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Gender Differences in Adolescent Premarital Sexual Permissiveness in Three Asian Cities: Effects of Gender-Role Attitudes

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Abstract

Purpose—Gender is an important factor in understanding premarital sexual attitudes and behaviors. Many studies indicate that males are more likely to initiate sexual intercourse and have more permissive perceptions about sex than females. Yet few studies have explored possible reasons for these gender differences. With samples of unmarried adolescents in three Asian cities influenced by Confucian cultures, this paper investigates the relationship between underlying gender norms and these differences in adolescents' premarital sexual permissiveness.

Methods—16,554 unmarried participants aged 15–24 were recruited in the Three-City Asian Study of Adolescents and Youth, a collaborative survey conducted in 2006–2007 in urban and rural areas of Hanoi, Shanghai and Taipei, with 6204, 6023 and 4327 from each city respectively. All of the adolescents were administered face-to-face interviews, coupled with Computer Assisted Self Interview (CASI) for sensitive questions. Scales on gender-role attitudes and on premarital sexual permissiveness for both male and female respondents were developed and applied to our analysis of the data. Multi-linear regression was used to analyze the relationship between gender-role attitudes and sexual permissiveness.

Results—Male respondents in each city held more permissive attitudes towards premarital sex than did females with both boys and girls expressing greater permissiveness to male premarital sexual behaviors. Boys also expressed more traditional attitudes to gender roles (condoning greater inequality) than did girls in each city. Adolescents' gender-role attitudes and

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permissiveness to premarital sex varied considerably across the three cities, with the Vietnamese the most traditional, the Taiwanese the least traditional, and the adolescents in Shanghai in the middle. A negative association between traditional gender roles and premarital sexual permissiveness was only found among girls in Shanghai and Taipei. In Shanghai, female respondents who held more traditional gender role attitudes were more likely to exercise a double standard with respect to male as opposed to female premarital sex ($OR=1.18$). This relationship also applied to attitudes of both girls and boys in Taipei ($OR=1.20$ and $OR=1.22$, respectively).

Conclusions—Although with variation across sites, gender differences in premarital sexual permissiveness and attitudes to gender roles among adolescents were very significant in each of the three Asian cities influenced by Confucian-based values. Traditional gender norms may still be deeply rooted in the three cities, especially among females, while it is important to advocate gender equity in adolescent reproductive health programs, the pathway of traditional gender norms in influencing adolescent reproductive health outcomes must be understood, as must differences and similarities across regions.

Keywords

Gender role; Premarital sex; Attitudes; Asian; Confucian

Introduction

Delay of sexual debut is an important strategy in reducing the risk of negative adolescent health outcomes. Earlier sexual debut has been associated with more sexual partners [1], and more unprotected intercourse [2], which can have lifetime and life-threatening consequences for adolescents. Traditional Confucian norms, which are embedded in the cultures of the East Asian societies of China, Vietnam, and Korea, prohibit premarital sex, but young people's sexual attitudes and behaviors in these regions have been rapidly changing. Premarital sexual behavior is not only increasingly accepted by young people but is also becoming more prevalent among them, and considerable proportion of young people were engaged in risky sexual activities [3, 4]. A nationally representative study conducted in 2009 in China showed that 22.4% young people aged 15–24 had had sexual intercourse. Among those sexually active adolescents and young adults, one in five had multiple partners during the last year and didn't use any contraceptives in the last sexual intercourse [5]. Another study conducted among university students found 17.6% of males and 8.6% of females were sexually active, and 11.3% females and 10.0% males reported a history of induced abortion for herself or a partner among sexually active students [6]. Data from two Taiwan Youth Surveys conducted in 2004 and 2007 reported 22% of never married youth aged 20 years having had sex, and more than half sexually active youth reported no or inconsistent condom use [7]. While in Vietnam, some studies have shown premarital sex was in relatively lower levels but alarming risky among youth compared to neighboring countries and regions. In a study in six provinces of Vietnam in 2004 including youths aged 15–21, for example, the rate of premarital sex was only 6.2% and 1.7% among boys and girls, respectively, while about half of sexually active ones rarely or never used condoms [8].

Although biological (e.g. pubertal timing), social (e.g. peer norms or parental monitoring) and environmental (e.g. media) factors influence the transition to first sex [9], individual

attitudes and beliefs are also important factors. Studies, including those assessing adolescent sexual attitudes and longitudinal associations with coital debut, have concluded that adolescents are more likely to initiate sex if they have permissive or positive attitudes towards sex [10–12]. Despite varying contextual circumstances, positive or negative perceptions of sexual intercourse appear to influence the onset or delay of sexual intercourse. Identifying the extent of adolescent permissiveness with regard to premarital sex and exploring its determinants is important for the design of sex education programs in Asian societies with Confucian-based cultures where the rate of adolescent premarital sexual intercourse is relatively low compared to western countries [4, 11]. With this specific objective, this article examines the role of attitudinal permissiveness towards premarital sex held by adolescents in the three Asian cities of Hanoi, Shanghai and Taipei and their implications for the timing of sexual debut.

Gender is an important factor in understanding attitudes towards sexual intercourse [13], a fact which is consistent with findings from Asian countries [6–8]. Whereas premarital sexual activity for boys is considered a socially acceptable rite of passage [13, 14], girls tend to be labeled and stigmatized, and are often blamed for sexual encounters that result in pregnancy and sexually transmitted infections [8]. It is likely that both girls and boys internalize subtle and overt messages about gender roles from friends, family and society which, in turn, shape different attitudes and beliefs about sexual initiation. However, the process by which gender roles influence the attitudes and beliefs about gender-distinct sexual initiation has rarely been studied, especially in Asian societies influenced by confucianism having doctrines on gender roles.

Confucianism, a Chinese ethical and philosophical system established by Confucius during the sixth century B.C., was promoted to being the state ideology during the Han Dynasty (the first century B.C.). Since then, it became the orthodox doctrine of Chinese society, and extended great influence to countries surrounding China like Korea, Japan and Vietnam, as well as various territories settled predominantly by Chinese people [15, 16]. Taking Vietnam for example, it has been spread for more than two thousand years and rooted in the local cultures, politics, customs and rituals [17]. Confucianism strictly dictated appropriate or expected behaviors for everyone by its core of “three relationships, five constants” (*san gangwu chang*), namely relationship between emperor and minister, father and son, or husband and wife, as well as virtues of Humaneness (*ren*), Righteousness (*yi*), Etiquette (*li*), Wisdom (*zhi*), and Integrity (*xin*). Besides, particular doctrines of “three obediences and four virtues (*san cong si de*)” were placed on women, linking gender roles to unequal gender stratification, or the unequal distribution of power and resources between men and women [16, 18]. That is, traditionally, women were subordinate to men in every stage of life: daughters to their fathers, wives to their husbands and in widowhood, to their sons. Females were not allowed to go “out” to school, but were expected to stay home learning skills on housework in order to raise a family after married. Responsible for ensuring harmony in her family’s life, a women should always be with modest manner. The man was expected to go out to work to support his family and his role in the family was a regnant one. Expectations in terms of sexuality were that men and women should conduct themselves properly from an emotional distance at all times and not have any contact before marriage [16]. Chastity was

particularly required on women. Women should remain virginal until marriage but also maintain absolute fidelity towards their husbands, whether he was alive or dead. Women should be kept passive and sexually innocent in relationship with men. Women who did not fulfill this expectation were stigmatized as “loose” or “fallen” women. This was not the case for men.

With economic development and trade with the west, western civilization, lifestyles, and values have concomitantly been introduced in some Asian countries. Traditional Confucian ideals concerning gender roles have begun to weaken [19–21]. Today, a rapid rise in the percentage of women attaining high school or higher levels of schooling is evident. There is more sharing of family and household responsibilities, and both males and females are working in less traditional careers like medicine, the police force, and engineering. This “loosening” of gender roles in occupational categories is not similarly reflected in the sexual arena, however. Many people continue to expect the man to take responsibility for initiating and ending sexual activity. Women are expected to be virgins before marriage and less sexually aggressive than men [8, 18]. Consequently, it is important to examine -- in societies that are subject to the increasing influences of external cultures -- adolescent perceptions of gender-role expectations and how these influence their attitudes to premarital sexual behavior.

The three sites, Vietnam, mainland China and Taiwan, have been open to outside influences socially, culturally, and economically for different periods of time and in different ways, and their traditional cultures may have changed to different extents. Employing the samples of unmarried adolescents in three Asian cities (Hanoi in Vietnam, Taipei, and Shanghai) originally influenced by Confucian values, this paper aims to examine whether adolescents’ attitudes toward gender-role expectations are different across the three cities, and to identify the extent to which gender-role expectations influence adolescents’ permissiveness regarding premarital sex, including differences by gender in attitudes toward premarital sexual onset.

Methods

Sample and procedures

Data for this article come from a 2006 cross-sectional survey of 17,016 male and female, married and unmarried youth, aged 15–24, conducted in urban Hanoi, Shanghai and Taipei and rural areas included in their large metropolitan districts by a team of researchers from the Johns Hopkins Bloomberg School of Public Health, the Population and Health Research Center in Taiwan’s Bureau of Health Promotion (BHP), the Shanghai Institute for Planned Parenthood Research (SIPPR) and the Hanoi Institute for Gender and Women’s Studies. In this paper, only the 16,554 unmarried respondents were included in the analysis, 6204, 6023, and 4327 from Hanoi, Shanghai and Taipei respectively.

The sampling methodology has been described in detail in “Levels of Change in Adolescent Sexual Behavior in Three Asian Cities” [22]. Multi-stage sampling methods were used to insure representativeness within each city. In Hanoi and Shanghai both private residences and group living facilities (GLFs) were sampled. In Taipei students were interviewed in

school with a small non-student sub-sample interviewed at their private residences and GLFs. The survey was developed by the research team, translated, back-translated, and pilot tested in each site. Interviewers received extensive training. Most of the interview was conducted face-to-face, except that computer-assisted self interview (CASI) was used for sensitive questions after the informed consent was obtained. All aspects of this study received approval from the Committee on Human Research Office at the Johns Hopkins University as well as the collaborating local organizations.

Measures

Demographic variables

Demographic variables—gender, age, geographical site (Hanoi/Taipei/Shanghai), urban/rural residence, education, economic status—were included in the analysis as controls. Gender was a self-reported dichotomous variable. Education level was based on the respondent's report of the highest level of education he/she had completed. Economic status was based on the number of listed possessions in a respondent's home and ordered as three categories (low, middle and high); considering the extreme differences in economic development among the three sites, economic status when used for comparisons across sites were site specific, based on their respective tertiles and grouped into three categories of poverty/wealth for ease of interpretation (0~5, 6~9, and 10~15 in Hanoi, 0~6, 7~11, and 12~15 in Shanghai, 0~11, 12~13, and 14~15 in Taipei).

Gender attitudes to premarital sex

Considering that sexual behaviors are progressive in nature and may be viewed as occurring on a continuum, gender attitudes to premarital sex were measured according to two Guttman scales modified by Reiss' (1967) Premarital Sexual Permissiveness (PSP) Scale [23]. One (*the female scale*) is composed of nine questions measuring the perceived appropriateness or inappropriateness for females to commence intimacy (kissing, fondling, or coitus) at various dating stages (with a casual acquaintance not in love or very familiar with, with a boyfriend in love with, or with a fiancé/fiancée engaged to), and the other (*the male scale*) is composed of nine similar questions asked about appropriate behavior for males. Similar scoring principles as those utilized for the Reiss PSP Scale were employed. For each scale, responses to the aforementioned items were first divided into "acceptable" and "unacceptable"; then, frequency analysis was conducted by site and finally, these items were ranked in each site according to the percentages of "acceptable" (*in the three sites, the same order in ranking was achieved*) and then scored. Similar percentages were merged into one group. Scores ranged from 0~7 were given, with larger numbers meaning one felt comfortable about more intimate behaviors at earlier stages. Thus, the higher the number the more permissive the respondent. Standardized Cronbach's α for the two scales in each site ranged from 0.60 to 0.84.

Adolescents' attitudes to gender role

In this paper, we focus on adolescent respondents' views about the gender division of roles in the family, in social resources allocation, and in sexual relations. Ten questions were asked and responses were measured on 3-point ordinal scales from *disagreement* (0), *no*

opinion (1) to *agreement* (2). The statements for which a respondent's agreement/disagreement was solicited were: (a) "a woman should follow her husband no matter what his lot," (b) "it is acceptable for a husband to beat his wife in some situations," (c) "a woman should not be the first to show a man she likes him," (d) "a household should be headed by a man," (e) "children suffer when mothers work away from home," (f) "in general, boys should get more schooling than girls," (g) "when jobs are scarce, men should have more right to a job than women," (h) "women should have the same opportunities as men to leadership positions," (i) "husbands should share childcare and housework responsibilities equally with their wives," and (j) "women should tell their partners/husbands what they like or do not like to do during sex." We reversed the scoring of the last three items, and then summed each adolescent's responses to form the index which had a maximum score of 20 (Cronbach's α was 0.69). The higher the score, the more traditional the adolescent's values and the less egalitarian the gender-roles he/she held.

Analysis

Data collected by the respective research institutions in Hanoi, Taipei and Shanghai were merged into a single dataset. A weighted sample, adjusted to be close to the population structure of each selected city, was used for analysis, with SAS statistical package version 9 allowing for multi-strata sampling adjustment. Preliminary analyses used χ^2 analysis to examine significant differences in demographic characteristics of unmarried respondents across the three sites. Next, we conducted t-test and ANOVA analyses to examine differences by gender across sites for the extent of respondents' permissiveness regarding premarital sex and gender-role attitudes. Multiple regression (General Linear Model, GLM) and logistic regression were used to determine the influence of gender role attitudes on adolescents' attitudes to premarital sex and to ascertain the significance of gender differentials, adjusting for the effects of covariates such as residence (urban/rural), age, education, and economic status.

Results

Comparability of samples across the three sites

Table 1 shows the demographic characteristics of the study participants. Respondents in each city were equally distributed in terms of gender, in keeping with the sampling goals. Respondents in each sample were somewhat unevenly distributed in terms of age categories. Over 70% of the respondents in the three samples lived in urban areas. Eighty-three per cent of the Taipei respondents were students, compared to only two-thirds of the Hanoi and Shanghai respondents. Educational differences were evident between the sites, as "vocational school" was classified with the college group in Hanoi, but into the high school category for the other two cities. As already discussed in the section on demographic variables, the criteria for classification of economic status differed by city, thereby obviating comparisons across cities. These background characteristics were then controlled for in the multivariate analysis.

Permissiveness on premarital sex

The ANOVA analysis found a significant difference in the level of permissiveness regarding premarital sex among respondents from the different cities (Table 2). Irrespective of gender, respondents from Hanoi were the least permissive about premarital sex and respondents from Taipei were the most permissive ($p = 0.001$). Attitudes expressed by adolescents in Taipei and Shanghai were found to be at similar levels of permissiveness with regard to female premarital sexual behavior. Across all three cities, boys and girls differed in the extent of permissiveness. Boys were more permissive about premarital sex, and held more double standard - expressing greater permissiveness regarding acceptable sexual behaviors for males than for females ($p = 0.001$). The gap was least in Taiwan.

Gender-role attitudes

Table 3 shows the mean score of gender-role attitudes of unmarried adolescents from the three cities, stratified by demographic and background characteristics. In general, the gender-role attitudes of respondents are remarkably different across the three cities. Youth from Hanoi had the highest score for gender-role attitudes (mean=8.21), followed by those from Shanghai (mean=4.26) and then Taipei (mean=2.80), indicating that Hanoi youth hold the most traditional attitudes to gender roles, while Taipei youth express the most egalitarian attitudes. In each city, boys had a higher score, underscoring that they hold more unequal attitudes to gender-roles than do girls within each demographic subgroup.

In addition, we examined the association between selected demographic characteristics and gender-role attitudes. Gender-role attitudes were found to be associated with student status and educational level in all three cities - non-students and youth with higher education were more likely to hold egalitarian attitudes to gender roles ($p = 0.05$, Table 3). Additionally, other factors such as residence and economic status were found to be associated with gender-role attitudes in the three cities: respondents from rural areas in Hanoi and urban areas in Taipei were more likely to express egalitarian attitudes to gender role, and respondents in Shanghai and Taipei who had relatively higher economic status were also more likely to hold egalitarian attitudes ($p = 0.05$).

Relationship between gender-role attitudes and permissiveness about premarital sex

For young people, permissiveness about the premarital sexual behavior of individuals of their own gender would be likely to be more highly related to and be a predictor of their own sexual behavior than would their attitudes to the behavior of the opposite sex. Therefore, in the multivariate analysis, we used male respondents' permissiveness about the premarital sexual behavior of males, and female respondents' permissiveness about the behavior of females, as indicators of the attitudes of male and female respondents respectively. As significant differences exist in terms of gender-role perceptions and premarital sexual attitudes between genders and across sites, we stratified the sample by both to examine the factors which influence these adolescents' attitudes. Table 4 presents the results from a general linear model (GLM) of adolescents' permissiveness about premarital sex, which includes gender-role attitudes and demographic variables such as residence, student status, age, education, and economic status. Girls holding more traditional gender norms (less egalitarian) were less permissive about premarital sex in Shanghai and Taipei ($\beta = -0.258$,

$p < 0.001$ and $\beta = -0.086$, $p = 0.05$, respectively). However, in all three sites, this relationship were not found among boys.

As seen in Table 4, demographic covariates influence the degree of permissiveness regarding the premarital sexual behavior of Asian youth in the three cities; the effects varied according to sub group. Generally, in the three sites, male and female respondents from urban areas, in older age group, and with higher education and economic status were more permissive.

As previously noted, both male and female respondents expressed a double standard regarding permissiveness about premarital sex initiated by each gender; do gender role attitudes, then, influence the double standard concerning premarital sexual behavior? With the outcome variable – double standard – used as a dichotomous variable, if the respondent expressed greater permissiveness regarding a male's premarital sexual behavior than a female's, he or she was classified as having a double standard. Table 5 shows the results of logistic regression analysis assessing the effect of having a double standard on permissiveness within subgroups, controlling for demographic covariates. Those who hold more traditional (unequal) gender-role attitudes are more likely to express a double standard about premarital sex initiated by males as opposed to females: among female respondents in Shanghai (OR=1.18, $p = 0.01$) and both male and female respondents in Taipei (OR=1.20, $p = 0.01$ and OR=1.22, $p = 0.01$ respectively) this relationship was significant.

Discussion

Both men and women receive and internalize societal messages about appropriate behaviors for each gender. This socialization process may support roles, norms, attitudes and behaviors that are inequitable, and may sometimes encourage behaviors that place the individuals holding them at risk of various negative health outcomes [24]. As part of this socialization process, styles of gender interaction, including within intimate relationships, are often “rehearsed” during adolescence [25]. In this study, we have examined the effects of gender differences on attitudes to premarital sexual and gender norms and the relationship between them among 15–24 year-old unmarried adolescents and youth in Hanoi, Shanghai, and Taipei, three Asian cities with cultures shaped by Confucian values.

The Reiss PSP (Premarital Sexual Permissiveness) Scale which reflects permissiveness toward premarital sexual behaviors for different gender subjects at different levels of intimate relationships, was widely applied in studies on premarital intimacy or sexuality conducted in western countries. Revisions based on these items, or on similar ideas, were also used with a focus on young adults or adolescents in non-western countries such as Taiwan, Japan, and Singapore [26–28]. One study was found to confirm the scalability of the measures of PSP in Taiwan by using an island-wide survey [29]. Employing the modified PSP Scales, this three-site study here provided new insights into the gender differences on premarital sexual attitudes among young people. Analysis showed, as expected, that such gender differences did exist in each of the three cities. Boys were more permissive than girls about premarital sex, which was consistent with previous research [4]. Furthermore, in this study, using two separate but standard scales to measure respondents'

attitudes to male and female premarital sex respectively, we found the gender differences were also delineated clearly in another aspect: both boys and girls expressed a double standard – they were more permissive about premarital sex initiated by males than by females, and the extent of the double standard held by boys was larger.

In these sites, there still remains a strong adherence to traditional Confucian gender norms which advocate a double standard for premarital sex and abstinence until marriage for females; gender differences on adherence to these gender norms also existed in three cities. Male adolescents, regardless of where they come from, expressed a desire to continue to play the dominant role while female adolescents expressed a desire for greater gender equality. Not surprisingly, the inverse relationship between traditional gender roles and adolescent premarital sexual attitudes was found only among females – not among males – in two cities. A positive association between traditional gender roles and a double standard for both male and female premarital sexual behavior was found to exist among youth in Taipei and Shanghai. This differs from findings of studies conducted among Latin-American and African youth where agreement with inequitable gender norms was positively associated with greater permissiveness regarding premarital sex, earlier sexual debut, and higher risk sexual behaviors among young men [30, 31] -- a difference which may be explained by the cultures embedded in these regions. In the Latin-American and African countries, boys often view sexual initiation as a way to demonstrate their masculinity and prove their manhood [30–32]. In contrast, the Confucian tradition maintains that a true gentleman should be modest and well-versed in SHI SHU LI YUE (Poetry, Books, Rituals, Music), rather than assert his masculinity by overt sexual activity.

It would appear that traditional gender norms in Confucian culture are protective in terms of reproductive health for adolescents, particularly as far as females are concerned. It should be based on the premise that these norms be adhered to stringently. However, sexual relations and activities of today's young males and females had changed beyond the decree of Confucian gender norms [3, 4, 33]. Despite various programs or policies that pertain to adolescent reproductive health (ARH) had been developed in China and Vietnam, ARH process were affected by social sensitivities [34]. Provision of contraceptions or other reproductive health services were not routinely provided to adolescents, despite included in few ARH programs [4, 35]. Unmarried youth still perceived stigmatization and felt shame to access contraceptives and induced abortion despite they were covered by these services as policies advocated [8, 36]. In addition, the traditional submissive expectation on females would evoke more vulnerability to their reproductive health. A study conducted among unmarried young women seeking abortion in China found 14% of them had unwanted sexual intercourse according to the male partners' dictates [37]. In terms of contraceptive use, women preferred to give the impression of innocence and expected men to take the initiative. Men were often the decision-makers for which method to use although few appeared to care. They often practiced contraceptions irregularly and thus risked unwanted pregnancy [35]. If traditional norms stressing gender inequality, especially submissiveness and absolute abstinence before marriage for females seem obsolete, programs that promote adolescent sexual and reproductive health in countries influenced by Confucian values may need to acknowledge their deep-rooted gender norms; sexual and reproductive health practitioners must find a way to balance reinforcing abstinence with unmarried youth's

ability to engage in safer sex. As important, gender-sensitive programs that advocate gender equity might promote the negotiation between partners in sexual relations and help to eliminate the stigmatization on unmarried females who are sexually active.

Several limitations apply to our findings. First, although the study involves a large sample in three Asian metropolitan cities shaped by Confucian values, the findings are of limited generalizability. to populations with other socio-economic context, especially those whose cultures are not Confucian based. Second, as with any self-report measures, there are inherent biases and the potential for both under-reporting and over-reporting. Although the interviews were partially conducted with laptops (CASI-computer assisted self interview) to safeguard respondents' privacy, on an individual basis, self-presentation issues (e.g. presenting oneself in a favorable light) may predispose youth to either exaggerate or minimize their attitudes to gender roles and premarital sex. Third, there is the issue of measurement reliability. We were unable to ascertain whether the measures, especially those on gender-role attitudes, were accurate for the adolescents in the three Asian cities. Differences in item apprehension might exist across cities and could lead to group differences caused by measurement variances rather than true group differences. Fourth, given the exploratory approach we took on Confucian-based gender norms, our conclusions for the effect of gender norms on sexual attitudes are considered tentative and need to be replicated with additional empirical studies. Further, because the sample was cross-sectional, causal relationships cannot be determined. As such, it is not possible to determine whether promoting gender equity predisposes youth to approve of premarital sex, or if youth's approval of premarital sex leads to their endorsement of gender equity.

The present study points to some new directions for future research. The findings show that gender norms are important in shaping adolescent sexual attitudes, and that gender norms and adolescent sexual attitudes vary across regions. So further research on adolescent sexual and reproductive outcomes should include the elements of culture and examine differences and similarities across different regions. In addition, future studies need to investigate the mediating role of family and peers in the relationship between gender norms and sexual attitude for adolescents, as the specific pathway of influence is not yet clear.

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Table 1

Percentage distribution of selected characteristics of adolescents across the three sites

Characteristics	Hanoi (n=6204)	Shanghai (n=6023)	Taipei (n=4327)
Age			
15~17	23.80	32.06	27.50
18~20	35.88	37.24	32.99
21~24	40.31	30.70	39.51
Gender			
Male	52.54	50.23	51.25
Female	47.46	49.77	48.75
Residence			
Urban	71.83	73.36	87.92
Rural	28.17	26.64	12.08
Education level			
Senior high school or below	50.28	58.54	47.20
College	20.41	17.80	5.08
University or above	29.31	23.66	47.72
Student or not			
Yes	66.26	67.13	82.84
No	33.74	32.87	17.16
Economic status			
Low	31.13	22.01	36.18
Middle	40.30	38.00	24.12
High	28.57	39.98	39.70

Significant at $p = 0.001$ on all characteristics except gender across three sites.

Table 2

Mean score of unmarried respondents' permissiveness about premarital sex, grouped by site and gender

	Hanai			Shanghai			Taipei		
	Total n=6204	Male n=3095	Female n=3109	Total n=6023	Male n=2983	Female n=3040	Total n=4327	Male n=2168	Female n=2159
Female scale	3.20*	3.48	2.89	4.14	4.38	3.90	4.18	4.56	3.77
Male scale	3.47*	3.78	3.12	4.27	4.59	3.95	4.46	4.84	4.06
Difference ^a	0.26*	0.29	0.22	0.12	0.20	0.04	0.28	0.27	0.28 [#]

Except [#] $p > 0.05$, all others were significant at $p = 0.001$ compared between gender.

* Significant at $p = 0.001$ compared across the three sites

^a Referring to different permissiveness one respondent held on premarital sex initiated by male and female

Table 3
Mean score of gender-role attitudes of respondents in Hanoi, Shanghai and Taipei, by demographic characteristics

Demographic characteristics	Hanoi			Shanghai			Taipei		
	Total n=6204	Male n=3095	Female n=3109	Total n=6023	Male n=2983	Female n=3040	Total n=4327	Male n=2168	Female n=2159
Total	8.21 ^a	8.91	7.43	4.26	5.40	3.10	2.80	3.70	1.85
Residence									
Urban	8.28*	8.99	7.48	4.29	5.33	3.04	2.65*	3.36	1.69
Rural	7.99	8.50	7.12	4.16	5.02	2.91	3.92	4.71	2.19
Student or not									
Yes	8.01*	8.76	7.25	4.01*	5.19	2.91	2.59*	3.42	1.74
No	8.56	9.15	7.82	4.78	5.78	3.56	3.81	5.01	2.43
Age									
15~17	8.05	8.81	7.31	4.24	5.44	3.10	2.54	3.43	1.58
18~21	8.27	9.05	7.44	4.24	5.37	3.15	2.64	3.47	1.87
22~24	8.23	8.83	7.49	4.28	5.41	3.06	3.11	4.06	2.04
Education									
Senior school or below	8.38*	8.99	7.65	4.55*	5.58	3.38	2.93*	3.84	1.84
College	8.12	8.85	7.38	3.92	5.19	2.86	3.39	4.65	2.42
University or above	8.02	8.70	7.24	3.78	5.06	2.69	2.61	3.45	1.80
Economic status									
Low	8.25	8.80	7.70	4.90*	6.09	3.70	3.04*	4.02	2.08
Middle	8.15	8.88	7.37	4.09	5.18	2.97	2.69	3.57	1.76
High	8.22	9.04	7.18	4.06	5.24	2.91	2.64	3.50	1.70

All were significant at $p < 0.001$ compared between genders, including groups of different characteristics and from different cities.

^a Significant at $p < 0.001$ compared across the three cities.

* Significant at $p < 0.05$ compared among groups of different demographic characteristics in each city.

Table 4

Coefficients (standard error) from GLM assessing the influencing factors of permissiveness on premarital sex among adolescents, stratified by site and gender

Variables	Hanoi		Shanghai		Taipei	
	Male (n=3109)	Female (n=3095)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2159)
Residence ^a	0.239 (0.069)	0.229 (0.057)	-0.374 (0.098)	0.285 (0.091)	0.468 (0.117)	0.337 (0.108)
Student or not ^b	-0.095 (0.087)	0.086 (0.075)	-0.253 (0.116)	0.343 (0.109)	-0.011 (0.129)	-0.117 (0.105)
Age	0.133 (0.055)	0.100 (0.047)	0.350 (0.075)	0.246 (0.071)	0.290 (0.071)	0.185 (0.062)
Education	-0.059 (0.051)	0.041 (0.044)	0.350 (0.064)	0.251 (0.058)	0.125 (0.058)	0.029 (0.048)
Economic status	0.139 (0.039)	0.176 (0.033)	0.163 (0.058)	0.155 (0.052)	0.085 (0.043)	0.018 (0.037)
Gender-role attitudes	-0.009 (0.038)	-0.045 (0.033)	-0.026 (0.053)	-0.258 (0.050)	-0.061 (0.049)	-0.086 (0.044)

^a Rural area as the reference.

^b Non-student as the reference.

* $p < 0.05$;

** $p < 0.01$;

*** $p < 0.001$.

Table 5

Odds ratio (95% *CI*) from logistic regression assessing influence of holding a double standard on premarital sexual permissiveness, stratified by site and gender

Variables	Hanoi		Shanghai		Taipei	
	Male (n=3095)	Female (n=3109)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2159)
Residence ^a	1.19 (0.94–1.52)	1.28 (0.98–1.66)	0.84 (0.70–1.02)	0.86 (0.70–1.05)	1.19 (0.88–1.62)	0.76 (0.56–1.04)
Student	0.74 [*] (0.56–0.98)	1.06 (0.76–1.48)	0.85 (0.67–1.06)	1.13 (0.88–1.44)	1.10 (0.79–1.54)	0.93 (0.68–1.28)
Age	0.91 (0.76–1.09)	1.11 (0.89–1.36)	1.04 (0.90–1.20)	1.16 (0.99–1.36)	1.28 ^{**} (1.07–1.54)	0.73 ^{**} (0.61–0.88)
Education	1.09 (0.92–1.29)	0.92 (0.75–1.12)	1.00 (0.88–1.13)	0.90 (0.79–1.03)	0.96 (0.83–1.12)	1.29 ^{**} (1.12–1.50)
Economic status	1.07 (0.94–1.21)	1.02 (0.88–1.18)	1.02 (0.91–1.14)	0.97 (0.86–1.09)	0.94 (0.84–1.05)	1.03 (0.92–1.15)
Gender-role attitude	1.03 (0.91–1.17)	1.07 (0.92–1.24)	1.10 (0.99–1.22)	1.18 ^{**} (1.05–1.31)	1.20 ^{**} (1.05–1.36)	1.22 ^{**} (1.06–1.38)

^a Rural area as the reference.

^b Non-student as the reference.

* *p* 0.05;

** *p* 0.01.