Published in final edited form as:

J Adolesc Health. 2012 March ; 50(3 0): S4–11. doi:10.1016/j.jadohealth.2011.12.011.

The relationship between external contact and unmarried adolescents' and young adults' traditional beliefs in three East Asian cities: a cross-sectional analysis

Yan Cheng¹, Chaohua Lou¹, Ersheng Gao¹, Laurie S. Zabin², and Mark R. Emerson²

¹Department of Epidemiology and Social Science Research on Reproductive Health, Shanghai Institute of Planned Parenthood Research, Shanghai, China

²Bill and Melinda Gates Institute for Population and Reproductive Health Research, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA

Abstract

Background—There is growing contact with the outside world among adolescents and young adults in the three Asian cities of Hanoi, Shanghai and Taipei due to the open policies implemented by the national governments of each of these cities. Because these policies were enacted at different points in time, their concomitant social impact has not been simultaneous, with the result that these societies are at different stages of change. The goal of this current analysis is to examine the dimensions of external contact and respondent's departure from Confucian values – for example, embracing individualism, a woman's taking the initiative in expressing affection to a man, and permissiveness towards premarital sex – among unmarried adolescents and young adults in these three cities and the potential relationship between them. This will contribute to our understanding of contemporary Asian adolescents' and young adults' attitudes during different social transition periods, attitudes which are frequently contrary to traditional Confucian principles.

Method—This is a cross-sectional study. The multi-center survey of 17,016 male and female adolescents and young adults aged 15–24 years old from three cities with Confucian-influenced cultures – Shanghai, Hanoi and Taipei – was conducted from May 2006 to January 2007 through face-to-face interviews coupled with computer-assisted self-interviews for sensitive questions; 16,554 unmarried respondents were included in this analysis. Binary Logistic Regression and General Linear Model were used to explore the associations between respondents' external contact and their non-traditional attitudes. All the analyses were done through SAS 9.1.

Results—There were significant differences in the positive association of respondents' external contact and non-Confucian values between the three cities. More respondents in Taipei and

© 2011 Society of Adolescent Health and Medicine. All rights reserved.

*Address correspondence to: Chaohua Lou, M.D., Shanghai Institute of Planned Parenthood Research, 2140 Xie Tu Road, Shanghai 200032, P. R. China. chaohual@yahoo.com.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Shanghai had external contact and identified with non-traditional values than those in Hanoi. The percentages of respondents reporting non-Confucian values were the highest in Taipei, the lowest in Hanoi and between these two in Shanghai. The analysis presented significant associations between respondents' exposure to western culture and their adoption of non-traditional values across the three cities. Respondents who knew how to speak western languages and who preferred western videos/actors/singers were more likely to exhibit western individualism, concurrence with women taking the initiative in a romantic relationship with a man, and permissiveness towards premarital sexual behavior.

Conclusion—Although these Asian cities are at different stages of social transition, exposure to western culture is associated with unmarried adolescents' and young adults' departure from traditional Confucian social rules in all three.

Keywords

External contact; Unmarried adolescents and young adults; Confucian values; Asian city; Multi-center study

Introduction

Today, adolescents and young adults are living in a world of cultural globalization and value pluralism. Adolescence is the key period in the development of an individual's value and belief system which will inform his/her actions and choices as an adult. Increasing acculturation to beliefs, customs and behaviors generated externally to the society in which a person is raised is an increasing challenge to adolescents' and young adults' traditional value and belief systems. For example, although Chinese Confucianism emphasizes asceticism, with a strict code regarding premarital sexual behavior[1], available data show that in the past decades higher levels of premarital sexual activity and lower age of sexual debut are observed among adolescents and young adults living in the countries whose cultures are Confucian-based, such as China mainland, Taiwan and Vietnam [2–8]. While the acceleration of pubertal development and delayed marriage are considered to be the main reasons underlying these social changes, they are generated by processes within these populations; the absorption and adoption of western sexual culture is also widely regarded as an important external contextual factor [9]. Consequently, there is growing public concern in these societies regarding the extent to which adolescents' and young adults' contact with western culture[10–12] is associated with a departure from traditional Confucian ethics, and whether such a trend is more obvious in the regions with greater exposure to western culture. To address these questions, this paper uses data from a cross-sectional survey “Three-City Asian Study of Adolescents and Young Adults: Hanoi, Shanghai, and Taipei” [13] to explore the current situation of contemporary adolescents' and young adults' contact with western culture and the possible association between such exposure and adolescents' and young adults' non-traditional values. Hanoi, Shanghai and Taipei, three cities influenced by Confucian culture for thousands of years, have opened to the western world with different timing. Among them, Taipei has the longest exposure to the West whereas Hanoi's exposure is the most recent and Shanghai's length of exposure is between the two. No large-scale cross-regional epidemiological research on the issue has been reported thus far.

Collectivism, male chauvinism and asceticism are important features of Confucianism, and these aspects have played an important role in shaping the belief system of much of Eastern Asia's population with regards to life goals, affective relationships and reproductive health [1,14]. From the traditional Confucian perspective, individuals should conform to the benefits or expectations of the family and/or class to which they belong throughout their lives. A basic principle of Collectivism ethos is conformity. In contrast, most western values emphasize individualism and the right of each person to pursue his/her own beliefs. Compared with the aforementioned conformity, individual freedom and aspirations for the future are taken for granted in western values. Therefore, the first and most salient issue in terms of these two contradictory belief systems is to ascertain the extent to which adolescents and young adults who have been raised with the principle of Confucian collectivism identify with western individualism. Throughout the history of East Asian countries such as China, Korea, Japan and Vietnam, women's lives have been dominated by male chauvinism. Women are always placed in a passive position in a male-controlled world. While it is acceptable for a man to pursue a woman in a romantic relationship, it is considered shameful for a woman to pursue a man. A young girl is expected to be discreet in word and deed and is not allowed to take the initiative in expressing her affection to a man. However, gender equality and a female's ability to develop an emotional relationship with a partner of her choice are characteristics of western culture which are increasingly welcomed by females living in these countries[15–18]. Thus, the second issue to be considered in this paper is the extent to which a woman's taking an active role in the love relationship is accepted by young adolescents and young adults in these current societies, similarly, sexual activity is forbidden before marriage and is only viewed as a means to reproduction. In contrast, in western culture, sex is regarded as a fundamental human need to be fulfilled for pleasure[1]. Exposure to such radically contradictory values may lead to young individuals holding attitudes to sexual behavior that are markedly different from those with which their parents raised them. Increasing contact with the western world has resulted in increased permissiveness towards premarital sexual behavior in formerly traditional societies. Therefore, the third issue of concern in this paper is to examine the attitudes and behaviors of adolescents and young adults in these three East Asian cities with regard to premarital sex.

Contacting with the outside world in the study refers to respondents' language learning, travel outside, access to media and preference of western video and pop stars. Among them, western language, western videos and western pop and movie idols are the common interfaces between adolescents and young adults in the three Asian cities and their contact with western culture. In these three cities, western language learning, especially English learning, has been a popular career asset sought by adolescents and young adults, and not only provides them a gateway to access western culture, but also inspires their interest in such culture. Western videos are the most welcome product of western culture compared with books, magazines, music and games, and are readily available on the Internet [19]. Data have shown that due to the popularity of western videos, many adolescents and young adults have subsequently become interested in western culture and have identified with the values emerging in these videos. Pop idols commonly become role models for adolescents and young adults; the values, attitudes and behaviors displayed by these role models have

been found to have an impact on adolescents' and young adults' socialization. Idolization of western singers and actors is prevalent among adolescents and young adults from China mainland, Taiwan and Vietnam [19]. Therefore, being able to speak a western language, and professing a preference for western videos and for western pop idols are three indicators used in this paper to evaluate adolescents' and young adults' contact with western culture.

Thus, the objectives of this paper are to examine the dimensions of the contact which adolescents and young adults in these cities have with non-indigenous western culture (being able to speak a western language, preference for western videos and for western pop idols), their non-traditional values (western individualism, female's emotional expression and permissiveness regarding premarital sex), and the possible relationship between their exposure to western culture and their departure from traditional Confucian values. As Taiwan, China-mainland and Vietnam experienced different social and economic transitions although they share similar cultural traditions, we hypothesize that the degree of departure from traditional Confucian principles among respondents in the three cities is positively associated with the period of exposure to western culture, so that, the longer the study site's exposure to western culture, the more local adolescents and young adults hold the anti-Confucian values specified previously. Additionally, we hypothesize that being able to speak a western language and a preference for western videos as well as western idols are positively associated with respondents' inclinations towards endorsing western individualism, females' emotional expression and permissiveness towards premarital sex.

Method

Sample and procedures

Data for this article come from a 2006 cross-sectional survey of 17,016 male and female, married and unmarried adolescents and young adults, 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[13]. In this paper, the 16,554 unmarried respondents were included in the analysis.

The sampling methodology has been described in detail in "Levels of Change in Adolescent Sexual Behavior in Three Asian Cities" [13]. 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. 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

Independent variables—In this paper, three variables are used to measure the degree of contact and identification with western culture. These are:

a. Knew how to speak western language: The variable is derived from a multi-choice question on what languages the respondent is able to speak. Responses of knowing English, French and other western languages are defined as knowing how to speak western languages and scored one, while the other responses are scored zero.

b. Preferred western videos: Respondents were asked where most of the movies/videos they like come from. The answers are coded one for “western countries” and zero for the other responses.

c. Preferred western movie/singing star: Respondents were asked where they favorite movie star and singing star comes from. If either comes from a western country the answers are coded one for “western countries” and zero if both are non-western.

Control variables—Age group, urban/rural residence, study/employment status and economic status are treated as covariates in these analyses. Respondents’ age is divided into two age groups according to different phases of development: age 15–19 years (old adolescents) and age 20–24 years (young adults); urban or rural residence is defined by the districts where respondents reside (urban=1, rural=0); study/employment status is a composite variable based on two questions: “Do you currently go to school, college, university or vocational school?” and “Do you have currently a paying job”; responses are divided into four categories: currently not a student and have no job scored 1, currently a student but without a job scored 2, currently a student with a job scored 3 and currently not a student but has a job scored 4. Economic status is based on the quintile, calculated separately by city, of the sum of 14 items found in his/her current dwelling.

Dependent variables—Three variables are included to indicate the degree of a respondent’s departure from traditional Confucian values:

a. Attitude to western individualism: A statement “One need not conform to one’s family’s or society’s expectations” was used to evaluate a respondent’s opinions on western individualism. Response is scored one for “agree”, indicating departure from a more collective mind-set embedded in traditional Confucian culture, and is scored zero for “disagree or no opinion”, implying more traditional group-conformity.

b. Attitude to a woman taking the initiative in expressing her affection to a man: A statement “A woman should not be the first to show a man she likes him.” was used to assess respondents’ attitudes toward gender equality in initiating a male-female romantic relationship. Responses were divided into two groups, “agree” and “disagree” is scored 0 and 1, respectively. Respondents with score 1 are assumed to hold more open attitudes towards a woman’s taking an active role in expressing affection to a man.

c. Premarital sexual permissiveness (PSP) score: A PSP score was achieved based on modified Guttman scales of nine items indicating an individual's approval of different sexual acts (kissing, fondling, or coitus) under different conditions (with casual acquaintance, with boyfriend/girlfriend, or with fiancé/fiancée). According to the percentages of respondents with "acceptable" by city, the nine items are ranked and scored so as to yield a single measure that indicates the extent of a respondent's permissiveness regarding premarital sex and to specify at which act and with whom the line is drawn. Items with similar percentages of agreement are combined into one group. A PSP score of 0–7 is then assigned according to the following sequence: disagree with all premarital sexual contact, agreement with kissing with boyfriend/fiancé (girlfriend/fiancée) or fondling with fiancé (fiancée), fondling with boyfriend(girlfriend), coitus with fiancé(fiancée), coitus with boyfriend (girlfriend), kissing with casual acquaintance, fondling with casual acquaintance, and coitus with casual acquaintance. Items for measuring respondents' PSP refer to Dr. Reiss's research (1967), which was applied in measuring adolescents' and young adults' PSP in the western countries, Taiwan, Japan, and Singapore [20–22]. The items for male and female respondents are similar except that the sex referent is female for the female scale and male for the male scale. All coefficients of reproducibility for the Guttman scaling in three cities are over 0.96. For further details about the Guttman Scale and PSP Scale, see Reiss, *et al* [23].

Statistical analysis

The sample was weighted before the analysis and the weights were calculated according to the probability of each respondent being selected from the sample site. All analyses were conducted within cities (i.e. by city). Bivariate analysis (Mantel-Haenszel test, t-test or ANOVA test) was used first to detect the differences between genders and age groups and between the three cities, in exposure to western culture and respondents' Confucian/non-Confucian values, and second to examine the associations between exposure to western culture and non-Confucian values by gender and site. Then multivariate analysis (Binary Logistic Regression Model and General Linear Model) was used to examine the significance of the associations between western exposure and respondents' attitudes to respective non-Confucian values after controlling for specific covariates. Cases with missing values were excluded from the analysis. All analyses were performed using SAS 9.1.

Results

1. Status of respondents' exposure to and identification with Western culture

In all three cities, over one in three respondents reported they were able to speak a western language (Table 1). The percentages by gender and age group were higher in Shanghai (55.2–71.8%) and Taipei (48.5–66.3%) than in Hanoi (35.6–53.8%). More than half of Taipei respondents (54.1–59.1%), irrespective of gender and age stated a preference for western videos; the corresponding percentages diminished for Shanghai (11.2–23.5%) and Hanoi (8.8–19.2%). With respect to a favorite movie/singing star, the percentages of those by gender and age group who preferred western pop stars were similar across cities, with the exception of male respondents in Shanghai (40.4–48.4%) and female respondents in Hanoi

(22.0–25.8%). There were statistically significant differences in the aforementioned exposure to western culture between the three cities ($P<0.0001$).

Significant differences were also observed between genders and age groups. The findings show in all three cities that more female than male respondents know how to speak a western language. In addition, more male respondents in Hanoi and Shanghai compared to female respondents prefer western videos and western pop stars. Older respondents generally had significantly more exposure to and identification with western culture than did younger respondents (Table 1).

2. Respondents' non-Confucian values

In the three cities, between 29.3 to 61.5% respondents were classified as subscribing to western individualism by agreeing with the statement, “one need not conform to one’s family’s or society’s expectations”. The percentages by gender and age group were highest in Taipei (51.9–61.5%), followed by Shanghai (49.7–55.1%), and lowest in Hanoi (29.3–31.4%). Similar differences between cities also existed in the distribution of respondents’ opinions on women taking the lead in starting a male-female romantic relationship and on the extent of their permissiveness regarding premarital sexual behavior. The percentages of respondents who disagreed with the statement, “A woman should not be the first to show a man she likes him,” by gender and age group were the highest in Taipei (68.5–73.5%), followed by Shanghai (49.4–62.7%) and Hanoi (36.9–47.9%); The PSP score by gender and age group were similar in Taipei (3.6–5.1) and Shanghai (3.7–5.0), but lower in Hanoi (2.8–3.9). Significant differences were observed between cities ($P<0.0001$).

The differences in opinion between genders and age groups regarding the above statements were also generally significant. In all three cities, male respondents expressed more permissive attitudes to premarital intimacy behaviors than female respondents. More Shanghai male respondents were open to a woman initiating a romantic relationship with the opposite sex than were their female counterparts. In Taipei and Hanoi, more young female respondents than male respondents disagreed that a woman should not initiate a romantic relationship with a man. More female respondents in Taipei demonstrated inclinations to western individualism than did male respondents. Older respondents had significantly more open attitudes to premarital intimacy behaviors in all three cities. Older respondents from Shanghai and Hanoi, irrespective of gender, and Taipei males, had significantly more open attitudes than did younger respondents. Only younger female respondents in Taipei held significantly more permissive attitudes towards women initiating a relationship with a man. Other differences between age groups were not statistically significant (Table 2).

3. The relationship between exposure to western culture and respondents' non-Confucian values by city and gender

Table 3 presents the associations between exposure to western culture and identification with western culture and with western individualism after controlling for various covariates. The bivariate analyses are not presented due to space limitations. The results show that Shanghai respondents of both genders and male respondents in Taipei who were able to speak western languages were 1.23 to 1.45 times more likely to agree that a person need not

conform to his/her family's or society's expectations than those who could not speak a western language. Hanoi male respondents who preferred western videos and Shanghai female respondents who preferred western movie/singing stars were 1.68 and 1.52 times more likely to subscribe to western individualism, respectively. After controlling for other variables, older respondents in Taipei were less likely to be sympathetic to western individualism than younger respondents (OR=0.82).

After controlling for covariates, Hanoi female respondents, Shanghai male and female respondents and Taipei male respondents who were able to speak a western language were 1.22–1.78 times more likely to approve of a woman taking the initiative in expressing her affection to a man. Hanoi male respondents and Taipei female respondents who preferred western videos were 1.29 and 1.22 times, and Taipei male respondents and Shanghai male and female respondents who preferred western movie/singing stars were 1.21–1.46 times more likely to support gender equality in terms of taking the lead in starting a romantic relationship. After controlling for other variables, older male and female respondents from Hanoi and Shanghai, and older male respondents from Taipei were more likely than younger respondents to agree with a woman taking an active role in expressing her affection to a man (OR=1.21–1.57) (Table 4).

Among male and female respondents in Shanghai and female respondents in Hanoi being able to speak a western language was positively and significantly associated with PSP scores, indicating more permissive attitudes to premarital intimacy behaviors ($\beta=0.11$ – 0.74). The same direction of significant relationships was found between preferring western videos and PSP score among Hanoi male and female respondents ($\beta=0.16$ and 0.19), and between preferring western movie/singer stars and PSP score among Shanghai male and female respondents ($\beta=0.57$ and 0.41), Hanoi male respondents ($\beta=0.18$) and Taipei female respondents ($\beta=0.29$), after adjusting for covariates. In the three cities, older male and female respondents reported significantly more permissive attitudes towards intimacy behaviors before marriage than did younger respondents in the multivariate analysis ($\beta=0.11$ – 0.48) (Table 5).

Discussion

Confucian philosophy, a great humanistic Chinese philosophy, is rooted in Chinese society as one of the fundamental of culture, which strictly dictated appropriate or expected behaviors for everyone, such as each person didn't exist as an individual, but a part/a member of the family or group, women should be kept passive and sexually innocent in relationship with men, 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 [24–25]. *Western culture began in Ancient Greece, including several core ideals and values such as individualism, happiness, rights, freedom, and gender equality, etc..* The findings in the paper demonstrate that contact with western culture and identification with western values are popular among contemporary Asian adolescents and young adults aged 15 to 24 in Hanoi, Shanghai and Taipei. This is consistent with previous cross-cultural research on East Asian adolescents' and young adults' belief and value systems [9,19]. It was noted that more than one in three Hanoi respondents and one in two

Shanghai and Taipei respondents knew how to speak a western language, and nearly one in three respondents in all three cities preferred western movie and music stars. In addition, respondents who were sympathetic to ideas of western individualism and who approved of gender equality in relationships with the opposite sex accounted for nearly 30% and 50% of Hanoi respondents, and over 50% and 60% of Shanghai and Taipei respondents. Generally speaking, respondents in Taipei reported more access to and absorption of western language and culture, followed by respondents in Shanghai and then Hanoi. This differential between cities may largely be attributed to the different stages of economic and social transition that the three Asian cities are undergoing following their opening themselves to contact with the western world. The results lend support to the first hypothesis. However, with regard to the acquisition of a western language and a preference for western singers/actors, Shanghai respondents exhibited more interest than their peers from Taipei; this could be explained by the rapid and increasing cross-cultural communication between China mainland and other western countries in recent years.

This analysis also suggests that there were statistically significant associations between exposure to western culture and respondents' departure from Confucian values in each study site. In this study, respondents in these three Asian cities who were able to speak a western language were more likely to approve of individualistic values more akin to the west than to Confucian culture, concur with the acceptability of a woman taking the initiative in expressing affection to a man, and hold permissive attitudes to premarital sex. Although there has thus far been no similar research exploring the role of western language ability in shaping the traditional values of East Asian adolescents and young adults, a few studies have noted the impact of values embedded in the language learning process on students [26]. Social researchers regard language as one of the most important expressions of a local culture so that through learning a language, students may be influenced by the values, attitudes and opinions attached to the language in an invisible and formative way. In China mainland and Hanoi, earlier research has indicated that high school students have a history of studying a western language for 4–6 years [27]. Many guidelines on learning a western language, such as English, French or German, also encourage students to understand the social and historical background behind the words, phrases and sentences. This process may help explain the significant associations between western language ability and an expressed inclination towards western values. Additionally, data show that English language information accounts for 90% of information available on the Internet, and adolescents and young adults are easily able to access the Internet in China mainland, Taipei and Vietnam [28–31]. Therefore, knowing how to read and speak English also provides adolescents and young adults greater opportunity to engage more fully with the outside world.

The results of this study also demonstrate that adolescents and young adults who state a preference for western videos, singers and actors are more likely to hold individualistic values, agree that women too may initiate a romantic relationship with a man and that this is not the prerogative of males alone, and hold more permissive attitudes to premarital sexual intimacy. It cannot be denied that these values are prevalent in imported western videos and welcomed by adolescents and young adults because they validate the departure from convention and tradition which are particular characteristics of adolescence. Furthermore, in the majority of western videos, premarital sexual intimacy is depicted as attractive, romantic

and risk free [32–33], qualities to which adolescents and young adults during this period of their development of sexual consciousness will be especially responsive. Thus, sexual permissiveness may be particularly compelling to adolescents and young adults. Although there is no quantitative research supporting the association, qualitative studies suggest that adolescents' and young adults' attitudes towards romantic relationships and sexual behavior are easily influenced by western videos [34]. The results of this paper lend support to the role model effect of western idols on respondents' values, thereby indicating that adolescents' and young adults' idols play the important role of "significant adult" in adolescent's and young adult's socialization. The results are consistent with previous research exploring the impact of movie actors on adolescents' smoking behavior [35].

Gender and age differences in respondents' exposure to western culture and values were observed in the analysis. Generally, more respondents aged 20–24 have had access to a western language and culture than respondents aged 15–19, and correspondingly exhibit a more pronounced departure from traditional Confucian values. More male than female respondents reported that they preferred western videos and idols. This may be related to the different characteristics of males and females. Males preferred videos containing violence and fighting and heavy metal music, which accounted for the majority of the imported videos and music. However, more female respondents than male knew how to speak a western language, a finding consistent with earlier research indicating that females appear to be more advantaged in language learning than men. In Shanghai, more male respondents than female respondents concurred with a woman having as much right as a man to take the lead in a romantic relationship, while in Taipei and Hanoi, more young female respondents than male respondents agreed.

Several limitations of the data used in this study should be considered. First, data were self-reported by adolescents and young adults and therefore may be subject to recall bias and issues of social desirability. However, since CASI was used in our interviews, the accuracy of responses may have been increased due to the fact that the privacy of adolescent could largely be ensured. Second, the data presented here are cross-sectional and thus the direction of influence is likely bidirectional. Those who hold less traditional values may be more likely to seek out western games and movies. Consuming these forms of entertainment is also likely to reinforce these ideals.. However, for western language learning, considering that most adolescents and young adults in the three cities began to study a western language, especially English, from primary school, it is possible that such early exposure may influence adolescents' and young adults' value and attitudinal development during adolescence. Third, the sample was limited to one geographical region of China mainland, Taiwan and Vietnam, which may limit the generalizability of results to other regions and countries in the East Asian region which are also imbued with traditional Confucian culture. Forth, the measurement of contact with western culture and values is limited and rough, and this, without a doubt, merits further research, as do each of the areas summarized above. Finally, considering the data is from a survey conducted in 2006, the situation might change due to the fast change of the world.

Despite these limitations, our findings suggest that acculturation to imported western culture is prevalent among adolescents and young adults in the three cities and is significantly

associated with adolescents' and young adults' departure from traditional values. Imported western culture should be considered by governments to be an important external variable in the establishment of adolescents' and young adults' belief and value system. Imported western culture such as western language, videos and idols should receive increased attention from practitioners and researchers who are concerned with the formation of adolescents' and young adults' value and belief systems, as which may play an important role in shaping adolescents' and young adults' health behavior decision, especially on the aspect of reproductive health.

Acknowledgments

This project was supported by the Bill and Melinda Gates Institute for Population and Reproductive Health, Johns Hopkins Bloomberg School of Public Health, USA. We wish to acknowledge Dr. David Bishai and Prof. Robert Blum for their hard work and important help in the study design, sampling, data clearing and suggestions regarding the final paper. We would also like to thank our colleagues in the Hanoi Institute of Family and Gender Studies, the Health Research Center in Taiwan's Bureau of Health Promotion (BHP) and the Shanghai Institute for Planned Parenthood Research (SIPPR) for their work and commitment to the project.

References

1. Brotto LA, Chik HM, Ryder AG, et al. Acculturation and sexual function in Asian women. *Archives of Sexual Behavior*. 2005; 34 (6):613–26. [PubMed: 16362246]
2. Gao, ES.; Tu, XW.; Zhao, SL., et al., editors. *Review on Adolescent Reproductive Health Studies in China*. China Population Press; Beijing: 2002.
3. Lou CH, Wang XJ, Cheng Y, et al. Relationship with opposite sex and sexual behavior and influencing factors of them among vocational school students. *Chin J Public Health*. 2007; 23(8): 985–86.
4. Lou CH, Shen Y, Gao ES, et al. Sex-related behaviors among unmarried migrant young people. *Reproduction & Contraception*. 2004; 24(1):34–8. 42.
5. Choe MK, Lin HS. Effect of education on premarital sex and marriage in Taiwan. *East-West center working papers*. 2001; (108–16)
6. Wang RH, Wang HH, Hsu MT. Factors associated with adolescent pregnancy—a sample of Taiwanese female adolescents. *Public Health Nursing*. 2003; 21(1):33–41. [PubMed: 12492823]
7. Mensch BS, Clark WH, Dang Nguyen Anh. Premarital sex in Vietnam: looking beyond reproductive health. *Stud Fam Plann*. 2003; 34(4):249–63. [PubMed: 14758607]
8. de Lind van Wijngaarden, Jan W. Exploring factors and processes leading to HIV risk among the most vulnerable children and adolescents in Vietnam (Literature Review). UNICEF; 22 April 2006;
9. Dong, Ya. The changing tendency of the spreading ways and influences on the youngsters of the western culture in China. *Journal of Southeast China Normal University*. 2005; 31(6):88–91.
10. Gao, ES.; Lou, CH. Cognition Belief and Practice: the Developing Track of Young People's Sexual and Reproductive Health in China. In: Zhang, KN., editor. *Reorienting Concepts and Methodology: the 30 Years SRH in China*. Beijing, China: Social Science Academic Press; 2008. p. 96-129.
11. Xiang Y. Cultural invasion and cultural protection: should Chinese celebrate Christmas? *Asian Social Science*. 2010; 6(1):157–60.
12. Nguyen PA. Relationships based on love and relationships based on needs': emerging trends in youth sex culture in contemporary urban Vietnam. *Modern Asian Studies*. 2007; 41(2):287–313.
13. Zabin LS, Emerson MR, Li N, et al. Levels of change in adolescent sexual behavior in three Asian cities. *Studies in Family Planning*. 2009; 40(1):1–12. [PubMed: 19397181]
14. Oishi S, Hahn J, Schimmack U, et al. The measurement of values across cultures: a pairwise comparison approach. *Journal of Research in Personality*. 2005; 39:299–305.
15. Thornton, Arland; Lin, Hui-Sheng. *Social Change and the Family in Taiwan*. Chicago: University of Chicago Press; 1995. p. 116-145.

16. Rosina CC, Jamie LM, Ka NL, et al. Cultural difference in gender role attitudes between Chinese and American students. *Sex roles*. 1994; 31:23–30.
17. Zhang NJ. Gender role egalitarian attitudes among Chinese college students. *Sex Roles*. 2006; 55:545–53.
18. Wang XY, Petula SYH. My sassy girl. A qualitative study of women's aggression in dating relationships in Beijing. *Journal of Interpersonal Violence*. 2007; 22(5):623–38. [PubMed: 17429026]
19. Li XJ, Dong Y. The survey on western cultural production consumption among urban adolescents. *China Youth Study*. 2005; 9:36–40.
20. Sprecher S, Hatfield E. Premarital sexual standards among U.S. college students: comparison with Russian and Japanese students. *Archives of Sexual Behavior*. 1996; 25:261–88. [PubMed: 8726551]
21. Chang J. What do education and work mean? education, non-familial work/living experiences and premarital sex for women in Taiwan. *Journal of Comparative Family Studies*. 1996; 27:13–26.
22. Chia SC. How peers mediate media influence on adolescents' sexual attitudes and sexual behavior. *Journal of Communication*. 2006; 56(3):585–606.
23. Reiss, IL. *The Social Context of Premarital Sexual Permissiveness*. New York: Holt, Rinehart, and Winston; 1967.
24. Ko, NH. Familism in Confucianism. Paper presented at the International Conference of Women's Global Connection; San Antonio, Texas, USA. 2004;
25. Kee TS. Influences of Confucianism on Korean corporate culture. *Asian Profile*. 2008; 36:9–20.
26. Zhuang SX. On the combination of culture with language teaching. *Journal of Shandong Agricultural University*. 2001; 3(1):95–6.
27. Lu L, Liu YP, Lan YL, et al. A comparison research on English study among high school students in the department of economic management from China, Vietnam and Thailand. *Guangxi Social Science*. 2007; 12:166–70.
28. Guan SJ. The Internet and culture imperialism. *International Politics Quarterly*. 1999; 1:121.
29. China Internet Network Information Center. The 19th statistical report on the development of Internet Network in China. 2007 Jan 23. [EB/OL]. <http://www.cnnic.cn/html/Dir/2007/01/22/4395.htm>
30. Ko CH, Yen JY, Chen CS, et al. Psychiatric co-morbidity of internet addiction in college students: an interview study. *CNS Spectr*. 2008; 13(2):147–53. [PubMed: 18227746]
31. Ngo AD, Ross MW, Ratliff EA. Internet influences on sexual practices among young people in Hanoi, Vietnam. *Cult Health Sex*. 2008; 10 (suppl):201–13.
32. Pardun CJ, L'engle KL, Brown Jd. Linking exposure to outcomes: early adolescents' consumption of sexual content in six media. *Mass Commun Soc*. 2005; 8(2):79–91.
33. Rich M. Sex screen: the dilemma of media exposure and sexual behavior. *Pediatrics*. 2005; 116(1): 329–31. [PubMed: 16001460]
34. Rui PN. The influence of mass media on adolescents' sex education. *Reproduction and Contraception*. 2004; 24(suppl):147–51.
35. Charlesworth A, Glantz SA. Smoking in the movies increases adolescent smoking: a review. *Pediatrics*. 2005; 116 (6):1516–28. [PubMed: 16322180]

Table 1

Distribution of respondents' external contact/identification with western culture, by site, gender and age group

Contact and identification with western culture	Age group	City					
		Hanoi		Shanghai		Taipei	
		Male (n=3095)	Female (n=3109)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2159)
Knew to speak western languages	15–19	35.6###	40.8	55.2###	67.3	48.5###	61.2
		***	***	ns	ns	***	**
Preferred western videos	20–24	47.5###	53.8	57.1###	71.8	56.0#	66.3
	15–19	19.2###	8.8	18.9###	11.2	54.1	54.6
Preferred western movie/singer star		ns	***	*	*	**	ns
	20–24	19.0#	14.5	23.5###	17.3	59.1	57.0
	15–19	30.2###	22.0	40.4###	31.0	32.6	33.2
		ns	*	**	***	*	ns
	20–24	34.6#	25.8	48.4##	40.7	33.5	34.7

Note: Mantel-Haenszel test among cities adjusting age group and gender, between age groups adjusting site and gender, between genders adjusting site and age group. All p 0.0001 among sites;

*** P 0.0001,

** p 0.001 and

* p 0.05 between age groups;

p 0.0001,

p 0.001 and

p 0.05 between genders.

Table 2

Distribution of respondents' anti-Confucian ethics by site, gender and age group

Opinions/behavior	Age group	City					
		Hanoi		shanghai		Taipei	
		Male (n=3095)	Female (n=3109)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2159)
One need not conform to one's family's or society's expectations. (%)	15-19	29.3	30.3	52.2	49.7	54.7#	61.5
		ns	ns	ns	ns	ns	ns
	20-24	31.4	30.0	55.1	52.0	51.9##	59.5
A woman should not be the first to show a man she likes him (Disagree). (%)	15-19	36.9##	43.6	52.7#	49.4	68.5#	73.5
		***	*	***	***	*	*
	20-24	46.8	47.9	62.7#	57.0	72.3	69.0
Premarital sexual permissiveness score (Mean)	15-19	3.6###	2.8	4.3####	3.7	4.6####	3.6
		***	*	***	***	***	***
	20-24	3.9###	3.0	5.0####	4.2	5.1####	3.9

Note: Mantel-Haenszel test for percentage, Anova test for mean among cities adjusting for age group and gender; Mantel-Haenszel test for percentage, t-test for mean between age groups adjusting for site and gender, between genders adjusting for site and age group. All p 0.0001 among sites;

*** p 0.0001,

** p 0.001 and

* p 0.05 between age groups;

p 0.0001,

p 0.001 and

p 0.05 between genders.

Table 3
Variables regressed on western individualism by city and gender: odds ratio (Binary Logistic Regression Model)

Variable	Hanoi		Shanghai		Taipei	
	Male (n=3095)	Female (n=3109)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2158)
Age group (ref: 15–19 years old)	1.06	0.87	1.12	1.06	0.82*	0.92
Urban/rural type (ref: rural)	1.10	1.12	1.07	0.83*	1.14	2.16*
Study/employment status (ref: Not a student and no job)						
A student without job	0.74	0.71*	1.24	1.14	0.71	1.00
A student with a job	0.89	0.74	1.36	1.11	0.72	1.07
Not a student but have a job	0.75	1.01*	1.24	1.13	0.82	0.87
Economic status (ref: the bottom quintile)	0.94*	1.07*	1.01	1.05	0.97	0.99
Knew to speak western languages (ref: no)	0.79*	1.13	1.45*	1.23*	1.29*	1.00
Preferred western videos (ref: no)	1.68*	0.97	0.97	0.93	1.06	0.96
Preferred western movie/singer star (ref: no)	0.97	1.09	1.11	1.52*	0.88	1.03

* p 0.05

Table 4
Variables regressed on female's emotional appeal by city and gender: odds ratio (Binary Logistic Regression Model)

Variable	Hanoi		Shanghai		Taipei	
	Male (n=3095)	Female (n=3109)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2158)
Age group (ref: 15–19 years old)	1.57*	1.26*	1.44*	1.21*	1.27*	0.84
Urban/rural type (ref: rural)	0.79*	0.78*	0.77*	0.76*	1.19	1.33
Study/employment status (ref: Not a student and no job)						
A student without job	1.03	0.92	0.80*	1.14	1.42	1.13
A student with a job	1.60*	0.93	1.52*	1.32	1.88*	1.01
Not a student but have a job	0.87*	0.75*	0.80*	1.43*	0.84*	0.98
Economic status (ref: the bottom quintile)	0.95	0.97	1.05	1.01	1.03	1.06
Knew to speak western languages (ref: no)	1.10	1.22*	1.78*	1.64*	1.50*	1.18
Preferred western videos (ref: no)	1.29*	1.26	0.86	1.04	1.10	1.22*
Preferred western movie/singer star (ref: no)	1.13	1.26	1.46*	1.21*	1.27*	0.84

* p 0.05

Table 5

Variables regressed on PSP score by city and gender: β (General Linear Model)

Variable	Hanoi		Shanghai		Taipei	
	Male (n=3095)	Female (n=3109)	Male (n=2983)	Female (n=3040)	Male (n=2168)	Female (n=2157)
Age group (ref: 15–19 years old)	0.18*	0.11*	0.48*	0.36*	0.42*	0.27*
Urban/rural type (ref: rural)	0.15*	0.18*	-0.32*	0.28*	0.49*	0.35*
Study/employment status (ref: not a student and no job)						
A student without job	-0.23*	0.04	-0.35*	0.20	0.08	-0.04
A student with a job	-0.12	0.13	-0.26	0.63*	0.34	0.09
Not a student but have a job	-0.03	0.00	0.07	0.05	0.26	0.17
Economic status (ref: the bottom quintile)	0.03	0.08*	0.06	0.05	0.05	0.02
Knew to speak western languages (ref: no)	-0.01	0.11*	0.65*	0.74*	0.14	-0.07
Preferred western videos (ref: no)	0.16*	0.19*	0.08	0.20	0.13	0.12
Preferred western movie/singer star (ref: no)	0.18*	0.01	0.57*	0.41*	0.11	0.29*

* p 0.05