

## GENDER DIFFERENCES IN HIV/AIDS PREVENTIVE SELF-EFFICACY AMONG TAIWANESE ADOLESCENTS

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The aim of the cross-sectional study was to understand gender differences in HIV/AIDS preventive self-efficacy among Taiwanese adolescents. Self-administered questionnaires were used to measure HIV/AIDS preventive self-efficacy and covariates (age, substance use, and sexual experiences). Data were collected from 734 Taiwanese high school adolescents aged 16 to 18 years. Descriptive statistic analyses, *t*-test, and ANCOVA were utilized to analyze data. The results indicate significant differences exist between genders in HIV/AIDS preventive self-efficacy among Taiwanese adolescents. Compared to the males, female adolescents were found having significantly higher HIV/AIDS preventive self-efficacy related to refusing sexual intercourse, condom use, and questioning potential sexual partners than those who are males. While controlling age, sexual experience, and substance use, female Taiwanese adolescents also had higher HIV/AIDS preventive self-efficacy than those who are males. The findings suggest the importance of addressing gender differences in HIV/AIDS preventive self-efficacy when developing HIV reduction programs for Taiwanese adolescents.

While the threats of HIV/AIDS spread all over the world, adolescents and young youth are increasingly acknowledged as a group at high risks of exposure to HIV and a main concern on the global and national HIV policies (UNAIDS, 2013). Even though there was a 32% reduction in the estimated new HIV infections among young people (15–24) from 2001 to 2012, it was estimated that 780,000 young people aged 15–24 were newly infected with HIV in 2012 (UNAIDS, 2013). While the declines in HIV prevalence among young people in many countries worldwide have been reported, the estimated number of new HIV infections among young people in East Asia has increased by 24% in 2012 (UNAIDS, 2013). Taiwan, located in East Asia, is not exempted from the HIV epidemic. Taiwanese young people are at high risk of HIV infection (Center for Disease Control, Taiwan, R.O.C., 2015). The national surveillance shows that the largest number of HIV infections in 2014 was in people aged 20 to 29, accounting for 50.8% of all cases (Center for Disease Control, Taiwan, R.O.C., 2014). Unsafe sexual behavior has been identified as the top factor

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contributing to acquire HIV infections among these Taiwanese young people (Center for Disease Control, Taiwan, R.O.C., 2014).

Environment is an important factor influencing human behaviors (Bandura, 1986). Social influences dominant in given environments affect individuals' values, beliefs, behaviors, and lifestyles (Bandura, 2006). Adolescence is a critical time for identity formation; during this time, adolescents begin to consider cultural expectations and standards for behavior (Bandura, 2006; Erikson, 1963; Schunk & Meece, 2006). They are greatly influenced by cultural stereotypes and vulnerable to social values for behaviors (Schunk & Meece, 2006; Yu & Xie, 2008). Adolescents form their gender roles through socializations, and the cultural environments play an essential role on shaping adolescents' sexual behaviors (Chia, Moore, Lam, Chuang, & Cheng, 1994; Gao et al., 2012; Yu & Xie, 2008). Even though the effects of women's rights movement in the Western countries have made the progress of gender equality in recent years (Basow, 1992; Chia et al., 1994), gender roles connected to power dynamics within relationships continue to greatly influence adolescents' attitudes, experiences, and behaviors in many counties of the world (Chiao & Yi, 2011; Farmer & Meston, 2006; Gómez, 1996; Leech, 2010).

Enhancing self-efficacy for reducing HIV/AIDS-related risk behaviors may be especially important for adolescents. Self-efficacy, a unique type of expectancy regarding people's beliefs or judgments about their capabilities to effectively carry out specific or desired behaviors, has been identified as a critical contributor to behavioral changes (Bandura, 1977a, 1986). Individuals who have higher self-efficacy to a specific task have greater confidence in their abilities to achieve the desired performance and therefore more likely to undertake that behavior (Bandura, 1977b, 2006). Numerous studies have employed the concept of self-efficacy on individuals' changes in health-related behaviors including safer sexual practices among adolescents, and increasing the level of self-efficacy has been considered as a valuable strategy for changing behaviors and increasing personal control over the prevention of risk-taking behaviors (Bandura, 1977b, 1986, 1994, 1995, 2006; DiIorio, Dudley, Soet, Watkins, & Maibach, 2000; Lee, Salman, & Fitzpatrick, 2009; Schwarzer & Luszczynska, 2006; Taylor-Seehafer & Rew, 2000). Self-efficacy has been considered as a critical element for HIV preventive programs (Bandura, 1994; UNAIDS, 2006; Villegas et al., 2013).

The developmental changes during adolescence, including cognitive changes, and physical changes, along with the changes of social contexts in young people's environments could have impacts on adolescents' perceptions of their own capacities and efficacy beliefs (Schunk & Meece, 2006). A number of studies have examined variables associated with adolescents' self-efficacy, and gender difference is one of the variables that were investigated (Bowleg, Belgrave, & Reisen, 2000; Farmer & Meston, 2006; Schunk & Meece, 2006). Studies found that self-efficacy related to a certain desired behavior may be different across gender (Bowleg et al., 2000; Cecil & Pinkerton, 2000; Huang, 2013; Meekers & Klein, 2002; Muñoz-Silva, Sánchez-García, Nunes, & Martins, 2007; Rosenthal, Moore, & Flynn, 2002; Takahashi, Magalong, DeBell, & Fasudhani, 2006; Villegas et al., 2013). For example, females were found to have higher perceived sexual self-efficacy compared to males in African-American adolescents (Redmond & Lewis, 2014). Males were found to have higher self-efficacy than the females in asserting their sexual needs but less self-efficacy in saying no to sexual demands (Rosenthal et al., 2002). Different cultures may define sex roles for females and males differently (Basow, 1992; Chia et al., 1994).

Although gender differences in self-efficacy and their psychological implications have received considerable attentions in Western and African cultural societies, little research has investigated the nature of gender differences and its impacts on adolescents' psychological adjustment, perceptions of own capacities and efficacy beliefs in Chinese societies (Yu & Xie, 2008). Chinese culture, deeply rooted in Confucianism with strict doctrines on gender roles, has its particular characteristics that may affect adolescents' conceptualization of masculinity and femininity and their self-efficacy related to safer sexual practices (Gao et al., 2012; Yu & Xie, 2008; Zuo et al., 2012). Taiwan is one of the Asian counties that was greatly influenced by Chinese culture (Chia et al., 1994; Gao et al., 2012; Zuo et al., 2012). Considering the relationship between culture, values, and sexual behavior in this rapidly changing socio-cultural environment, the association between gender differences and self-efficacy related to HIV/AIDS prevention among Taiwanese adolescents warrants explorations.

The numerous associations between gender difference and increased vulnerability to HIV infection have been acknowledged; hence, it is important to address gender inequality for long term success in opposing HIV epidemic (UNAIDS, 2012, 2013). The imperative need to deliver culturally sensitive programs for HIV/AIDS prevention has been also strongly suggested by UNAIDS (2013, 2014). An increasing number of studies have focused on self-efficacy for prevention of sexual risk-taking behaviors among Taiwanese young people; however, interventions for enhancing individual's self-efficacy to prevent HIV/AIDS infection has been missed and not a part of the HIV/AIDS prevention programs in Taiwan. Even though literatures have documented gender differences in perceived self-efficacy, the differences in HIV/AIDS preventive self-efficacy between female and male adolescents living in Chinese culture have not been well studied. The obstacles to enhance HIV/AIDS preventive self-efficacy in the Taiwanese adolescents also remain poorly understood.

It is essential to gain fundamental understandings about the differences in Taiwanese female and male adolescents' self-efficacy related to HIV/AIDS prevention in order to develop gender responsive educational programs that could effectively reduce Taiwanese adolescents' HIV/AIDS related risky sexual behaviors. However, since the information regarding the role of gender in HIV/AIDS preventive self-efficacy and its relationship to safer sexual practices is limited and has not been reported, this knowledge gap limits our capability to develop comprehensive and appropriate sexual education that is culturally sensitive and gender responsive for HIV/AIDS prevention in the Taiwanese adolescent population.

## THE AIMS OF THE STUDY

To develop optimally effective gender-responsive HIV/AIDS preventive programs for Taiwanese adolescents in the future, this study intended to investigate and understand gender differences in HIV/AIDS preventive self-efficacy among Taiwanese adolescents in hopes of enhancing our capabilities of future development of effective HIV/AIDS interventions for adolescents in Taiwan. The research questions in this study were: (a) Are there differences in HIV/AIDS preventive self-efficacy between male and female Taiwanese adolescents? (b) Is there a significant difference in the HIV/AIDS preventive self-efficacy between male and female Taiwanese adolescents while controlling for age, sexual experiences, and substance use?

## METHODS

This cross-sectional study was conducted to investigate gender differences in Taiwanese adolescents' self-efficacy for HIV/AIDS prevention. Approvals for the study were obtained from the Institutional Review Board and from the City Bureau of Education in Taiwan before approaching the potential subjects.

### SAMPLE, SETTING, AND PROCEDURE

This study used a convenience sampling method to recruit adolescents who were 16–18 years old, studying in high schools at the biggest metropolitan in southern Taiwan, and able to respond to the self-administered questionnaires. Schools and classes were selected according to the accessibility of schools and classes. Adolescents who were studying in special classes for students with mental or cognitive disorders were excluded. Principals and teachers of the selected schools and classes were contacted for scheduling the best time for data collection. The researcher explained and completed all data collection procedures including handing out and collecting consent/assent forms and questionnaires. Signed assent forms from adolescents and informed consents from parents were obtained from all participants prior to anonymous, self-administered questionnaires were distributed to the participants. All data were collected in the classrooms of participants' schools in Taiwan. Participants of this study were recruited from a total of 22 classes distributed among seven different high schools.

The privacy and confidentiality of students were ensured. In Taiwan, the designs of seats for each high school student in the classroom make reading over someone's shoulder difficult. To protect students' confidentiality and increase chances of releasing honest information, questionnaires were anonymous. Adolescents were encouraged to complete the questionnaires and were informed of their anonymity. However, they were also told to skip any question which made them feel uncomfortable. Adolescents were notified that they could refuse to participate in the study with no penalty and that they could freely drop out of the study any time. Among 920 students who were academically enrolled in the selected classes, a total of 734 Taiwanese adolescents who met the research criteria participated in this study.

### MEASURES AND INSTRUMENTS

*Demographic Data.* Information such as participants' age, gender, and grade in schools was collected. Participants were also asked about whether they have ever had a history of smoking cigarettes, drinking alcohol, or using illicit drugs (Yes/No). This study also collected information about participants' sexual experiences. Adolescents were asked whether they have ever had a sexual intercourse experience (Yes/No).

*HIV/AIDS Preventive Self-Efficacy.* The AIDS-Prevention Self-Efficacy Scale (Kasen, Vaughan, & Walter, 1992) was used to measure HIV/AIDS preventive self-efficacy. Participants were asked about their beliefs regarding their ability to perform the HIV/AIDS preventive behaviors. This AIDS Preventive Self-Efficacy Scale is composed of 22 items distributed into three dimensions: refusing sexual intercourse (items 1 to 9), questioning potential sex partners (items 10 to 13), and condom use (items 14 to 22). Each item includes a 5-point scale: 1 (not at all sure), 2 (a little

sure), 3 (somewhat sure), 4 (pretty sure), and 5 (very sure). The range of total possible scores for this scale was from 22 to 110. Lower scores in this AIDS-Prevention Self-Efficacy Scale shows lower self-efficacy to prevent HIV/AIDS, and higher scores indicated higher self-efficacy to prevent HIV/AIDS.

Internal consistency was reported as Cronbach's alpha .81 to .93 in various adolescent populations (Kasen et al., 1992; Wang & Wang, 2000). Reliability of this Chinese version of AIDS-Preventive Self-Efficacy Scale was examined via internal consistency (Cronbach's alpha) for the total scale and each of the three subscales. Good internal consistency equal to .90 was found for the total scale. Internal consistency for each of the three subscales (refusing sexual intercourse, questioning potential sexual partners, and condom use) are equal to .90, .76, and .82. The validity of the Chinese version of the AIDS-Preventive Self-Efficacy Scale in this present study was established through factor analysis using the maximum likelihood extraction method with promax oblique rotation. Congruent with the literature (Kasen et al., 1992), three dimensions of AIDS preventive self-efficacy were determined and identified, they were named: Refusing sexual intercourse (9 items, items 1 to 9), Questioning potential sexual partners (4 items, items 10 to 13), and Condom use (9 items, items 14 to 22).

#### DATA ANALYSIS

Descriptive statistics including mean, standard deviation, frequency, percentage, and range were utilized to describe the distribution of self-efficacy preventive self-efficacy as well as the characteristics of the participants. The overall HIV/AIDS preventive self-efficacy was calculated by summing up scores from all 22 items on AIDS Prevention Scale. Independent *t*-test was performed to analyze the differences in HIV/AIDS preventive self-efficacy between male and female Taiwanese adolescent participants. When repeated *t*-tests were performed to compare gender difference in the sub-dimensions of HIV/AIDS preventive self-efficacy, the *p* value ( $p = .05$ ) was adjusted ( $p = .05/3 = .017$ ) to avoid the inflation of Type I error. ANCOVA was used to compare the differences in HIV/AIDS preventive self-efficacy between male (dummy recoded as 0) and female (dummy recoded as 1) adolescents while controlling for age, sexual experiences: No (coded as 0) and Yes (coded as 1); and history of substance use: No (coded as 0) and Yes (coded as 1).

## RESULTS

#### CHARACTERISTICS OF THE SAMPLE

Of the 734 participants, 461 are males and 270 are females (3 did not indicate gender). The average age of the 734 participants was 17.17 ( $SD = 0.85$ ) years old. The average age of female participants was significantly older than the average age of male participants. Of all participants, 27.1% were in the 10th grade, 38.0% were in the 11th grade, and 34.9% were in the 12th grade. About 30.23% of the 734 participants reported that they had substance use history including 15% smoked, 23.8% drank alcoholic beverages, and 5.3% used illicit drugs. Twenty-three percent of the participants ( $n = 169$ ) reported that they had had sexual intercourse experience. The average age of initial sexual intercourse occurrence in male adolescents was slightly lower (Mean = 15.6,  $SD = 1.6$ ) than their female counterparts (Mean = 16.0,  $SD = 1.2$ ), but the difference was not statistically significant ( $t = 1.51, p = .13$ ).

TABLE 1. Comparison of Difference in HIV/AIDS Self-Efficacy Between Male and Female Taiwanese Adolescents

Dimensions of HIV/AIDS preventive self-efficacy	<i>df</i>	Male		Female		<i>t</i> -value
		Mean	<i>SD</i>	Mean	<i>SD</i>	
Overall HIV/AIDS Preventive Self-Efficacy	600	74.45	17.05	86.99	14.08	-10.35*
Sub-dimensions of the HIV/AIDS preventive self-efficacy						
Refusing sexual intercourse	629	28.14	9.38	34.90	7.53	-10.43**
Questioning potential sexual partners	658	14.26	4.43	16.39	3.74	-6.86**
Condom use	628	32.03	8.06	35.76	6.34	-6.86**

\* $p < .05$ . \*\* $p$  (adjusted)  $< .05/3 = .017$ .

### HIV/AIDS PREVENTIVE SELF-EFFICACY AMONG TAIWANESE ADOLESCENTS

The average overall HIV/AIDS preventive self-efficacy among all participants ( $N = 734$ ) was 74.45 ( $SD = 17.05$ ). All Taiwanese adolescents who participated in this study reported a mean score of 30.67 ( $SD = 9.35$ ) on the dimension of HIV/AIDS preventive self-efficacy regarding Refusing sexual intercourse (possible subtotal score is 9 to 45 for this dimension), a mean score of 15.03 ( $SD = 4.31$ ) on the dimension regarding Questioning potential sexual partners (possible subtotal score is 4 to 20), and an average score of 33.42 ( $SD = 7.67$ ) on the dimension regarding Condom use (possible subtotal score is 9 to 45). The study also revealed that the average HIV/AIDS preventive self-efficacy scores for the participants who never had sexual intercourse experience were significantly higher than for those who had sexual intercourse experience ( $t = 2.31, p = .02$ ); and Taiwanese adolescents who had a history of substance use had significant lower HIV/AIDS preventive self-efficacy than those who had never used a substance ( $t = 3.67, p < .01$ ).

### GENDER DIFFERENCE IN HIV/AIDS PREVENTIVE SELF-EFFICACY

The results of the  $t$ -test analysis revealed that there were a significant difference in overall HIV/AIDS preventive self-efficacy scores between male adolescents and female adolescents (see Table 1). Male participants had significantly lower HIV/AIDS preventive self-efficacy than females ( $t = -10.35, p < .05$ ). Table 1 also presents the summaries of the differences in the three dimensions of HIV/AIDS preventive self-efficacy across gender. Female participants reported higher self-efficacy in all three dimensions than the males did (see Table 1).

In order to gain a better understanding about gender difference in HIV/AIDS preventive self-efficacy between male and female Taiwanese adolescents, each item of the AIDS-Prevention Self-Efficacy Scale was also inspected. The lowest five and highest five scored items of HIV/AIDS preventive self-efficacy were ranked based on the mean scores on each of the items. The investigation revealed that the greatest vulnerabilities of HIV/AIDS preventive self-efficacy among the participants are on the dimension of Refusing sex (see Table 2). Both male and female Taiwanese adolescents reported that they had lower self-efficacy to refuse sexual intercourse with someone "whom you have already had sexual intercourse" and "whom you want to fall in love with." Dissimilar to the result found in the male participants that showed a lower self-efficacy on the items "say no to sex with someone who pushed you to have sexual intercourse" and "say no to sex with who you wanted to date again," the female Taiwanese adolescents were found to have less self-efficacy to "walk into a store and buy condoms" and to "use condoms during sex after drink-

TABLE 2. Top Five Items on the AIDS Prevention Self-Efficacy Scale With Lowest Scores Across Gender

Gender	Items with lowest scores	Sub-dimension	Mean
Males			
(n = 461)	Top 1. (Say no to sex) with someone with whom you have already had sexual intercourse	Refusing sexual intercourse	2.44
	Top 2. (Say no to sex) with someone who you want to fall in love with you	Refusing sexual intercourse	2.67
	Top 3. (Say no to sex) with someone who is pushing you to have sexual intercourse	Refusing sexual intercourse	2.79
	Top 4. (Say no to sex) with someone you want to date again	Refusing sexual intercourse	2.86
	Top 5. Refuse to have sex if your boyfriend/ girlfriend will not use a condom	Refusing sexual intercourse	3.01
Females			
(n = 270)	Top 1. (Say no to sex) with someone with whom you have already had sexual intercourse	Refusing sexual intercourse	3.16
	Top 2. (Say no to sex) with someone who you want to fall in love with you	Refusing sexual intercourse	3.43
	Top 3. Walk into a store and buy condoms	Condom use	3.45
	Top 4. Use a condom during sex after you have been drinking	Condom use	3.56
	Top 5. Use a condom during sex after you have been using marijuana	Condom use	3.63

ing or using marijuana.” When the highest level of HIV/AIDS preventive self-efficacy among Taiwanese adolescents were investigated, the results revealed that both male and female Taiwanese adolescents reported that they had the stronger HIV/AIDS preventive self-efficacy regarding “say no to sex with someone whose sex and drug use history is not known,” “use condom correctly,” and “get the money needed to buy condoms” (see Table 3). Female participants in this study were highly certain of their ability to “refuse having sexual intercourse with someone you have known for a few days or less” (mean = 4.56, *SD* = 1.31) while male participants had much less certainty (mean = 3.55, *SD* = 1.40) on this item. About 90.2% of the female participants but only 56.7% of the male participants felt pretty sure or very sure to refuse having sexual intercourse with someone they have known for a few days or less. Among all items on the scale, male adolescents have higher self-efficacy on the item of “have a sexual relationship with only one person for a long period of time,” although the females have higher scores (Mean = 4.11, *SD* = 1.24) than the males (Mean = 3.90, *SD* = 1.24).

#### GENDER DIFFERENCES IN HIV/AIDS PREVENTIVE SELF-EFFICACY CONTROLLING FOR AGE, SEXUAL EXPERIENCES, AND SUBSTANCE USE

This study also revealed that gender differences in HIV/AIDS preventive self-efficacy also presented in adolescents who had sexual intercourse experience as well as in those who have not had the experience. Among Taiwanese adolescents who have never had sexual intercourse experiences, male adolescents reported significantly lower self-efficacy than the females ( $t = -8.862, p < .01$ ). Similar results were also found in participants who had sexual intercourse experiences ( $t = -6.04, p < .01$ ). Moreover, gender differences in HIV/AIDS preventive self-efficacy were found

TABLE 3. Top Five Items of the AIDS Prevention Self-Efficacy Scale With Highest Scores Across Gender

Gender	Items with highest scores	Sub-dimension	Mean
Males ( <i>n</i> = 461)	Top 1. Use a condom correctly	Condom use	4.08
	Top 2. (Say no to sex) with someone whose sex and drug use history is not known to you	Refusing sexual intercourse	3.99
	Top 3. (Say no to sex) with someone after you have been smoking marijuana	Refusing sexual intercourse	3.98
	Top 4. Get the money needed to buy condoms	Condom use	3.98
	Top 5. Have a sexual relationship with only one person for a long period of time	Condom use	3.90
Females ( <i>n</i> = 270)	Top 1. (Say no to sex) with someone whose sex and drug use history is not known to you	Refusing sexual intercourse	4.67
	Top 2. (Say no to sex) with someone you have known for a few days or less	Refusing sexual intercourse	4.56
	Top 3. Get the money needed to buy condoms	Condom use	4.33
	Top 4. Use a condom correctly	Condom use	4.32
	Top 5. Ask your boyfriend/girlfriend if he/she has ever injected drugs such as heroin or cocaine into his/her veins	Questioning potential sexual partners	4.24

among adolescents with and without a history of substance use. Among Taiwanese adolescents who self-reported a history of substance use, male adolescents reported significant lower self-efficacy than the females ( $t = -8.148, p < .01$ ). Similarly, male adolescents also reported significantly lower self-efficacy than the females among Taiwanese adolescents who had no history of substance use ( $t = -7.413, p < .01$ ).

Analysis of covariance (ANCOVA) revealed that the main effects of gender difference was significant in Taiwanese adolescents' HIV/AIDS preventive self-efficacy while controlling for their age, sexual experiences, and substance use,  $F(1, 674) = 114.36, p < .05$ . The covariate sexual experience made significant main effect on the HIV/AIDS preventive self-efficacy,  $F(1, 674) = 8.34, p < .05$ , and substance use also had a significant main effect on HIV/AIDS preventive self-efficacy,  $F(1, 672) = 12.16, p < .05$ . After controlling for the covariates, the results showed that female Taiwanese adolescents had higher HIV/AIDS preventive self-efficacy ( $n = 250$ , adjusted mean = 87.68,  $SD = 14.08$ ) than those of the males ( $n = 429$ , adjusted mean = 74.02,  $SD = 17.07$ ). Table 4 summarizes the results of this ANCOVA analysis.

## DISCUSSION

The average overall score of 74.45 indicated a medium degree of HIV/AIDS preventive self-efficacy and an overall weakness among these Taiwanese adolescents in their abilities to perform HIV/AIDS preventive behaviors. Further analysis found that only 35 out of the 734 participants were very sure or sure in their abilities to perform all HIV/AIDS preventive behaviors asked in the questionnaire. This study also revealed that most participants were uncertain about their abilities to refuse having sexual intercourse with someone who they already had sexual intercourse with, who they want to fall in love with, and who they have dated for a long time. While literature showed that adolescents may feel vulnerable under this high social pressure condition when they perceived insufficient social skills to refuse potential

TABLE 4. ANCOVA Analysis of the Differences in HIV/AIDS Preventive Self-Efficacy Between Males and Females While Controlling for Age, Sexual Experience, and Substance Use as Covariates

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	33269.14	4	8317.28	33.820	.000
Intercept	7074.52	1	7074.52	28.766	.000
Age	411.62	1	411.62	1.674	.196
Sexual experience	2050.57	1	2050.57	8.338	.004*
Substance use	2990.15	1	2990.15	12.159	.001*
Gender	28123.51	1	28123.51	114.356	.000*
Error	165756.26	674	245.93		
Total	4441880.00	679			
Corrected Total	199025.40	678			

\* $p < .05$ .

partners who attracted them sexually (Kasen et al., 1992), the results of the study indicate that most adolescents in this study need to reinforce or develop their skills of communication, negotiation, and personal control in sexual situations.

Consistent with previous research in which self-efficacy related to a specific behavior was found to vary by gender (Cecil & Pinkerton, 2000; Kasen et al., 1992; Muñoz-Silva et al., 2007; Rosenthal et al., 2002; Takahashi et al., 2006), this study revealed that female Taiwanese adolescents had significantly higher HIV/AIDS preventive self-efficacy than their male counterparts had. Compared with the female Taiwanese adolescents, this study found that male adolescents had significantly lower self-efficacy related to refusing sexual intercourse. Especially, all of the bottom five items with the lowest scores of self-efficacy in the male Taiwanese adolescents were related to Refusing sexual intercourse. The developmental stage of adolescents and Chinese cultural social expectations for different gender role behaviors probably contributed to this dissimilarity. It has been found that developing a sense of identity, including peer identity, individual identity, and sex-role identity is an important task in adolescence (Erikson, 1963). Masculinity, expected for every male in Chinese culture, is usually linked to the ability and performance of sexual activities by many Chinese people (Brownell & Wasserstrom, 2002). These male Taiwanese adolescents may perceive that to refuse sexual intercourse is an indicator of not being masculine and is out of the social expectation for being a man. Previous studies also indicated that males had higher self-efficacy than the females in asserting their sexual needs but less self-efficacy in saying no to sexual demands (Rosenthal et al., 2002). It could be a useful approach to help male Taiwanese adolescents to understand that they can demonstrate their masculinities by practicing safer sexual behaviors since this is consistent with the Chinese cultural views about gender roles where men are expected to protect women.

Although female Taiwanese adolescents in this study reported higher self-efficacy than their male encounters in all three sub-dimensions of HIV/AIDS preventive self-efficacy, the findings of this study also revealed that most of the bottom five items indicating weakest HIV/AIDS preventive self-efficacy among these female Taiwanese adolescents are related to condom use. Especially, in this study, "walk into a store and buy condoms" was one of the HIV/AIDS preventive behaviors which female adolescents are least confident to perform. In traditional Confucian norms which are embedded in the Chinese culture, premarital sex is prohibited, particularly for women (Gao et al., 2012; Zuo et al., 2012). While premarital sexual activity for

men is considered more socially acceptable, women are expected to remain virgin before marriage (Gao et al., 2012; Zuo et al., 2012). In Chinese culture, unmarried people who actively express their sexual desires may bring shame to the family and such acts are not condoned (Hahm, Lahiff, & Barreto, 2006). Chinese cultural norms also expect women to be less sexually aggressive than men and stay passive in sexual activities (Gao et al., 2012; Hong, Yamamoto, Chang & Lee, 1993; Zuo et al., 2012). Therefore, unmarried young girls who carry or prepare condoms might be considered being lustful, shameless, and highly inappropriate. The finding of this study brings a notice that helping female Taiwanese adolescents to enhance their confidences and responsibility regarding condom uses for protecting themselves may be critical. Knowledge or skills that could help female Taiwanese adolescents to be more confident to buy and use condoms may be essential to be included in the educational programs for HIV/AIDS prevention in Taiwan. Moreover, while female Taiwanese adolescents may feel hesitant and pressured to walk into a store and buy condoms due to the cultural expectations for women, allowing female adolescents to buy condoms without having to walk into stores and exposing themselves to the situation may be helpful to increase their self-efficacy of buying condoms. Setting up more vending machines selling condoms at locations where privacy and convenience could be maintained for young females Taiwanese could be a useful suggestion.

Similar to the male Taiwanese adolescents, the female Taiwanese adolescents in this study were also found that they had low self-efficacy to refuse sexual intercourse with someone they have already had sexual intercourse and with someone who they want to fall in love with. However, this study also revealed that female Taiwanese adolescents had pretty good confidence in saying no to sex with someone who they have known for few days. In traditional Confucian views, women are expected to be subordinate to men in every stage of life, and loyalty to the husbands is believed as the virtue of chastity (Gao et al., 2012; Zuo et al., 2012). Also, females in Chinese culture are expected to be conservative and self-constrained in sexual issues (Gao et al., 2012; Zuo et al., 2012). Females who easily express their sexual desires outside of marriage and are open in their sexual practices are usually viewed as transgressing morality, and they could also be viewed as "being a bad woman," since their behaviors are inconsistent with the definition of a good woman by traditional Chinese cultural perspectives (Gao et al., 2012; Zuo et al., 2012). These traditional Chinese cultural expectations of females may explain why most female participants reported a high degree of self-efficacy on refusing sex with someone whom they have known for only a few days or less but also reported a low degree of self-efficacy on refusing sexual intercourse with someone they have already had sexual intercourse or they want to fall in love with.

With the growing development of economic trades and the blooming media and technology speeding up the world's globalization, the western civilization, values, and lifestyles have concurrently been introduced to many Asian countries (Chia et al., 1994; Gao et al., 2012; Zuo et al., 2012). Taiwan has been undertaking noticeable socio-cultural changes following the modernization, industrialization, and globalization in recent years, and the influences of traditional Confucian ideals on gender roles have begun to weaken (Chia et al., 1994; Gao et al., 2012; Zuo et al., 2012). Taiwanese young people's sexual attitudes and behaviors have been rapidly changing (Chiao & Yi, 2011; Gao et al., 2012). The premarital sexual behavior is increasingly accepted by young people in Taiwan (Chiao & Yi, 2011; Gao et al., 2012). However, while the Taiwanese adolescents' sexual behaviors and attitudes are becoming less conservative, the traditional Chinese culture value and social stig-

ma still influence Taiwanese adolescents' confidences and self-efficacy for performing some HIV/AIDS preventive behaviors. Since delaying first sexual intercourse has been considered as an important strategy in the prevention of HIV/AIDS infection (Centers for Disease Control and Prevention, 2010), the Chinese cultural expectations related to the restriction of premarital sex may serve as a protective factor for Taiwanese adolescents. However, these Chinese cultural beliefs could also be barriers for HIV/AIDS prevention, especially in sexually active Taiwanese adolescents. These cultural beliefs diminish some dimensions of Taiwanese adolescents' HIV/AIDS preventive self-efficacy. Because of these possible barriers from Chinese cultural belief, interventions for HIV/AIDS prevention should also aim to educate and increase Taiwanese female adolescents' awareness and confidence with being in charge of protecting themselves from HIV/AIDS infections.

Several limitations of the study should be noted. First, findings cannot be considered representative of the female Taiwanese adolescents and male Taiwanese adolescents due to the fact that a nonprobability, convenience sampling method was used to obtain this study sample from one metropolitan located in southern Taiwan. It is possible that Taiwanese adolescents who live in a bigger/smaller city or northern Taiwan may perform their HIV/AIDS preventive self-efficacy differently from those adolescents who participated in this study. Therefore, collecting data from adolescents who live in different areas of Taiwan in future related studies may be suggested. Replications of the study among adolescents in different social-cultural settings may be important for understanding the roles of gender and culture differences in adolescents' HIV/AIDS preventive self-efficacy. Second, the self-administered questionnaires were used to collect data for this study, and it may be possible that some participants may not honestly answer all questions on the questionnaires. However, enormous care and procedures were taken to assure the confidentiality of the participants during the data collection procedure, and the threats to the study validity that might be caused by this data collection method may have been minimized.

## CONCLUSIONS

Few studies have described Taiwanese adolescents' self-efficacy for HIV/AIDS preventions. Positive relationships of self-efficacy on behavioral changes of reducing HIV/AIDS related risk behaviors (Bandura, 1994) highlight the value of enhancing self-efficacy for preventing HIV/AIDS related risky sexual behaviors. Learning about males' and females' HIV/AIDS preventive self-efficacy in particular cultural contexts may be an integral part of HIV preventive intervention efforts. Enhancing self-efficacy for preventing HIV/AIDS related risky sexual behaviors should be one of the goals to be included in HIV/AIDS preventive interventions for Taiwanese adolescents. Female Taiwanese adolescents should be taught to take a more active role on sexual decision making. Education focused on promoting gender equality and empowering Taiwanese females' autonomy is necessary. Findings of this study may aid healthcare providers' understanding and capabilities to design gender-specific and culturally competent interventions for this population. Although the non-random sample of this study limits its generalizability, this study provides preliminary evidence to support that a gender specific approach is necessary when developing HIV/AIDS prevention programs for Taiwanese adolescents. Health care professionals as well as educators can utilize information from this study to develop HIV/AIDS preventive interventions for adolescents in Taiwan.

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