnic group ($F_{8,97} = 2.01$, $P < 0.05$). Univariate ANOVAs revealed that East Asian men reported significantly higher Impotence ($P = 0.01$) and Avoidance ($P = 0.006$) scores, but no significant group differences in Premature Ejaculation, Non-Sensuality, Dissatisfaction, Infrequency, or Non-Communication, all P s > 0.05 . Data comparing the Euro-Canadian with East Asian men on sexuality measures are presented in Table 2.

Table 2 Comparisons of Euro-Canadian with East Asian male university students on the Derogatis Sexual Function Inventory (DSFI) and the Golombok Rust Inventory of Sexual Satisfaction (GRISS)

Dependent variable	Euro-Canadian Mean (SD)	East Asian Mean (SD)
DSFI—Information***	20.2 (2.4)	18.4 (3.2)
DSFI—Experience*	17.6 (5.8)	11.9 (8.3)
DSFI—Drive**	23.3 (6.5)	19.8 (6.4)
DSFI—Attitude***	26.2 (14.2)	16.9 (14.4)
DSFI—Body Image**	17.5 (11.7)	23.5 (8.4)
DSFI—Fantasy	6.4 (3.4)	5.3 (3.8)
DSFI—Brief Symptom Inventory***	0.54 (0.39)	0.94 (0.62)
DSFI—Affect Balance**	1.5 (1.0)	0.7 (1.3)
GRISS—Impotence**	3.0 (1.4)	3.8 (1.6)
GRISS—Premature Ejaculation	3.7 (1.4)	4.2 (1.9)
GRISS—Non-Sensuality	3.4 (2.3)	4.1 (2.4)
GRISS—Avoidance**	2.3 (1.4)	3.3 (2.0)
GRISS—Dissatisfaction	3.1 (1.6)	3.2 (1.3)
GRISS—Infrequency	4.3 (2.2)	4.6 (2.2)
GRISS—Non-Communication	3.8 (1.8)	3.5 (1.7)

Range of possible scores are as follows: DSFI—Information 0–26, DSFI—Experience 0–24, DSFI—Drive 0–40, DSFI—Attitude –60 to +60, DSFI—Body Image 0–60, DSFI—Fantasy 0–20, DSFI—Brief Symptom Inventory 0–4, DSFI—Affect Balance –4.0 to +4.0. Higher DSFI scores on Information, Experience, Drive, Attitude, Body Image, and Fantasy indicate greater levels of that variable. Higher scores on the DSFI—Brief Symptom Inventory indicate higher levels of psychological symptoms. Higher scores on the DSFI—Affect Balance Scale indicate more positive affect.

All GRISS scores range from 1 to 9 such that higher scores denote a sexual problem.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Effects of Acculturation on Sexual Permissiveness in East Asian Men

Unidimensional Acculturation

Years in Canada was not significantly associated with sexual permissiveness, as measured by the eight scales of the DSFI ($F_{9,39} = 0.46$, $P > 0.05$, Wilks' $\lambda = 0.91$).

Bidimensional Acculturation

Overall, there was a significant multivariate main effect for the mainstream dimension of the VIA ($F_{9,39} = 4.17$, $P = 0.001$, Wilks' $\lambda = 0.51$), and no significant multivariate main effect for the heritage dimension of the VIA ($F_{9,39} = 1.10$, $P > 0.05$, Wilks' $\lambda = 0.80$) on overall sexual permissiveness. The mainstream dimension was a statistically significant predictor of Information ($P < 0.001$), Attitude ($P < 0.01$), Fantasy ($P < 0.01$), and Body Image ($P < 0.05$) such that higher levels of mainstream acculturation were associated with higher levels on each of these DSFI subscales. The interaction between mainstream and heritage dimensions was not statistically significant ($P > 0.05$). Data comparing the bidimensional and unidimensional models on prediction of sexual permissiveness are presented in Table 3.

Table 3 Prediction of sexual permissiveness, as measured by the Derogatis Sexual Functioning Inventory (DSFI) subscales, from bidimensional acculturation (heritage and mainstream dimensions) and unidimensional acculturation (years in Canada) in East Asian men

Variable	Bidimensional model			Unidimensional model	
	Mainstream		Heritage	Years in Canada	
	Adjusted R^2	Partial η^2	Partial η^2	Adjusted R^2	Partial η^2
DSFI—Information	0.183***	0.210	0.001	-0.017	0.004
DSFI—Experience	-0.023	0.018	0.001	-0.018	0.003
DSFI—Drive	-0.029	0.006	0.004	-0.021	0.001
DSFI—Attitude	0.217**	0.191	0.029	-0.017	0.005
DSFI—Body Image	0.081*	0.079	0.077	-0.004	0.017
DSFI—Fantasy	0.0**	0.013	0.019	-0.014	0.007
DSFI—Brief Symptom Inventory	-0.006	0.030	0.001	0.008	0.028
DSFI—Affect Balance	0.026	0.041	0.012	0.037	0.057

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$ on univariate tests.

Effects of Acculturation on Sexual Function in East Asian Men

Unidimensional Acculturation

Years in Canada was not significantly related to sexual function, as measured by the GRISS ($F_{8,42} = 0.82$, $P > 0.05$, Wilks' $\lambda = 0.87$).

Bidimensional Acculturation

There was a significant multivariate main effect for the mainstream dimension of the VIA ($F_{8,41} = 2.39$, $P = 0.032$, Wilks' $\lambda = 0.68$), but not for the heritage dimension of the VIA ($F_{8,41} = 0.83$, $P > 0.05$, Wilks' $\lambda = 0.86$) on GRISS scores. Higher mainstream scores were associated with lower Impotence ($P < 0.001$), Avoidance ($P < 0.01$), and Non-Communication ($P = 0.05$) scores (i.e., less sexual dysfunction) (Table 4). The interaction between mainstream and heritage dimensions was not statistically significant ($P > 0.05$).

Discussion

Overall, we found significant group differences according to self-identified ethnicity such that

Euro-Canadian men were more likely to have engaged in sexual intercourse (79.3%) compared with East Asian men (52%), replicating the findings of others [28]. In addition, the Euro-Canadian group had significantly higher scores on the DSFI subscales reflecting information, sexual experiences, sexual drive, and liberal attitudes. The groups did not differ with respect to sexual fantasies. Both psychological symptoms and negative affect were higher in the East Asian compared with the Euro-Canadian men. On measures of sexual response and dysfunction using the GRISS, East Asian men had significantly higher rates of erectile difficulties (Impotence subscale) and sexual avoidance. Interestingly, despite the significantly higher rates of erectile difficulties and sexual avoidance among East Asian men, there were no significant ethnic group differences in sexual dissatisfaction, suggesting that East Asian men may be more tolerant of sexual difficulties or that sexual satisfaction is less linked to erectile difficulties in East Asian men compared with Euro-Canadian men. This result is similar to the findings from the Global Study of Sexual Attitudes

Table 4 Prediction of sexual function, as measured by the Golombok Rust Inventory of Sexual Satisfaction (GRISS), from bidimensional acculturation (heritage and mainstream dimensions) and unidimensional acculturation (years in Canada) in East Asian men

Variable	Bidimensional model			Unidimensional model	
	Mainstream		Heritage	Years in Canada	
	Adjusted R^2	Partial η^2	Partial η^2	Adjusted R^2	Partial η^2
GRISS—Impotence	0.212***	0.242	0.018	0.011	0.031
GRISS—Premature Ejaculation	0.081	0.044	0.066	-0.019	0.001
GRISS—Non-Sensuality	0.028	0.062	0.002	-0.020	0.001
GRISS—Avoidance	0.138**	0.172	0.001	0.003	0.023
GRISS—Dissatisfaction	-0.014	0.011	0.012	-0.003	0.017
GRISS—Infrequency	-0.021	0.001	0.020	-0.007	0.001
GRISS—Non-Communication	0.047*	0.076	0.005	-0.018	0.013

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$ on univariate tests.

and Behaviors (GSSAB), which found higher rates of sexual difficulties in East Asian men (in their native countries) compared with men from North America [29].

When exploring the effects of acculturation on these measures of sexuality in the East Asian sample alone, we found that length of residency did not significantly predict any of the DSFI or GRISS scores; however, the mainstream component of acculturation significantly predicted a number of measures. This replicates the findings of others and supports the idea that length of residency is not a good proxy for acculturation, given that acculturation to North American norms involves numerous attitudinal and behavioral variables that are not necessarily linked to more exposure to the new country [28]. Specifically, East Asian men with higher levels of mainstream acculturation had significantly more sexual knowledge (information), liberal attitudes, fantasies, and body image, as measured by the DSFI. In addition, increasing levels of mainstream acculturation were associated with significantly lower impotence, sexual avoidance, and non-communication scores on the GRISS, indicating that higher levels of mainstream acculturation are linked to less sexual dysfunction. Interestingly, the heritage acculturation dimension did not predict any of these variables.

These findings replicate those of others who found significant ethnic group differences in sexual attitudes, behaviors, and responses in women, and that length of residency was a rather limited measure when attempting to explore sexuality [15]. It is interesting, however, that in our study, we found no significant effect of the heritage dimension of acculturation on sexuality. In other words, the level of affiliation of East Asian men with their prior culture had no bearing on their sexuality today. In contrast, for sexual attitudes in women, Brotto et al. found that a woman's level of heritage acculturation interacted with her level of mainstream acculturation such that simply becoming acculturated to North American norms was insufficient for transforming women's attitudes [15]. This suggests that for men, the process of acculturating to North American traditions is sufficient for altering their sexual attitudes, behaviors, and responses, irrespective of their level of affiliation with their prior culture. The fact that the VIA was predictive of these measures whereas length of residency was not, also suggests that it is more than the passage of time that is responsible for these effects of mainstream acculturation on sexuality.

It is not entirely surprising that we did not find an effect of the heritage dimension in Asian men, whereas this dimension was a significant predictor of sexuality in Asian women. When Asian men and women are compared in the same study, we see differential effects of acculturation on measures of sexuality such as age of sexual debut, but not necessarily on sexual attitudes or knowledge [19,30]. However, none of these studies employed a bidimensional measure of acculturation and, instead, tended to use length of residency as a proxy for acculturation.

Different societal standards for men and women in regard to sexuality may also contribute to the finding that the heritage dimension of acculturation was not a significant predictor of sexuality in Asian men whereas it significantly predicted the sexuality of Asian women. Even though Confucian sexual philosophy emphasized procreation and maintenance of social stability, and prohibited sex outside of marriage for both men and women, Chinese men have historically been more sexually permissive than women [31–32]. In Korea, parents are more intolerant of the sexual activities of their daughters than those of their sons, and sex education in high schools emphasizes the importance of women's premarital virginity [33–35]. Although premarital sexual activities are frowned upon for both genders in Korea, women's premarital sexual activity is viewed particularly harshly [36]. Therefore, even though sexual expression is suppressed in Asian culture in general, the double standard that exists for the two genders whereby sexual activity is more taboo in women could have led to women being more strongly influenced by Asian sexual conservatism. This could explain why the heritage dimension of acculturation significantly influenced the sexuality of Asian women, but not that of Asian men.

At least some of the differences between ethnic groups might be attributable to differences in the group's sexual partners, although fewer than half of the Asian men were currently in a relationship. Euro-Canadian and Asian men significantly differed on the ethnicity of their three most recent partners, with each group being significantly much more likely to have a partner from the same ethnic group. It is possible that the women Asian partners, embracing more traditional values and behaviors regarding sexuality, may have influenced the attitudes and behaviors of the Asian men in this study [15]. It would be interesting to correlate effects of acculturation of one partner on the other partner to see if, as women acquired more permis-

sive views toward sexuality, this translated into changes in their Asian men partners' experiences with sexuality. Clearly, this is only speculation that deserves investigation in the future.

It is also interesting that Asian men had higher rates of psychological symptoms than Euro-Canadian men. The extent to which these symptoms are related to the higher reports of erectile difficulties must be considered. Given the Asian tendency to minimize psychological symptoms and to have more somatic expressions of distress, it is possible that distress was expressed as a physical symptom (erectile dysfunction), but not as sexual dissatisfaction [37]. This suggests that, in the clinical setting, appropriate attention should be paid to the psychological vs. physiological manifestation of distress.

There are some limitations to this study that must be addressed. First of all, we examined a sample of male university students and did not include a community sample of men. However, in community samples, others also have found a higher prevalence of sexual concerns and more restrictive attitudes toward sexuality among Asian men as compared with men from other countries [38]. Moreover, the Asian men spent at least half their lives in Canada and therefore are not necessarily a true immigrant population. It is possible that this may have contributed to an overall higher level of sexual information and experiences given that education tends to be correlated with these measures. Given this, it is possible that the effects of acculturation in a community sample of men, or a group of recent immigrant Asian men, might be even more pronounced. What are the implications of these findings on assessment and treatment of Asian men with sexual concerns? It is possible that this sample studied represents the same cohort of men who are more likely to seek treatment for sexual problems than less acculturated or recent immigrant groups; thus, our findings are likely very generalizable to that sample. However, there are no existing data that have measured the level of acculturation in any ethnic minority group seeking treatment for sexual problems; thus, this statement is purely speculative and deserves exploration in the future.

Another limitation of the current study is that for many of the analyses, we limited our investigation only to those men who have engaged in sexual intercourse. It is possible that doing so may have excluded a large segment of men who engage in other forms of sexual activity that may be affected by their acculturation level. Another obvi-

ous limitation is the self-selection bias in that only men who felt relatively comfortable with the topic of sexuality participated in this research. It is possible that acculturation effects may have been even more pronounced among those who declined to participate. Finally, we employed measures that were established and validated in North American and European samples, and these measures may not generalize well to individuals from other subgroups. Despite the fact that all participants in the study were fluent in English and over a third of the Asian sample was born in North America, this is a potential bias in the findings that must be recognized.

With regard to the clinical implications of the findings, the data suggest that examining ethnic group alone may be insufficient for understanding the subtle influences of culture on sexuality. Moreover, the findings suggest that it is a false assumption that the more time one spends in a new culture, the more one adopts the values, customs, and attitudes of that culture, and that this is the case for men as well as for women [15]. Here we saw a lack of significant effect of length of residency on sexuality measures, whereas examining mainstream acculturation was important. As research on sexual dysfunction among different ethnic groups continues to mount [39–41], it will be important to include measures of acculturation when considering interactions between culture and sexuality.

Among Asian men, impotence and avoidance, as measured by the GRISS self-report items, were significantly higher than levels reported by the Euro-Canadian group, and were significantly affected by the level of mainstream acculturation. This is reminiscent of the findings from the GSSAB, which found higher rates of sexual dysfunction in Asian men compared with North American and European men [29]. However, the participants from the GSSAB were sampled in their heritage countries, and men in the current study were sampled in North America. One interpretation of the findings is that, indeed, rates of sexual difficulty are higher in men from Asian countries, possibly due to cross-cultural differences in sexuality education and stigmatization around sexuality. Moreover, as a man acculturates to the North American culture, presumably he acquires accurate information about sexuality (as found in the current study), additional experiences, and more liberal attitudes, which may lead to lower rates of sexual difficulty. Whether or not these findings are clinically meaningful must be

considered in light of the fact that only a self-report measure (and not a clinical interview) was used to assess sexual problems. The extent to which the levels of "impotence" correspond to a clinical diagnosis of erectile dysfunction is also unclear. Future research must incorporate interview methods with self-report assessment to determine the clinical magnitude of the reported symptoms. The finding that sexual avoidance was also related to mainstream acculturation suggests that a reduction in avoidance of sexual situations may also be playing a mediating role in the reduction of erectile difficulties seen in Asian men.

Despite these findings on sexual response, reports of sexual dissatisfaction did not significantly differ between the groups, nor was it affected by level of acculturation. This implies that overt sexual difficulties and sexual dissatisfaction may not necessarily be related in the Asian men, and suggests that assessment of distress and dissatisfaction, independently, must accompany the assessment of sexual symptoms, as is advocated in women [42]. Moreover, this is especially important in the evaluation of men from different cultural groups.

Conclusions

Overall, the data shed light on the important influence of culture on men's sexual response, and hopefully guide the researcher as well as the clinician to be attuned to the cultural and ethnic aspects of sexuality. The findings argue strongly for the inclusion of culture as a target of assessment during sexuality history taking. In addition, the findings suggest that inclusion of a measure of acculturation, rather than relying on individuals' culture of origin or on the number of years they have been in the new culture, will be significantly predictive of sexual attitudes, behaviors, and responses for men. The VIA employed in the current study is a simple, easy-to-administer, and well-validated self-report measure that may have potential in this context. Finally, future research must incorporate interview with self-report materials in the assessment of sexual dysfunction together with the evaluation of acculturation, in order to guide culturally competent care of patients presenting with sexual concerns.

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