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Ethnic and Gender Differences in Sexuality: Variations in Sexual Behavior Between Asian and Non-Asian University Students

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Seven hundred and two (346 non-Asian, 356 Asian) undergraduate volunteers were assessed in a confidential laboratory setting on levels of interpersonal sexual behavior (e.g., petting, intercourse), intrapersonal sexual behavior (e.g., fantasy, masturbation), and sociosexual restrictiveness (e.g., lifetime number of partners, number of "one-night stands"). The purpose was to examine possible differences in sexual behavior between Asian and non-Asian Canadian university students and to determine the association between North American residency and the sexual behavior of Asians. The role of gender on sexual behavior both across and within ethnic groups was also examined. Statistical analyses revealed that Asian students were significantly more conservative than non-Asian students on all measures of interpersonal sexual behavior and sociosexual restrictiveness. Significant differences were also noted between Asian and non-Asian students on most measures of intrapersonal sexual behavior. With the exception of two fantasy items, length of residency in Canada was unrelated to interpersonal sexual behavior, intrapersonal sexual behavior, or sociosexual restrictiveness among Asians. Although gender differences were substantial for intrapersonal sexual behaviors such as fantasy and masturbation, no significant gender differences were found for measures of interpersonal sexual experience, with the exception of reported number of one-night stands.

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INTRODUCTION

Between 1980 and 1991, more than 570,000 people immigrated from East and Southeast Asia into Canada (Statistics Canada, 1992). Over a 12-year period, this represents more than 36% of the total number of immigrants admitted into Canada, and indicates that East and Southeast Asians now represent the largest immigrant group in Canada (Statistics Canada, 1992). In addition to differing in areas such as language and customs, Asians appear to differ significantly from Europeans and North Americans in their expression of sexuality. Recent studies support the long-standing impression of Western observers (e.g., Hegel, 1821/1956) that Asians appear more socially conservative in their expression of sexuality than Europeans or North Americans. For example, in a study conducted by the Family Planning Association of Hong Kong (1987), it was reported that only 27% of men and 19% of women (ages 18–27) had engaged in premarital intercourse. Chan (1990) reported even lower rates of premarital intercourse experience for a sample of 83 Chinese undergraduate students at the University of Hong Kong. These rates contrast dramatically with those for U.S. college students. In a recent review, DeBuono *et al.* (1990) reported that 85% of U.S. college students claim to have engaged in premarital sexual intercourse. These findings are supported by statistics on national differences in rates of premarital coital experience, where the lowest reported rates tend to be among Asian nations (Hofmann, 1984).

While these findings highlight important differences in sexual behavior between Asian and North American youth, very few studies have examined whether these same differences exist between Caucasian youth and Asian youth living in Canada or the United States. With exposure to North American attitudes and behaviors, it may be expected that Asian immigrants would adopt, or be influenced by, North American sexual values. Moreover, it may be expected that the influence of North American sexual values would vary as a function of the amount of exposure to the new culture; those who immigrated recently would be less influenced than those who immigrated many years previously. This hypothesis is supported by a number of studies indicating that Asian Americans who immigrated many years prior are more assimilated to Western society than recent Asian immigrants (e.g., Feagin and Fujitaki, 1972; Meredith and Meredith, 1966; Weiss, 1974).

Despite the large number of Asian persons now living in North America, and the importance of considering cultural differences when conducting research and/or clinical work (D. Sue and Sue, 1972; S. Sue and Sue, 1987), there has been little attention given to this area of research. To date, only one published study has examined the relation between American culture and the sexual behavior of young Chinese immigrants. In their 1982 survey of 114 Chinese students in America, Huang and Uba (1992) studied the relation between acculturation, as measured by Marmot's Acculturation Index (Marmot, 1975), and subjects' sexual attitudes and behavior. Acculturation was positively related to having experienced premarital intercourse and negatively related to the age at first coital experience; the more acculturated the respondent, the more likely the respondent was to have experienced sexual intercourse and to have done so at an early age. With respect to sexual experience (defined by whether or not subjects engaged in the following behaviors: holding hands, holding arms, kissing, necking, light petting, heavy petting, coitus) there were no significant associations between acculturation and having engaged in a variety of sexual behaviors. There was however an association between sexual experience and the ethnicity of dating partners; subjects who dated only Caucasians were consistently more sexually experienced than those who dated only Chinese. The present investigation was designed to extend this previous research by (i) using a comparatively large sample of 702 undergraduate students, (ii) including a matched control group of non-Asian undergraduate students, (iii) examining a wide variety of sexual experiences and behaviors, and (iv) testing in a confidential, laboratory setting. The purpose of the present study was to provide the first post-AIDS baseline data on sexual behavior among undergraduates of Asian and non-Asian descent residing in Canada, and to determine the extent to which length of residency in Canada moderates differences in sexual behavior between undergraduates of Asian and non-Asian descent.

METHOD

Subjects

Seven hundred and twenty-two University of British Columbia undergraduate volunteers (285 male, 437 female) completed this study in exchange for course credit. The subjects were enrolled in introductory psychology courses during either the Fall session, 1992–1993 (September–May) or the Spring session, 1993 (May–July). The study was conducted between January and July, 1993. Data from 4 subjects were excluded from

analyses because of missing gender information, and from 16 subjects because of missing ethnicity information. Final data analyses were performed on 702 subjects (275 male, 427 female).

Ethnic composition of the sample was 49% non-Asian and 51% Asian. For the purposes of simplicity and brevity, here and throughout this manuscript, East and Southeast Asians are referred to as Asians. All other individuals, including a small portion of South and West Asians, are referred to as non-Asians. Approximately 70% of the Asian subsample were ethnic Chinese. The proportion of East and Southeast Asian ancestry individuals in this sample (30%) is substantially higher than their proportion in the Province of British Columbia as a whole (13%; Statistics Canada, 1992), and also appears to be somewhat higher than for the undergraduate population of the university as a whole. Statistics on ethnic composition of the university student population were not available and, consequently, we were unable to verify this latter impression. For statistical analyses, Asians were defined as those (i) having listed an East or Southeast Asian language[3] as their first language; or (ii) having listed an East or Southeast Asian country[4] as their country of birth or parents' birth. All other persons, including a small number of South Asians (e.g., East Indian; Sri Lankan), and West Asians (e.g., Middle Eastern; Iranian) were classified as non-Asian. Among non-Asians, 84% listed English as their first language and 80% listed Canada as their country of birth. Countries of origin for Asians and non-Asians are listed in Table I. Among Asians, 28% listed English as their first language (Canadian Asian, 63%; Asian pre-1987, 18%; Asian post-1987, 7%). Complete data for Asian and non-Asian subsamples grouped by gender were 131 Asian males; 144 non-Asian males; 224 Asian females; 203 non-Asian females. To examine the effects of length of Canadian residency on sexuality, Asian individuals were divided into three groups, those who were born in Canada, and Asian immigrants divided at the median year of arrival (1987) into two equal-sized groups. Subject groups are non-Asians, Asians born in Canada (Cdn. Asian), Asians who immigrated to Canada prior to 1987 (Asian pre-87), and Asians who immigrated to Canada during or after 1987 (Asian post-87). Sample breakdown of Asians by length of residency in Canada was 32% Canadian-born, 33% pre-1987 immigrant, 35% post-1987 immigrant.

Subjects ranged in age from 17 to 55 years (94% were between 18 and 25) with a mean age of 20 for men and 21 for women. Mean age of subjects by ethnic composition was non-Asian 21; total Asian 20; Canadian-born Asian 19; Asian immigrants (pre-87) 20; Asian immigrants (post-

[3]Asian languages are Burmese, Cantonese, Chinese, Hakkah, Japanese, Korean, Mandarin, Malay, Filipino, Tagalog, Taiwanese, and Vietnamese.

[4]Countries of birth include Burma, China, Hong Kong, Indonesia, Japan, Korea, Macau, Malaysia, Philippines, Singapore, Taiwan, and Vietnam.

Table I. Country of Birth[a]

Non-Asian		Cdn born Asian		Asian pre-87 imm.		Asian post-87 imm.	
Country	*n*	Country	*n*	Country	*n*	Country	*n*
Australia	4	Canada	112	Borneo	1	Australia	1
Bolivia	1			Brunei	1	China	11
Canada	283			China	12	Hong Kong	67
Cyprus	1			England	3	Japan	5
Czechoslovakia	1			Fiji	1	Malaysia	2
England	7			Hong Kong	50	Phillipines	3
Fiji	1			India	2	Singapore	3
Finland	1			Japan	3	South Korea	10
France	1			Malaysia	2	Taiwan	17
Germany	1			Phillipines	8	USA	1
Guyana	1			Peru	1	Unclassified	4
India	9			Singapore	2		
Iran	6			South Korea	7		
Israel	3			Taiwan	9		
Kenya	2			Vietnam	12		
Lebanon	1			Unclassified	5		
Libya	1						
Mozambique	1						
Pakistan	1						
Poland	1						
Peru	1						
South Africa	4						
Tunisia	1						
Turkey	1						
Ukraine	1						
USA	4						
Wales	1						
Unclassified	7						
Total	347		112		119		124

[a]Labels are Canadian-born Asian (Cdn-born Asian), Asians who immigrated to Canada prior to 1987 (Asian pre-87 imm.), Asians who immigrated to Canada during 1987 or after 1987 (Asian post-87 imm.). Subject *n* includes males and females.

87) 21. Forty-three percent of the women volunteers compared to 39% of the men were involved in relationships when they filled out the questionnaires. Forty-three percent of the female sample and 40% of the male sample were virgins.

Measures

Sexual behavior was assessed using the Sexual Experience, Drive, and Fantasy Scales of the Derogatis Sexual Functioning Inventory (DSFI; Dero-

gatis, 1978) and the behavior items of the Sociosexual Orientation Inventory (SOI; Simpson and Gangestad, 1991). The DSFI is a standardized self-report inventory designed to assess current levels of sexual functioning. Research indicates that the Sexual Experience Scale (SES) from the DSFI is both a valid and reliable measure of sexual behavior (Andersen and Broffitt, 1988). Content analysis of the SES indicates that a wider range of sexual behaviors is sampled by the SES than comparable measures (Andersen and Broffitt, 1988).

The DSFI Sexual Experience Scale consists of 24 statements regarding light petting (6 items), heavy petting (8 items), oral sex (3 items), intercourse (6 items), and masturbation (1 item). Subjects indicated (by a yes/no response) whether or not they had ever engaged in these sexual behaviors. The Sexual Drive Scale of the DSFI consists of four items including intercourse, masturbation, kissing and petting, and sexual fantasies. Subjects indicated the frequency with which they engaged in the sexual activities by checking the appropriate category. Categories were not at all, less than once/month, 1–2/month, 1/week, 2–3/week, 4–6/week, 1/day, 2–3/day, and 4+/day. The DSFI Drive Scale also consists of three questions: ideal frequency of intercourse, age of first interest in sexual activity, and age of first intercourse. The DSFI Sexual Fantasy Scale includes 20 statements that reflect a range of fantasies including gender orientation (3 items), intercourse (3 items), masochism (3 items), sadism (3 items), promiscuity (4 items), and miscellaneous (4 items). The SOI measures a small number of sexual behaviors thought to reflect the extent to which individuals possess a restricted versus an unrestricted orientation toward engaging in uncommitted sex.

Four questions from the SOI and one additional question were used to assess promiscuous sexual behavior and fantasy. Questions from the SOI included number of sexual (intercourse) partners in the past year, predicted number of sexual (intercourse) partners in the next 5 years, lifetime number of "one-night stands" (intercourse), and frequency of sexual fantasies about someone other than a current partner. Lifetime number of sexual (intercourse) partners was added as an additional item.

Procedure

Subjects completed the DSFI and the SOI in groups of 5–10 individuals in a large testing room arranged to provide maximum privacy for responding (e.g., visual barriers between subjects). A same-sex researcher was present during all sessions to provide instructions and to answer questions. No names were used in the investigation; only randomly selected identifi-

cation numbers were placed on the questionnaires. After completing the questionnaire, each subject folded the questionnaire, sealed it in a blank envelope, and deposited the envelope in a large "draw box" before leaving the study room. Subjects were ensured anonymity and confidentiality, and were informed of their right to withdraw from the study at any time without loss of credit.

RESULTS

Because age may be expected to correlate with sexual experience in undergraduate populations, ANOVAs were conducted to evaluate whether there were gender or ethnic group differences in mean age. There were no gender differences in age in either analysis. However, the mean age for Asians was significantly lower than that for non-Asians ($F = 12.72$, $p < 0.001$) and among Asians there were significant differences in age as a function of length of residency in Canada ($F = 24.34$, $p < 0.001$). Because age was confounded with ethnicity in this sample, age of subjects was statistically controlled in all subsequent analyses of mean differences. All F ratios and associated p values reported in Tables III–VII refer to analyses with age covaried.

Measures of sexuality were divided into three broad areas: interpersonal sexual behavior, intrapersonal sexual behavior, and sociosexual restrictiveness. With the exception of the item *masturbating alone,* all DSFI Experience items were included in the interpersonal (Factor 1) sexual behavior category. All DSFI Fantasy items and the DSFI Experience item *masturbating alone* were included in the intrapersonal (Factor 2) sexual behavior category. With respect to DSFI Drive items, they were divided between interpersonal and intrapersonal sexual behavior categories. In steadily dating couples, frequency of intercourse and petting may be appropriate indicators of sexual drive (Derogatis and Meyer, 1979). However, given the wide variability in dating status among undergraduate students, these variables are likely more related to opportunity for sexual encounters than to drive and, would therefore be expected to correlate highly with sexual experience. Frequency of masturbation and sexual fantasy, on the other hand, are not dependent upon social opportunities and may therefore be more related to the range of fantasy or sexual drive than the range of experience.

To evaluate the distinction between interpersonal and intrapersonal aspects of sexuality, a principal components analysis was conducted on the intercorrelations among the 24 DSFI Sexual Experience items, the 20 Sexual Fantasy items, six DSFI Sexual Drive items (frequency of intercourse,

petting, masturbation and fantasy, ideal frequency of intercourse, and age of first interest in sexual activity), and the dichotomous variable Virginity status. Two factors were extracted and rotated to an orthogonal varimax criterion. As expected, the two factors clearly corresponded to intrapersonal and interpersonal factors of sexuality. Loading highly on the first factor were the dichotomous *Virginity status* index, the DSFI Sexual Drive items *frequency of intercourse* and *frequency of petting,* and all DSFI Sexual Experience items except *masturbating alone.* Loading highly on the second orthogonal factor were all sexual fantasy items, masturbating alone, DSFI Sexual Drive items, frequency of masturbation, frequency of fantasy, and age of first interest in sexual activity. The variable, ideal frequency of intercourse, loaded moderately and equally on both interpersonal and intrapersonal sexuality factors. To examine whether the obtained solution was a function of the large number of DSFI Experience and Fantasy Scale items relative to the other variables, the analysis was repeated with the 24 Experience items grouped into four content scales, and the 20 Sexual Fantasy items grouped into six content scales (see below for a description of these scales). The miscellaneous fantasy composite, see Table V, was omitted from this analysis. Results from this second component analysis were essentially identical to the first (see Table II for factor loadings) in showing that interpersonal sexual experiences do not covary substantially with intrapersonal aspects of sexuality such as masturbation, fantasy, interest, and drive. Because interpersonal and intrapersonal aspects of sexuality define clearly distinct factors within all four subsamples (ethnic status by gender), results were ordered with respect to these two categories.

The third category of sexuality, sociosexual restrictiveness was considered independently of interpersonal and intrapersonal sexual behavior for theoretical reasons. Simpson and Gangestad (1991) have provided convincing evidence that willingness to engage in sexual activity without the requirement of emotional intimacy or relationship commitment is a stable individual difference in sexuality distinct from other interpersonal aspects of sexuality such as intercourse frequency.

Interpersonal Sexual Behavior

To simplify presentation of the interpersonal sexual behavior results, DSFI Experience items were grouped into the following behavior categories: light petting, heavy petting, oral sex, and intercourse. Composite variables based on these groupings were also computed (see Tables III and IV for the composition of these item groups). Coefficient alphas for these

Table II. Summary of Varimax-Rotated Two Factor Solution of Interpersonal (Factor 1) and Intrapersonal (Factor 2) Sexual Behavior Items[a]

	Male non-Asian		Male Asian		Female non-Asian		Female Asian	
Item	1	2	1	2	1	2	1	2
Light petting	.77	—	.79	—	.64	—	.83	—
Heavy petting	.86	—	.85	—	.83	—	.86	—
Oral sex	.80	—	.76	—	.84	—	.80	—
Intercourse	.86	—	.86	—	.86	—	.86	—
Frequency of intercourse	.82	—	.84	—	.82	—	.84	—
Frequency of petting	.81	—	.82	—	.67	—	.82	—
Virginity status	.78	—	.81	—	.86	—	.87	—
Gender orientation fantasies	—	.51	—	.36	—	.47	—	.63
Intercourse fantasies	—	.68	—	.57	—	.45	—	.48
Masochism fantasies	—	.43	—	.35	—	.72	—	.68
Sadism fantasies	—	.44	—	.32	—	.64	—	.64
Promiscuity fantasies	—	.64	—	.59	—	.74	—	.77
Frequency of sexual fantasies	—	.71	.31	.67	—	.45	—	.55
Masturbating alone	—	.50	—	.71	—	.58	.35	.50
Frequency of masturbation	—	.78	—	.79	—	.70	.31	.54
Age first interested in sex	—	.49	—	.43	—	.57	—	.53
Ideal frequency of intercourse	—	.48	.38	.44	—	.33	—	—

[a]Only items with salient loadings .30 or above are shown.

composites ranged from .95 (light petting) to .92 (intercourse).[5] Composite means are presented in Fig. 1.

Asian versus non-Asian mean endorsement of interpersonal sexual behavior variables are presented in columns 1–4 of Table III. Mean endorsements of these variables for Asians grouped by length of residency in Canada are presented in columns 1–6 of Table IV. *F*-ratios for the effects of gender, Asian status, length of residency, and the interactions of these variables are reported in the final 3 columns of Tables III and IV. Due to accumulating Type I error on mean comparisons across the 27 interpersonal variables, only mean differences of $p < 0.002$ ($p < 0.05/27$) should be considered statistically reliable.

Mean differences between Asians and non-Asians in the present sample were substantial and statistically reliable ($p < 0.002$) for all light petting behaviors including the light petting composite score ($F = 61.61$, $p < 0.002$), and for all heavy petting behaviors including the heavy petting composite score ($F = 62.47$, $p < 0.002$) (Fig. 1). These ethnicity effects were

[5]Composite score does not include the item Anal Sex.

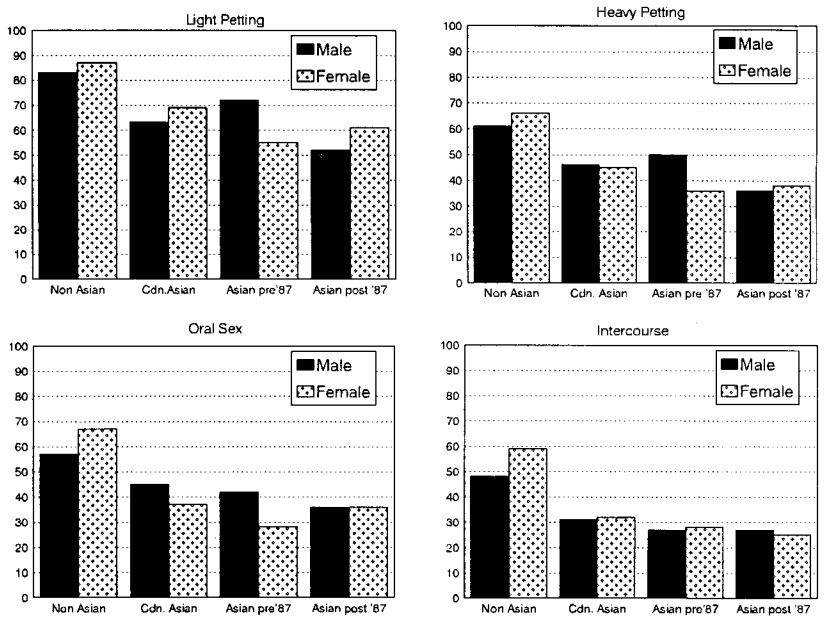

Fig. 1. Ethnic and gender differences in interpersonal sexual behavior (composite scores).

consistent across gender; none of the interactions between gender and ethnicity approached statistical significance. Endorsement of all Oral sex items was substantially and significantly ($p < 0.002$) lower for Asian than non-Asian students (Oral sex composite score, $F = 56.60$, $p < 0.002$), as was endorsement of all intercourse items, including the intercourse composite score ($F = 69.39, p < 0.002$). Thirty-six percent of Asian females compared to 69% of non-Asian females, and 35% of Asian males compared to 63% of non-Asian males had engaged in intercourse (male superior position). Differences in age of first intercourse between Asians and non-Asians were substantial and statistically reliable ($p < 0.001$). Age of first intercourse for non-Asian males and females was approximately 17 compared to 18 for Asian males and females. There were no main effects for ethnicity on the frequency of intercourse and no Gender by Ethnicity interactions. Mean differences in interpersonal sexual behavior between Asian and non-Asian students are presented in Table III.

Across ethnicity, there were no significant differences between males and females in endorsement rates for any of the light or heavy petting

behaviors, or for any of the intercourse experiences. Because a large percentage of students in the present sample had never experienced intercourse, homogeneity of variance on the sexual behavior item frequency of *intercourse* would be precluded in analyses including both virgins and nonvirgins. Therefore, virgin subjects were excluded from the analyses of this variable. Among nonvirgins, there were no significant gender differences in the frequency of intercourse or in the age of first intercourse. To control for the effects of kissing and petting opportunities due to dating status, gender and ethnicity effects for this variable were analyzed only for students who were currently involved in a relationship. Among dating students, there were no significant gender differences in the frequency of kissing and petting. Mean gender differences in interpersonal sexual behavior are presented in Table III.

Overall, length of residency in Canada among Asians was unrelated to mean endorsements of light or heavy petting behaviors, oral sex experiences, mean frequencies of kissing and petting behavior, or to either the occurrence or frequency of intercourse (see Fig. 1). There were no significant Gender by Length of Residency interactions for any of the interpersonal sexual behavior items. Mean gender and ethnicity differences in interpersonal sexual behavior by length of residency are presented in Table IV.

Intrapersonal Sexual Behavior

To simplify presentation of the intrapersonal sexual behavior results, the 20 DSFI Fantasy items were grouped into the following six categories: gender orientation, intercourse (see Footnote 5), masochism, sadism, promiscuity, and miscellaneous (see Tables V and VI for the composition of these item groups). Coefficient alphas for these composite variables ranged from 0.63 (3-item masochism composite) to 0.49 (3-item gender orientation composite). Composite means for intercourse, sadism, masochism, and promiscuity fantasies are presented in Fig. 2.

Asian versus non-Asian mean endorsements of each intrapersonal sexual behavior variable are presented in columns 1–4 of Table V. Mean endorsements of these variables for Asians grouped by length of residency in Canada are presented in columns 1–6 of Table VI. *F*-ratios for the effects of Asian status, length of residency, and the interactions of these variables with gender are reported in the final 3 columns of Tables V and VI. Due to accumulating Type I error on mean comparisons across the 25 intrapersonal variables, only mean differences of $p < 0.002$ ($p < 0.05/25$) should be considered statistically reliable.

Table III. Asian Versus Non-Asian Differences in Interpersonal Sexual Behavior

Item	Male		Female		*F* ratio		
	Non-Asian % Yes	Asian % Yes	Non-Asian % Yes	Asian % Yes	Gender	Ethnicity	E × G[a]
Light petting							
Kissing on the lips	88	72	93	69	0.09	46.10[g]	1.34
Deep kissing	80	65	86	64	0.44	34.46[g]	1.33
Erotic embrace (clothed)	82	62	86	57	0.01	56.70[g]	1.39
Breast petting (clothed)	80	54	85	60	2.41	52.25[g]	0.02
Male lying prone on female (clothed)	83	61	84	58	0.10	49.09[g]	0.19
Kissing of sensitive (nongenital) areas of body	84	66	88	59	0.22	49.63[g]	2.30
Heavy petting							
Stroking and petting your sexual partner's genitals	79	54	82	49	0.08	65.16[g]	0.87
Having your genitals caressed by your sexual partner	78	56	83	47	0.64	69.85[g]	3.45
Breast petting (nude)	77	57	83	55	0.26	43.20[g]	0.90
Mutual undressing of each other	71	54	77	48	0.00	44.68[g]	2.61
Male kissing female's nude breasts	77	61	83	55	0.00	41.35[g]	2.57
Having your anal area caressed	28	22	45	20	4.14	20.36[g]	6.42
Caressing your partner's anal area	31	26	37	16	0.69	15.97[g]	4.97
Mutual masturbation to orgasm	50	31	53	30	0.02	26.91[g]	0.04
Oral sex							
Mutual oral stimulation of genitals	50	38	64	30	0.31	40.60[g]	7.44
Oral stimulation of your partner's genitals	59	42	70	37	0.40	43.64[g]	3.87
Having your genitals orally stimulated	64	44	69	32	1.20	58.92[g]	3.79

Intercourse							
Male superior position	63	35	69	36	0.39	63.02[g]	0.25
Female superior position	58	34	66	33	0.46	58.08[g]	1.02
Vaginal entry from rear	45	27	60	22	1.30	60.15[g]	6.57
Side by side	36	19	50	19	3.30	46.58[g]	2.57
Sitting position	41	28	57	28	4.14	34.54[g]	3.99
Anal	5	6	19	3	6.70	16.04[g]	14.30[g]
n	137–140	117–124	191–192	217–222			
Frequency of intercourse[b,c]	2.70	2.58	3.16	2.77	3.80	02.48	0.59
Frequency of kissing and petting[c,d]	5.72	5.05	5.57	5.19	0.00	05.79	0.26
Nonvirgin status[e]	70	50	72	43	0.70	42.32[g]	1.07
Age of first intercourse[b,f]	16.88	17.92	17.04	18.20	0.37	34.51[g]	0.31

[a]Ethnicity by Gender interaction.
[b]Virgins were excluded for the analyses of this variable.
[c]Means are based on an item response format of 0 (*not at all*), 1 (*<1/month*), 2 (*1-2/month*), 3 (*1/week*), 4 (*2-3/week*), 5 (*4-6/week*), 6 (*1/day*), 7 (2-3/day), and 8 (*≥4/day*).
[d]Subjects who were not currently dating were excluded for the analyses of this variable.
[e]Subjects were coded as nonvirgins if they reported an age at first intercourse.
[f]Values reported are mean ages.
[g]$p < 0.002$.

Table IV. Length of Residency Effects on the Interpersonal Sexual Behavior of Asian Canadian Immigrants[a]

Item	Male			Female			*F* ratio		
	Cdn % Yes	Pre–87 % Yes	Post–87 % Yes	Cdn % Yes	Pre–87 % Yes	Post–87 % Yes	Gender	Length of residency	R × G[b]
Light petting									
Kissing on the lips	67	80	65	82	59	66	0.16	1.44	4.15
Deep kissing	59	74	62	68	56	67	0.11	0.04	2.49
Erotic embrace (clothed)	74	65	49	66	58	52	0.62	3.37	0.45
Breast petting (clothed)	54	62	47	69	53	59	0.80	0.90	1.79
Male lying prone on female (clothed)	69	67	43	69	52	58	0.03	3.16	2.68
Kissing of sensitive (nongenital) areas of body	59	72	65	65	55	61	1.02	0.02	1.59
Heavy petting									
Stroking and petting your sexual partner's genitals	54	63	40	57	42	49	0.35	1.76	2.90
Having your genitals caressed by your sexual partner	59	63	43	60	44	38	2.07	6.04	1.42
Breast petting (nude)	56	59	53	62	50	54	0.03	1.01	0.68
Mutual undressing of each other	54	55	56	55	45	47	1.12	0.52	0.45
Male kissing female's nude breasts	57	64	56	60	48	57	0.67	0.39	1.22
Having your anal area caressed	26	27	15	29	19	16	0.11	1.70	0.46
Caressing your partner's anal area	34	29	18	20	13	14	6.12	1.02	0.79
Mutual masturbation to orgasm	33	30	32	28	31	33	0.06	0.01	0.13
Oral sex									
Mutual oral stimulation of genitals	41	36	35	31	23	35	2.23	0.83	0.53
Oral stimulation of your partner's genitals	41	43	38	44	28	42	0.37	1.29	1.33
Having your genitals orally stimulated	54	43	29	36	31	33	2.74	2.91	1.04

Intercourse	36	30	38	39	36	34	0.08	0.72	0.32
Male superior position	38	30	32	38	31	33	0.00	1.57	0.00
Female superior position	28	20	31	29	20	19	0.61	2.61	0.87
Vaginal entry from rear	18	19	21	23	23	15	0.05	2.18	0.65
Side by side	33	26	26	32	31	25	0.04	2.16	0.12
Sitting position	5	4	9	3	3	4	1.46	0.19	0.24
Anal	35–39	45–47	34–35	69–71	64	76–79			
n									
Frequency of intercourse[c,d]	2.82	2.36	2.52	2.76	2.78	2.78	0.56	0.11	0.24
Frequency of kissing and petting[d,e]	5.07	5.90	3.75	6.14	5.00	4.62	1.19	4.04	2.56
Nonvirgin status[f]	44	45	55	46	42	45	0.67	0.27	0.67
Age of first intercourse[c,g]	17.59	17.18	18.81	17.27	17.85	19.03	0.23	4.94	0.59

[a]Labels are Canadian-born Asian (Cdn), Asians who immigrated to Canada prior to 1987 (pre-87), Asians who immigrated to Canada during or after 1987 (post-87).
[b]Residency by Gender interaction.
[c]Virgins were excluded for the analyses of this variable.
[d]Means are based on an item response format of 0 (*not at all*), 1 (*<1/month*), 2 (*1-2/month*), 3 (*1/week*), 4 (*2-3/week*), 5 (*4-6/week*), 6 (*1/day*), 7 (*2-3/day*), and 8 (*≥4/day*).
[e]Subjects who were not currently dating were excluded for the analyses of this variable.
[f]Subjects were coded as nonvirgins if they reported an age at first intercourse.
[g]Values reported are mean ages.

Table V. Asian Versus Non-Asian Differences in Intrapersonal Sexual Behavior

Item	Male		Female		*F* ratio		
	Non-Asian % Yes	Asian % Yes	Non-Asian % Yes	Asian % Yes	Gender	Ethnicity	E × G[a]
Fantasy total	36	30	31	20	27.08[e]	40.00[e]	3.08
Gender orientation fantasies							
Homosexual fantasies	13	9	24	13	5.98	6.20	1.02
Fantasizing that you are of the opposite sex	14	14	13	10	1.04	.17	0.16
Dressing in clothes of the opposite sex	17	8	9	12	0.41	.38	5.11
Intercourse fantasies							
Having intercourse in unusual positions	88	80	71	37	78.88[e]	53.00[e]	14.87[e]
Anal intercourse	39	28	14	7	62.30[e]	7.96	0.47
Sexual intercourse	96	90	87	75	19.95[e]	12.90[e]	1.34
Masochism fantasies							
Being tied up or bound during sexual activities	51	29	46	26	0.94	33.29[e]	0.05
Being forced to submit to sexual acts	32	27	38	33	2.52	1.59	0.01
Being sexually degraded	7	5	12	7	2.50	3.72	0.92
Sadism fantasies							
Whipping or beating your sexual partner	13	8	6	3	9.46	3.95	0.20
Degrading a sex partner	9	9	4	2	12.10[e]	0.66	0.59
Forcing a partner to submit to sexual acts	28	30	16	11	27.02[e]	0.32	1.51
Promiscuity fantasies							
Mate swapping fantasies	19	15	11	6	13.39[e]	3.59	0.03
Forbidden lover in sexual adventures	51	37	46	27	4.08	21.73[e]	0.29
Being a prostitute	08	11	18	15	7.07	0.04	1.34
Having more than one sexual partner at the same time	78	63	43	21	124.11[e]	28.70[e]	1.08
Miscellaneous fantasies							
Having sexual relations with animals	3	2	6	3	1.92	2.65	0.14
Using artificial devices for sexual stimulation	33	29	34	13	5.68	16.27[e]	5.56
Dressing in erotic garments	36	31	59	43	21.67[e]	10.79[e]	2.04
Oral-genital sex	81	71	63	33	60.73[e]	41.08[e]	7.85
n	144	131	202	225			

Frequency of fantasies[b]	4.86	4.38	3.47	2.43	90.41[e]	23.50[e]	2.73
Masturbating alone	85	74	59	39	70.07[e]	17.57[e]	0.97
Frequency of masturbation[b,d]	3.26	3.59	2.25	2.76	32.25[e]	05.97	0.27
Age of first interest in sex[c]	13.24	13.79	14.53	15.42	48.45[e]	16.06[e]	0.84
Ideal frequency of sexual intercourse[b]	4.66	4.18	4.35	3.42	16.48[e]	32.05[e]	2.70

[a]Ethnicity by Gender interaction.
[b]Means are based on an item response format of 0 (*not at all*), 1 (*<1/month*), 2 (*1-2/month*), 3 (*1/week*), 4 (*2-3/week*), 5 (*4-6/week*), 6 (*1/day*), 7 (2-3/day), and 8 (*≥4/day*).
[c]Numbers reported are actual means.
[d]Subjects who did not endorse the item masturbating alone were excluded for the analyses of this variable.
[e]$p < 0.002$.

Table VI. Length of Residency Effects on the Intrapersonal Sexual Behavior of Asian Canadian Immigrants[a]

Item	Male			Female			*F* ratio		
	Cdn % Yes	Pre–87 % Yes	Post–87 % Yes	Cdn % Yes	Pre–87 % Yes	Post–87 % Yes	Gender	Length of residency	E × G[b]
Fantasy total	33	32	24	22	21	18	23.66[f]	2.79	0.88
Gender orientation fantasies									
Homosexual fantasies	10	4	16	8	19	15	1.33	1.07	2.26
Fantasizing that you are of the opposite sex	18	10	16	8	9	11	1.84	0.41	0.55
Dressing in clothes of the opposite sex	10	02	13	15	8	15	1.51	2.86	0.12
Intercourse fantasies									
Having intercourse in unusual positions	87	88	61	51	34	29	64.18[f]	7.34[f]	1.84
Anal intercourse	38	27	18	10	5	7	28.21[f]	1.42	1.89
Sexual intercourse	95	92	82	82	81	67	8.24	3.26	0.08
Masochism fantasies									
Being tied up or bound during sexual activities	33	39	16	35	30	16	0.28	5.31	0.44
Being forced to submit to sexual acts	23	31	24	31	30	38	1.55	0.11	0.71
Being sexually degraded	5	6	5	7	5	9	0.20	0.32	0.26
Sadism fantasies									
Whipping or beating your sexual partner	3	10	8	3	2	4	3.46	0.73	1.16
Degrading a sex partner	8	12	8	1	2	2	10.16	0.31	0.48
Forcing a partner to submit to sexual acts	31	31	34	10	14	10	23.02[f]	0.15	0.29
Promiscuity fantasies									
Mate swapping fantasies	26	16	5	6	5	06	10.12	1.15	3.60[f]
Forbidden lover or mistress in sexual adventures	54	43	13	33	34	16	2.88	8.98[f]	1.83
Being a prostitute	10	16	3	10	17	17	1.65	1.36	1.58
Having more than one sexual partner at the same time	72	73	42	29	22	12	75.36[f]	7.77[f]	1.73
Miscellaneous fantasies									
Having sexual relations with animals	5	0	0	1	3	5	0.77	0.38	2.29
Using artificial devices for sexual stimulation	28	35	24	14	13	13	13.14[f]	0.35	0.66
Dressing in erotic garments	30	31	32	44	44	40	4.69	0.05	0.08
Oral-genital sex	79	76	58	42	38	24	48.45[f]	3.77	0.10
n	41	51	39	74	67	84			

Frequency of fantasies[c]	4.92	4.55	3.66	2.22	2.60	2.52	56.75[f]	0.49	3.19
Masturbating alone	80	73	74	44	36	39	42.20[f]	1.06	0.04
Frequency of masturbation[c,e]	3.69	03.55	03.52	02.58	03.35	02.57	8.96	0.66	1.39
Age of first interest in sex[d]	12.74	13.61	15.06	14.82	15.61	15.71	24.64[f]	3.75	2.52
Ideal frequency of sexual intercourse[c]	4.38	3.88	4.34	3.09	3.72	3.48	12.79[f]	0.62	2.68

[a]Labels are Canadian-born Asian (Cdn), Asians who immigrated to Canada prior to 1987 (pre-87), Asians who immigrated to Canada during or after 1987 (post-87).

[b]Residency by Gender interaction.

[c]Means are based on an item response format of 0 (*not at all*), 1 (*<1/month*), 2 (*1-2/month*), 3 (*1/week*), 4 (*2-3/week*), 5 (*4-6/week*), 6 (*1/day*), 7 (*2-3/day*), and 8 (*≥4/day*).

[d]Numbers reported are actual means.

[e]Subjects who did not endorse the item *masturbating alone* were excluded for the analyses of this variable.

[f]$p < 0.002$.

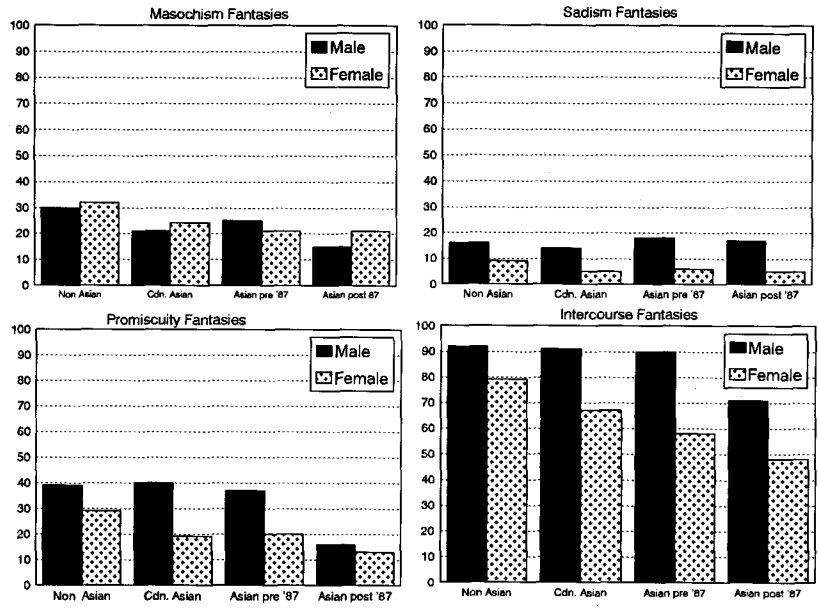

Fig. 2. Ethnic and gender differences in intrapersonal sexual behavior (composite scores).

Substantial main effects of both gender and ethnicity were obtained for fantasies about intercourse. Endorsement of all intercourse fantasies was significantly higher for male than female students and for non-Asian than Asian students ($p < 0.002$) (intercourse composite score for gender, $F = 112.17$, $p < 0.002$; ethnicity, $F = 47.62$, $p < 0.002$). Overall, 35% of males compared to 11% of females indicated that they had an anal intercourse fantasy (Fig. 2), and 71% of non-Asian females vs. 37% of Asian females fantasized about having intercourse in unusual positions. Endorsement of masochism item, *being tied up or bound during sexual activities* was significantly lower for Asian (26%) vs. non-Asian (46%) females and for Asian (29%) vs. non-Asian (51%) males. The masochism composite score differed significantly between Asians and non-Asians ($F = 16.75$, $p < 0.002$), but not between males and females. There were significant main effects of gender, but not ethnicity, on all of the sadism fantasy variables, including the sadism composite score ($F = 31.03$, $p < 0.002$). Overall, 29% of males vs. 13% of females endorsed this item (see Fig. 2), and 10% of males vs. 5% of females endorsed the fantasy variable *whipping or beating your sexual partner.* Endorsement of fantasy variables *having more than one sexual partner at the same time* and *mate-swapping fan-*

tasies was significantly higher for males than females. Fantasy variables *having more than one sexual partner at the same time* and *forbidden lover in sexual adventures* were endorsed significantly more frequently among non-Asian females than Asian females and among non-Asian males than Asian males (see Fig. 2). The promiscuity composite score showed significant effects for both gender ($F = 34.07$, $p < 0.002$) and ethnicity ($F = 24.73$, $p < 0.002$) (Fig. 2). Males were significantly more likely to endorse the fantasy item *oral–genital sex* than females, and females were significantly more likely to endorse the fantasy item *dressing in erotic garments* than males. Endorsement of variables *using artificial devices for sexual stimulation, dressing in erotic garments,* and *oral–genital sex* was substantially and significantly ($p < 0.002$) lower for Asian than non-Asian individuals. There were no significant effects of gender or ethnicity for any of the gender orientation fantasies, but substantial and significant main effects for both gender and ethnicity on the frequency of fantasies. On average, males fantasized four to six times per week, whereas females fantasized about two to three times per week. Asian males fantasized less than non-Asian males and Asian females fantasized less than non-Asian females.

Endorsement of the experience variable *masturbating alone* differed significantly and substantially between both gender and ethnic groups. Marginal means collapsed across ethnicity indicate that 80% of males compared with 48% of females reported having masturbated at least once. In addition to gender differences in masturbation incidence, there were significant gender differences in the frequency of masturbation among individuals who masturbate; females masturbated significantly less frequently than males ($p < 0.002$). With respect to ethnicity, Asians were less likely to engage in masturbation than non-Asians: Eighty-five percent of non-Asian males vs. 74% of Asian males, and 59% of non-Asian females compared with 39% of Asian females endorsed the item *masturbating alone.*

Significant main effects for both gender and ethnicity were found for the variable *age of first interest in sex.* Among non-Asians, mean age of first interest in sex was 13.2 years for males, and 14.5 for females. Among Asians, the comparable ages were 13.7 and 15.4 years for males and females, respectively. Mean endorsement of the intrapersonal variable *ideal frequency of intercourse* differed significantly between both gender and ethnic groups. Undergraduate males reported wanting intercourse more often than did undergraduate females, and non-Asian students reported a significantly higher estimate for ideal frequency of sexual intercourse than did Asian students. The only significant gender by ethnicity interaction was for the fantasy variable *having intercourse in unusual positions;* among non-Asians there was no significant difference in endorsement rates between males and females for this item, but among Asians, males were significantly

more likely to endorse the item than females. Mean gender and ethnicity differences in intrapersonal sexual behavior are presented in Table V.

Among Asians, length of residency in Canada was positively related to the endorsement of only one intercourse fantasy item, *having intercourse in unusual positions.* The composite score for intercourse fantasies, however, was significantly, positively related to length of residency; Canadian-born Asians were less likely to endorse intercourse fantasies than recent Asian immigrants ($F = 7.92, p < 0.002$) (Fig. 2). Among Asians, promiscuity fantasy variables *Forbidden lover in sexual adventures* and *having more than one sexual partner at the same time* varied significantly as a function of length of residency in Canada; Canadian-born Asians were more likely to endorse these items than Asian immigrants. The promiscuity composite score was significantly, positively related to length of residency in Canada ($F = 7.97, p < 0.002$) (Fig. 2). Length of residency in Canada among Asians was unrelated to mean endorsements of gender orientation, masochism, or sadism fantasies, or to the frequency of either fantasizing or masturbation, the ideal frequency of sexual intercourse, or to the age of first interest in sex. The interaction between gender and length of residency was not significant for any of these variables. Mean gender and ethnicity differences in intrapersonal sexual behavior by length of residency are presented in Table VI.

Sociosexual Restrictiveness

As expected in this relatively sexually inexperienced population, distribution of the sociosexual behavior items *(lifetime number of partners, number of partners in the past year, predicted number of sexual partners, number of one-night stands)* were highly positively skewed; in all subsamples, the majority of subjects reported having either 0 or 1 sexual partner. As a result, square root transformations were performed on the SOI behavior variables to normalize distributions. ANOVA results for both the transformed and untransformed variables are reported in columns 5–7 of Table VII. Asian versus non-Asian frequencies of sociosexual restrictiveness items are presented in columns 1–4 of Table VII. Given the skewness in the distribution of variables, frequency intervals (0, 1, 2–5, 6–10, >10) rather than means were chosen for the reporting of these items.

There were substantial and significant differences between Asians and non-Asians on all of the sociosexual restrictiveness items. When compared to Asian males and females, non-Asian males and females reported having a higher lifetime number of partners, more sexual partners in the past year, a higher number of predicted sexual partners, more one-night stands, and

were more likely to fantasize about someone other than their steady dating partner.

Significant gender differences were apparent for lifetime number of one-night stands, and predicted number of sexual partners in the next 5 years. In comparison with females, males reported having experienced a greater number of one-night stands, predicted a greater number of sexual partners in the next 5 years, and reported more frequent fantasies about having sex with someone other than their steady dating partner. By contrast, there were no significant mean differences between males and females in self-reported lifetime number of sexual partners, or number of sexual partners in the past year. Furthermore, differences between males and females were not apparent at any of the five frequency intervals shown in Table VII. Length of residency in Canada among Asians was unrelated to mean endorsements of any of the sociosexual restrictiveness items and therefore these data have been omitted from Table VII. Mean gender and ethnicity differences in sociosexual restrictiveness items are presented in Table VII.

DISCUSSION

Gender Differences in Sexual Behavior

Findings from this study indicate that, with the exception of one variable, there were no significant gender differences on measures of interpersonal sexual experience, including light petting, heavy petting, oral sex, intercourse, lifetime number of sexual partners, or number of sexual partners in the past year. This finding held true for both Asian and non-Asian students and across length of residency in Canada among Asian students. The finding that there were no significant gender differences in interpersonal sexual behavior among Asian students differs from that of Huang and Uba (1992) who reported significant gender differences in kissing, necking, and both light and heavy petting behaviors in a small sample of Asian undergraduates in an American University. For example, 81% of females versus 55% of males reported having experienced light petting behavior (Huang and Uba, 1992).

Among measures of interpersonal sexual behavior, significant differences between males and females were found for only two variables, reported number of one-night stands, and anticipated number of sexual partners over the next 5 years. For both of these variables, and within both ethnic groups, males reported higher values than females. These findings are consistent with the gender difference typically found for attitudes and

Table VII. Asian Versus Non-Asian Endorsement of Sociosexual Restrictiveness Items

Item	Male		Female		*F* ratio[a]		
	Non-Asian %	Asian %	Non-Asian %	Asian %	Gender	Ethnicity	E × G[b]
How many different partners have you had sex with in your lifetime?					1.84 (1.20)	23.08[f] (44.52)[f]	0.96 (0.23)
0	29	37	24	48			
1	32	35	25	29			
2–5	18	21	23	19			
6–10	12	6	13	2			
>10	9	1	15	1			
How many different partners have you had sex with in the past year?					1.92 (1.33)	27.41[f] (28.87)[f]	0.11 (0.89)
0	40	48	28	57			
1	34	39	43	32			
2–5	23	12	27	11			
6–10	2	01	2	0			
>10	1	0	0	0			
How many different partners do you foresee yourself having sex with in the next 5 years?					10.46[f] (14.00)[f]	21.36[f] (26.69)[f]	2.38 (4.26)[d]
0	4	4	5	15			
1	32	46	39	49			
2–5	54	44	50	35			
6–10	7	4	3	1			
>10	3	1	3	0			

How many partners have you had sex with on only one occasion?					6.25[e] (6.15)[e]	4.97[d] (10.81)[f]	3.61 (0.14)
0	52	59	49	65			
1	29	30	30	31			
2–5	13	10	19	3			
6–10	2	1	2	1			
>10	4	0	1	0			
How often do you fantasize about having sex with someone other than your steady dating partner?[c]	4.49	4.06	3.07	2.27	39.21[f]	6.96[e]	0.48

[a]Values in parentheses are for square root transformed variables.
[b]Ethnicity by Gender interaction.
[c]All means are based on an item response format of 0 (*not at all*), 1 (*<1/month*), 2 (*1-2/month*), 3 (*1/week*), 4 (*2-3/week*), 5 (*4-6/week*), 6 (*1/day*), 7 (*2-3/day*), and 8 (*≥4/day*). Subjects who were not currently dating were excluded for the analyses of this item.
[d]$p < 0.05$.
[e]$p < 0.01$.
[f]$p < 0.001$.

behavior regarding nonmarital sex. For example, Janus and Janus (1993) indicated that 37% of females vs. 15% of males strongly agreed that one-night stands are degrading. Similarly, in their meta-analysis of gender differences in sexuality, Oliver and Shibley Hyde (1993) reported that, compared to females, males held significantly more permissive attitudes toward casual sex (see also Buss and Schmitt, 1993; Clark and Hatfield, 1989; Kenrick *et al.,* 1990).

Among non-Asians, females in the present study tended to be more sexually experienced than males, and among Asians, females tended to be less sexually experienced than males on all measures of interpersonal sexual behavior. This trend, however, was statistically significant only for the oral sex items. This finding among Asians contrasts with that of Cochran *et al.* (1991) who reported a higher percentage of Asian females (86%, $n = 44$) than males (75%, $n = 28$) had engaged in oral sex. Thirty-seven percent of Asian females in the present study had performed fellatio on their partners and 32% had experienced cunnilingus. These numbers are significantly lower than those reported by Herold and Way (1983) who found 61% of Asian females ($n = 250$) had performed fellatio on their partners and 68% had experienced cunnilingus. These differences may be attributable to differences in sampling; Herold and Way (1983) sampled students from an undergraduate sexuality course, whereas in the present investigation, students were sampled from introductory psychology classes. Asian students who enroll voluntarily in a course in sexuality may tend to engage in a greater variety of sexual activities than those who do not.

With respect to the finding that female non-Asians reported higher levels of sexual experience than male non-Asians, it is important to note that gender comparisons in this study were made between males and females of the same age. Because females of this age generally date men who are older than themselves and males typically date younger females (Johnson *et al.,* 1990), females in this sample may have had dating partners who were, on average, considerably more sexually experienced than the dating partners of the same-aged males. The females in this sample may, therefore, have been more sexually experienced simply because of greater exposure to a variety of sexual experiences. If gender differences in partner experience do exist at this age group, comparison of, for example, 18-year-old females with 20-year-old males may be more meaningful, at least with respect to interpersonal sexual experience.

The finding that males and females did not differ on measures of interpersonal sexual behavior, lifetime number of sexual partners, or the number of sexual partners in the past year, is consistent with reports indicating a narrowing over the last few decades of gender differences in self-reported premarital sexual experience. Oliver and Shibley Hyde (1993)

reported a significant correlation, for example, between the magnitude of such gender differences and the year in which the data were collected. Studies conducted in the 1960s showed moderate to large gender differences in petting, intercourse incidence, and number of sexual partners. By comparison, studies conducted in the 1980s revealed much smaller gender differences in interpersonal sexual behavior. There are several possible explanations for this trend, including the introduction of highly effective birth control methods in the early 1960s, and the change in social attitudes toward females as a consequence of feminist activism. This change in reported sexual interest and experience among females naturally raises the question of veridicality with respect to female's and male's self-reported sexual experiences. If females systematically underreport and males overreport their sexual experiences as a function of sex-role norms (Smith, 1993), one wonders to what extent gender differences in interpersonal sexual experience in past decades reflected differential reporting biases associated with the more divergent sex-role stereotypes of that time. It is known, for example, that the frequency of sexual activity among married couples is systematically distorted by husbands and wives in a direction consistent with sex-role norms (Levinger, 1966). The role of response biases in inflating gender differences in reported sexual experiences remains an important research question.

In contrast to the absence of gender differences on measures of interpersonal sexual behavior, findings from the present study indicate significant gender differences on virtually all measures of intrapersonal sexual behavior. Males were more likely than females to endorse a wide range of sexual fantasies, to report a higher frequency of fantasizing, to have engaged in masturbation, and to masturbate more frequently. This effect was true for both non-Asian and Asian students and across length of residency in Canada among Asians. The finding that males endorsed a higher number of sadism (e.g., forcing a partner to submit to sexual acts; 32% males vs. 10% females) and promiscuity fantasies (e.g., having more than one sexual partner at the same time; 63% males vs. 21% females) is consistent with reports by Knafo and Jaffe (1984) who found that male students were more likely to fantasize about humiliating a sexual partner than female students, and more likely to fantasize about having sex with more than one person at a time than females.

Given the present finding of gender differences on most fantasy items, the absence of gender differences in endorsement of masochism fantasies deserves comment. This finding differs from that of Knafo and Jaffe (1984) who found that, among American students at Tel Aviv University, females were more likely to fantasize about being overpowered or forced to surrender to sex compared with males. The present null finding is, however,

consistent with research on sadomasochists which indicate that males and females do not differ in their desire to play the "submissive" role (Breslow *et al.,* 1985). The finding that over one third of the females in the present investigation fantasized about being forced to submit to sexual acts is consistent with findings from a study on women's fantasies during sexual intercourse which indicated that, among 141 suburban housewives, the fantasy about being overpowered or forced to surrender was among the most frequently endorsed items (Hariton and Singer, 1974).

The finding of a significant gender difference in masturbation incidence among non-Asian students is consistent with results from early studies conducted in both general population samples (e.g., Hunt, 1974; Kinsey *et al.,* 1948, 1953) and in university student samples (e.g., Arafat and Cotton, 1974; Atwood and Gagnon, 1987; Cowart and Pollock, 1979; Miller and Lief, 1976). More recently, Leitenberg *et al.* (1993) reported that approximately twice as many male as female undergraduates reported having ever masturbated. In a nationally representative sample, Janus and Janus (1993) found comparable gender differences in masturbation within a similar age group (18–26). Gender differences in masturbation among Asian students in the present study are similar to those reported by Chan (1990) who found 77% of males and only 29% of female Chinese students in Hong Kong reported ever having masturbated. Overall, gender differences in masturbation in the present samples are similar to those reported in a recent meta-analysis of gender differences in sexuality. In their review, Oliver and Shibley Hyde (1993) obtained the largest average gender effect size for measures of masturbatory behavior. They also observed that, over the past few decades, gender differences in masturbation have remained remarkably constant while, as noted above, gender differences in most other sexual behaviors have markedly declined.

One potential explanation for this resilient gender difference is that early gender differences in genital self-manipulation, differences that are neither caused nor easily eliminated by socialization, set the stage for enduring gender differences in autoerotic behavior. As noted by Kinsey *et al.* (1948), preadolescent sexual stimulation is considerably more common among young boys than young girls. This may be due to the fact that penile erections in young boys are more salient than clitoral or vaginal arousal in young girls (cf. Hyde, 1979, cited in Leitenberg *et al.,* 1993). Relative to females, males may find that genital stimulation is pleasurable at an earlier age. Perhaps it is not surprising that learning how to masturbate is much more likely to be part of a treatment program for sexual dysfunction in women (LoPiccolo and Lobitz, 1972; Heiman *et al.,* 1976) than in men.

An alternative explanation for gender differences in masturbation is the lower incidence of fantasies during masturbation in women. Kinsey *et*

al. (1953) reported that fantasies during masturbation were significantly less frequent in women than men, and were more common in older than younger women. They also noted that, in contrast to men's fantasies, women's masturbatory fantasies tended to be limited to activities they had actually experienced in the past. More recent evidence suggests that the gender difference in masturbatory fantasies has not declined. For example, Jones and Barlow (1990) reported that only 12% of women who masturbate always fantasize during masturbation versus 59% of men. This compared with 44% of women who fantasize less than 25% of the time during masturbation versus 7% of men. Thus, women may masturbate less because they fantasize less during masturbation. Perhaps engaging in fantasy increases the level of sexual arousal which in turn would make the act of masturbation more reinforcing. Consistent with this hypothesis is evidence that women who report more frequent use of fantasy during masturbation tend also to exhibit increased vaginal responses to erotic stimuli (Stock and Geer, 1982). In terms of clinical implications, if masturbation training is a component of treatment for orgasmic dysfunction, it would seem wise to encourage the use of sexual fantasy during masturbation.

While it is possible that gender differences in fantasy underlie gender differences in masturbation frequency, it may, alternatively, be the case that gender differences in masturbation and fantasy are due to the same socialization and/or genetic factors. As suggested by Leitenberg *et al.* (1993), one explanation for the persistent gender gap in masturbation is that underlying biological differences between males and females account for the difference. These authors mention hormonal or anatomical differences as potential causes, but concede such biological hypotheses are purely speculative. In support of this explanation, however, Leitenberg *et al.* noted that masturbation appears to be more frequent in the male than in the female for many species of primates and subprimates (Ford and Beach, 1951).

A key problem for a social learning explanation of gender differences in intrapersonal sexual behavior (e.g., fantasy and masturbation) is the relative absence of gender differences today in attitudes toward engaging in sexual fantasy and masturbation. If gender differences in masturbation and fantasy are primarily due to differential sexual socialization between males and females and, consequently, greater "sex-guilt" among females than males, it is not clear why time has selectively narrowed the gender gap in sexual activity but not sexual fantasy or masturbation The apparent desynchrony between female's attitudes and behavior with respect to masturbation and sexual fantasy is an important issue for future research on gender differences in sexuality.

Asian Versus Non-Asian Differences in Sexual Behavior

Findings from this study reveal significant and substantial ethnic differences on all measures of interpersonal sexual behavior including light petting, heavy petting, oral sex, and intercourse; and intrapersonal sexual behavior including frequency of fantasies, masturbation incidence and frequency, and ideal frequency of intercourse; and all sociosexual restrictiveness measures including lifetime number of sexual partners, number of sexual partners in the past year, predicted number of sexual partners, and lifetime number of one-night stands. The percentage of Asians who had experienced intercourse in the present sample (35%) is comparable to that reported by Huang and Uba (1992) who found approximately 40% of Chinese college students in America had engaged in premarital intercourse. The age of first intercourse among non-Asians in the present sample was slightly lower than that reported by DeLamater and MacCorquodale (1979) who found a mean age of first intercourse of 17.5 and 17.9 years for males and females, respectively. Similarly, the age of first intercourse among Asians in the present sample was somewhat lower than that reported by Huang and Uba (1992) who found in their sample of Chinese undergraduates in California, the mean age for first experiencing intercourse was 18.5 and 18.8 years for males and females, respectively.

The most reasonable explanation for the striking ethnic difference in sexual behavior is that it reflects differences in cultural norms. It has been well documented that, relative to North American standards, Chinese culture places a greater emphasis on propriety, and the observance of strict moral and social codes (Ng and Lau, 1990). Many authors have suggested this social conservatism has led to the suppression of sexual needs and expression among the Chinese people (e.g., Suen, 1983; Tseng and Hsu, 1970). As noted by Chan (1986), commenting on sexuality in Hong Kong,

> Sex is a taboo subject in the Chinese culture, where sex education in the schools is minimal, where parents are reluctant to discuss sexual information with their children, and where health professionals, including physicians, are generally found to be inadequate in providing sexual information and counseling to patients. It can be argued that there may be a general lack of sex knowledge among Chinese males and females in Hong Kong, which may particularly account for the lack of openness towards obtaining sex information.

It is conceivable, of course, that cultural differences in sexuality in the present study are more apparent than real. For example, it may be that Asians do not differ from non-Asians in their expression of sexual behavior but, rather, they differ in their willingness to report sexual experiences. It may be more culturally acceptable for non-Asian individuals to openly discuss and/or admit to having sexual encounters than it is for Asian individu-

als (Chan, 1990). Although steps were taken in this study to maximize honest self-disclosure—administration of questionnaires in an anonymous and confidential laboratory setting, and periodic reminders within the questionnaire for honesty and accuracy—one cannot entirely rule out the possibility of systematic distortion in sexual reporting. A more likely explanation for the differences in reported sexual behavior between Asians and non-Asians is that they reflect actual differences in sexual activity resulting from divergent cultural norms.

In an influential article, Markus and Kitayama (1991) reviewed evidence suggesting that cultural differences in conceptions of the self have important implications for social behavior. According to Markus and Kitayama, *independent* self-construals, which stress a unitary, stable, and bounded conception of the self, typically emphasize individualist values such as uniqueness, self-reliance, and self-expression. Conversely, *interdependent* self-construals, which stress a more flexible, variable, and contextual conception of the self, typically emphasize collectivist values such as social harmony, fitting in, and propriety of feeling, belief, and action. These two forms of self-construal are thought to be characteristic of Asian (collectivist) versus Western (individualist) cultures (Markus and Kitayama, 1991). It has been suggested that these differences in individualist versus collectivist value orientations (Triandis, 1987, 1994) account for differences in sexual attitudes and behavior between Asians and North Americans.

> Any culture with collectivist social pressures and concerns for social hierarchy will tend to suppress sexual behavior. Like aggression, sexual attraction must be carefully suppressed and channeled. For a freer sexuality may create potent jealousies within groups and lead people to defy their parents' choice of a suitable mate. In individualistic cultures, expression of sexuality is one aspect of the pursuit of happiness. (Bond, 1991, p. 16)

One difficulty with this macrocultural explanation of Asian sexual restraint is that Markus and Kitayama (1991, citing Beattie, 1980) also consider African cultures to be interdependent or collectivist. Evidence suggests, however, that Africans may be *lower* in sexual restraint than Europeans or North Americans. For example, according to Hofmann's (1984) review of worldwide rates of premarital intercourse, African adolescents are more sexually active than Europeans, who in turn, are more sexually active than Asians (Rushton and Bogaert, 1987; for a review, see Rushton, 1994, pp. 170-183). If Asian and African cultures are similarly collectivist, it is not clear why collectivism would induce sexual restraint among Asians and not among Africans, relative to individualist cultures. Examination of differences between Asian and African variants of interdependent cultural value systems that might explain Asian–African differences in sexuality are beyond the scope of the present discussion.

Because ethnic Chinese constitute a majority of the Asian participants in the present sample, an additional, more parochial cultural explanation of ethnic effects in this study merits attention. Although social norms of extreme sexual restraint in the People's Republic of China are well known, and have served an explicit role in the maintenance of social order and political control by the Chinese Communist Party since its inception (Ruan, 1991), their origins clearly predate 20th-century political developments in China. Space precludes detailed discussion of various hypotheses regarding the historical roots of Chinese sexual restraint. Two are briefly noted here. One view is that Chinese cultural norms of extreme sexual restraint are rooted in the Qing Dynasty's (1644–1910) formal imposition of Confucian asceticism as a mechanism of political control (Pan, 1993). Ruan (1991) has suggested a somewhat earlier source, namely, a particular school of neo-Confucian philosophy that became popular during the Song dynasty (960–1279 A.D.) and subsequently dominated government social policy in China until the end of the empire in 1911.

One additional, and notably contentious, account of ethnic differences in sexuality, is the hypothesis of "racial" (i.e., biological or genetic) differences among ethnic groups in sexual expressiveness and drive (Rushton, 1985, 1988, 1989, 1992, 1994; Rushton and Bogaert, 1987). Many of the premises associated with this hypothesis have been effectively and appropriately challenged (Lynn, 1989; Weizmann *et al.*, 1990, 1991; Zuckerman and Brody, 1988; Zuckerman, 1990; see Rushton, 1994, for a response to these criticisms). Nevertheless, the present findings that Asians differ from non-Asians on most measures of sexual behavior, and that Canadian-born Asians do not differ from foreign-born Asians, could be interpreted as evidence of a racial and therefore genetic difference in sexual behavior. Racial differences in sexual response are not impossible, in principle. Animal evidence suggests that within-species genetic variation may indeed modulate sexual activity. For example, genetic strain differences exist in the female mouse with respect to sensitivity to gonadal hormones (Gorzalka and Whalen, 1976). Assuming there are no major differences in circulating hormone levels, genetic differences in sensitivity to hormones could nevertheless contribute to variability in sex drive. Racial hypotheses are encumbered, however, by at least two extraordinarily contentious scientific issues: (i) whether or not "race" possesses adequate validity as a scientific construct to reasonably allow genetic hypotheses, and (ii) whether or not complex, phenotypic social traits are too polygenically interactive with culture to permit adequate, independent specification of genetic and cultural effects on race differences. For discussions of the logical, methodological, and moral issues in specifying the construct of race, and in testing racial hypotheses,

see Gould (1981), Lerner (1992), Lewontin *et al.* (1984), Littlefield *et al.* (1982), Shipman (1994), and Yee *et al.* (1993).

Length of Residency Influences on Sexual Behavior

Among Asians in the present investigation, length of residency in Canada had no influence on any measure of interpersonal sexual behavior or sociosexual restrictiveness, or on most measures of intrapersonal behavior. It was anticipated that Canadian-born Asians would differ in their expression of sexuality from recent Asian immigrants in that they would be more liberal or, in other words, more similar to non-Asian students (Gordon, 1964). One possibility for the lack of difference among Asians is that the definition of ethnicity used in the present investigation was confounded with immigrant status. Asian individuals were defined as either being born in an Asian country, having either parent born in an Asian country, or having their first language an Asian language. This definition limited the Asian sample to first-generation Asian individuals.

The definition of ethnic status used in this study proved to be highly convergent, however, with ethnic self-identification. Data from a recent questionnaire study conducted by Campbell (1993) provided an opportunity to evaluate the degree of association between Asian status as defined in the present investigation and self-reported ethnic identification. Self-reported Asian ethnic status was dichotomously defined by responses to the question: "What is your predominant ethnic background (e.g., European, Chinese, East Indian, African)?". In a sample of 610 introductory psychology students, this index correlated .92 ($p < 0.001$) with Asian status as defined in the present study. This suggests that results in the present study would not have differed had Asian status been defined by ethnic self-identification.

A second possible explanation for a lack of residency effects in the present study is that language difficulties (e.g., unfamiliarity with various English sexual terms) among Asian subjects led some respondents in each length of residency group to leave items blank or to endorse "no" for terms they did not understand. In other words, similarities among the three Asian groups in language difficulties may have offset potential acculturation effects on sexual behavior. This hypothesis is based on the assumption that English proficiency levels were similar (i.e., similarly low) among the three length of residency groups. Results from an analysis of the degree of association between English as a first language and length of residency status indicated that this does not account for the present results. English as a first language correlated .56 ($p < 0.001$) with length of residency status. As one would expect, Canadian-born Asians were much more likely than Asian

immigrants to speak English as a first language, and therefore less likely than Asian immigrants to obtain spuriously low sexual experience scores because of failure to understand questions. Clearly, an "English as a Second Language" hypothesis cannot explain why self-reports of both interpersonal and intrapersonal sexual behavior were much more similar among foreign and Canadian born Asians than between the latter group and non-Asians.

While a high correlation between Asian status defined by country of birth and Asian status defined by ethnic self-identification supports the validity of the ethnic status index used in the present study, the correlation is so high that it suggests an alternative explanation for the lack of acculturation effects: restriction of range in the assessment of acculturation. It is possible that many acculturation effects are not strong enough to be identified until the second generation following immigration. A .92 correlation between ethnic identification and respondents' (or respondents' parents') country of birth may indicate that second- and third-generation Asian Canadians were not well represented in the present sample. The findings of this study do suggest, however, that acculturation effects on the sexuality of East and Southeast Asian immigrants are not readily apparent in the first generation of residency.

Research that has used both length of residency and other measures of acculturation lend further support to the findings in the present study. Huang and Uba (1992) found that there was no relation between attitudes toward sexual permissiveness and the number of years of residence in the United States, and no significant association between acculturation as measured by the culture of upbringing, social-structural assimilation, cultural assimilation, and social or cultural attitudes, and level of sexual experience. They did, however, find a significant positive correlation between having experienced premarital sexual intercourse and level of acculturation, and a significant negative relationship between acculturation and age of first coital experience.

While there were no length of residency effects among Asians for most measures of sexual behavior used in the present investigation, it is interesting to note that the composite scores for promiscuity fantasies and intercourse fantasies differed significantly as a function of the number of years in Canada. Given both these variables are measures of intrapersonal sexual behavior, it may be the case that changes in intrapersonal sexual behavior, as a function of length of residency in North America, precede changes in overt or interpersonal sexual behavior. Moreover, if one accepts that intrapersonal sexual behavior reflects underlying sexual drive, the finding that exposure to North American sexual norms influenced some measures of intrapersonal sexual behavior argues against a biological explanation for differences in sexual behavior between Asian and non-Asian individuals.

Finally, it should be noted that the Asian students in the present study report somewhat higher levels of sexual experience than Asian students in Hong Kong (i.e., Chan, 1990; Family Planning Association of Hong Kong, 1987). For example, 36% of the Asian females and 35% of the Asian males in the present study had experienced intercourse compared with 4% of the Asian females and 6% of the Asian males studied in Hong Kong (Chan, 1990). Given these differences were apparent regardless of the number of years in Canada, it may be that, in general, Asians who immigrate to North America are more sexually liberal than those who do not.

Implications

The finding that Asian students differ from non-Asian students on all measures of sexual behavior and Canadian-born Asians do not differ from recent Asian immigrants on any measure of sexual behavior has important implications for both research on sexuality and clinical practice. First, with respect to investigations of sexuality, these findings suggest that normative standards of sexual behavior in North America should be qualified by ethnic status and, where possible, descriptive statistics should be presented separately for ethnic subgroups. Given the magnitude of ethnic effects in the present study, failure to do so when conducting sex research using ethnically heterogeneous samples, could lead to inaccurate generalizations. Second, manipulation in the laboratory of various aspects of sexual behavior should either employ a homogeneous group with respect to ethnicity, should subdivide groups such that ethnicity is evenly distributed, or should include information on the subjects' ethnic backgrounds. Without such information, one cannot be certain that effects, or lack of effects, are not partially attributable to differences between groups in ethnicity. It should be noted, that Asian subjects in the present investigation cannot be considered a truly homogeneous group, given they are predominantly one ethnic group (70% Chinese), but also include individuals of various Southeast Asian ancestry (e.g., South Korea, Taiwan, Vietnam).

The finding that, among Asian individuals, sexual behavior did not vary as a function of the number of years living in Canada, suggests that length of residency may not be an appropriate means for measuring the influence of North American culture on sexuality. Length of residency, as a means of measuring acculturation, assumes that, given time, minority groups will incorporate the cultural norms of the dominant group. This theory is based on the assumption, however, that minority groups will want or tend to assimilate rather than create their own ethnic institutions. As noted by Blauner (1972) there may be wide variability among immigrants in their

desire to assimilate. Perhaps then it would make more sense to measure motivation for assimilation rather than length of residency when assessing the influence of North American culture on the sexual behavior of ethnic minorities. On the other hand, attitudinal and motivational indices of assimilation may be confounded by stable personality factors such as openness to experience (McCrae and Costa, 1985) to a greater extent than are behavioral indices. Ideally, future research on ethnic and acculturation effects on sexuality should use multifaceted measures of acculturation which include behavioral indices of cultural exposure, measures of attitudes and values regarding assimilation, measures of cultural identification, and multigenerational indices of residency status (e.g., Suinn and Ahuna, 1992).

Differences in sexual behavior between Asian and non-Asian individuals must also be taken into consideration in clinical practice. First, when diagnosing sexual concerns, care must be taken to ensure that the individuals are examined within their appropriate sociocultural value system. Interpreting sexual behavior among Asians in terms of white middle-class norms could lead to a negative framework in which differences are viewed as deficits in innate ability. In addition, treatments that are appropriate or desirable for Caucasian individuals are not necessarily equally acceptable or desirable for Asian persons. For example, while directed masturbation has proven highly effective in the treatment of anorgasmia in women (LoPiccolo and Stock, 1986; Heiman *et al.*, 1976), given the large reported difference in masturbation incidence between non-Asian and Asian females (59 and 39%, respectively), this technique may be less successful when treating Asian versus Caucasian women.

The findings from this study have implications for future research on ethnic and gender differences in sexual behavior. First, given that self-reports of sexual behavior are subject to impression management, future research should evaluate potential differences between ethnic groups in the type and magnitude of such self-report biases on sexual behavior. For example, there may be ethnic main effects in reporting biases, and these effects may be qualified by interactions with specific categories of sexual behavior. Studies of ethnic differences in the discrepancy between self-reported sexual behavior and measures such as peer reports would be especially useful. Second, given the limitations of length of residency as a measure of acculturation, future research is needed to examine the influence of such factors as cultural exposure, social integration, and motivation to assimilate on the sexual behavior of Asian immigrants. Studies comparing first-generation Asians with second- or later generation Asians would also be useful for examining the influence of North American culture on the sexual behavior of Asian individuals. Future research which examines the influence of length of residency on the sexual attitudes of Asian immigrants is also needed. It may be the

case that changes in sexual attitudes, as a function of exposure to a North American culture, precede changes in overt sexual behavior.

Last, the finding that there were no gender differences in interpersonal sexual behavior but significant gender differences in intrapersonal sexual behavior warrants future study. It would be interesting to examine why gender differences in interpersonal sexual behavior have narrowed considerably over the past few decades while gender differences in intrapersonal sexual behavior, such as masturbation, have remained remarkably stable since the 1940s. Future research is needed to examine whether the reported differences in intrapersonal sexual behavior exist only in a relatively sexually inexperienced population or whether they are pervasive across various age groups. In their meta-analysis, Oliver and Shibley Hyde (1993) found that gender differences in masturbation were apparent across age groups and showed an increase in magnitude with increasing age. If it is the case that gender differences in intrapersonal sexual behavior remain regardless of age or ethnic background, research is needed to evaluate whether they reflect underlying differences in drive, and/or differential reporting biases (Smith, 1993) and/or differences in evolutionary-based reproductive strategies (Buss and Schmitt, 1993).

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