

# Sex Acculturation and Risk Perceptions: Information Seeking and Processing Among Chinese Students in the U.S.

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SEX ACCULTURATION AND RISK PERCEPTIONS: INFORMATION SEEKING AND  
PROCESSING AMONG CHINESE STUDENTS IN THE U.S.

by  
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ABSTRACT  
SEX ACCULTURATION AND RISK PERCEPTIONS: INFORMATION SEEKING AND  
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Jieyu Ding, B.A

Marquette University, 2017

The number of Chinese students studying in the United States is increasing each year and studying in the U.S. provides them with more access to risk information of sexual activities than that of their counterparts in China. Chinese students in the U.S. have shown higher knowledge level about HIV/STI than Chinese students in China. However, their risk perceptions about HIV/STI are relatively low compared to American students due to a lack of formal sex education and a sex-conservative society. Method: this study collected 385 online surveys via Survey Monkey from Chinese students studying in the U.S. The questionnaire was designed to examine Chinese students' risk perceptions and their information seeking and processing behaviors about HIV/STI. Results: the study showed that Chinese students were most motivated by their perceived informational gathering capacity to seek more information about HIV/STI (beta = .38,  $p \leq .001$ ) and process it in depth (beta = .30,  $p \leq .001$ ). Both informational subjective norms (beta = .16,  $p \leq .001$ ) and informational insufficiency (beta = .19,  $p \leq .001$ ) predicted information seeking behaviors but only informational subjective norms predicted significant systematic processing (beta = .17,  $p \leq .001$ ). However, current knowledge was very high and did not motivate processing behaviors. Future studies should explore motivations for information seeking and processing when current knowledge level is high and unable to motivate seeking and processing behaviors.

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## I. INTRODUCTION

The number of Chinese students studying in the United States is increasing each year and studying in the U.S. provides them with more access to risk information of sexual activities than that of their counterparts in China. Chinese students in the U.S. have shown higher knowledge level about HIV/STI than Chinese students in China. However, their risk perceptions about HIV/STI are relatively low compared to American students due to a lack of formal sex education and a sex-conservative society. Studies have shown that Chinese students rely on the Internet to seek for information about HIV/STI and a lot of them seek information in Chinese. Therefore, it is valuable to conduct a research on how Chinese students in the U.S. seek and process risk information about HIV/STI and what factors that affect their seeking and processing behaviors. The Risk Information Seeking and Processing (RISP) model will be applied to this study. The study will contribute to health practitioners and health educators on how to communicate risk information of HIV/STI among Chinese students in the U.S.



## **HIV and STD Situations in U.S. and China**

Unprotected sexual behaviors can lead to risky consequences, such as HIV/AIDS, sexually transmitted infections (STIs), and unintended pregnancy (Centers for Disease Control and Prevention, 2015). Among them, sexually transmitted infections result in chronic diseases, AIDS, pregnancy complications, infertility, cervical cancer, and even death (World Health Organization, 2008).

According to World Health Organization, There are an estimated 333 million new cases of curable sexually transmitted infections each year worldwide with the highest rates among 20-24 year olds, followed by 15-19 year olds. One in 20 young people are believed to contract a STI each year, excluding HIV and other viral infections (Karl & Gabriele, 2005). In the United States, over 50% of the 20 million new sexually transmitted diseases each year are among young people aged 15 to 24 (Satterwhite, et al., 2008). Moreover, around 10,000 young people aged 13 to 24 were diagnosed with HIV infection in the U.S. in 2013 (Centers for Disease Control and Prevention, 2015a). In the year of 2013 alone, over 273,000 babies were born to teenage girls aged 15 to 19 years old (Joyce, Martin, Hamilton, Osterman, Curtin, & Mathews, 2015).

The situation in China is similar. In 2011, a cumulative 780,000 HIV infection cases with 48,000 new infections were found in China (Ministry of Health of the People's Republic of China, 2012). Mostly, young people were affected by this epidemic: people aged 20 to 29 and 30 to 39 years old made up 33% and 40 %, respectively.

respectively, of the HIV-infected population in China (Joint United Nations Programme on HIV/AIDS, 2008). College students are considered vulnerable to HIV infection if they are under the influence of alcohol or drugs, if they are under peer pressure, or if they lack maturity (Sun, Liu, Shi, Wang, Wang, & Chang, 2013).

### **Sexual Behaviors Among Chinese Students**

Compared to Western European and North American societies where the tolerance for premarital sex is relatively high, Asian cultures value chastity more and have more conservative attitudes toward premarital sex (Widmer, Treas, Newcomb, 1998; David, 1989). Nevertheless, studies have shown that young people in China now are less concerned with traditional sexual attitudes and are more willing to accept premarital sex (Zhang, Pan, Cui, Law, Farrar, & Ba-Thein, 2013; Song, 2015).

Findings from 1989 to 1997 showed that a growing number of Chinese college students were engaging in sexual behaviors. A study in 1989 revealed that 13% of male students and 6% of females had premarital sex experiences (Zhang, 1993). A 1997 survey showed that 15% of males and 13% of females were sexually active (Li, Wang, & Xu, 1998). The average age of first intercourse among Chinese college students decreased from 21 years old in 2001 to 19-20 years old from 2003 to 2008 (Yan, Li, Bi, Xu, & Li, 2010; Albrektsson, Alm, Tan, & Andersson, 2009; Lonn, Sahlholm, Maimaiti, Abdukarim, & Andersson, 2007; Ma, Ono-Kihara, & Cong et al., 2009; Cottrell, Li, & Stantion et al., 2005).

## **Sex Education on STD/HIV in China**

Although young people in China are more likely to accept premarital sex than older generations, a lack of formal sex education is a big problem (Song, 2015). Sex education has been included in the formal curriculum of junior high schools but practically it is ineffective and limited (Sun et al., 2013). The lack of formal sex education from schools compelled Chinese college students to seek HIV/AIDS information from informal channels, such as the Internet, newspapers, magazines, television, radio, or discussions with family and friends (Lonn et al., 2007; Tan, 2008).

School-based sexuality education has taken effect since 1913 in the United States (Elia & Tokunaga, 2015). Contents and methodologies of sex education in the U. S. are regulated, and topics such as general health education, sexually transmitted diseases (STDs), HIV/AIDS, contraception, abortion, and human sexuality are required to be covered by the law (Lashof-Sullivan, 2015).

Every year, hundreds of thousands of Chinese students come to study in the United States and in the academic year of 2014 to 2015, 304,040 students from China were studying in the U. S., making up 31.2% of international students studying in the U.S. (Institute of International Education, 2015). Coming from a country where sex education is limited and sex beliefs are less traditional among younger generations, Chinese students are encountering a risky situation in which they have relatively little knowledge about HIV or STI. Therefore, I propose to conduct a study on risk perceptions of STI (HIV INCLUDED) among Chinese students studying in the

United States where sex education and information are more accessible. In this research, I want to know what their risk perceptions of performing sex are, their seeking of sex information, and how their perceptions might change over time after living in the U.S.

### **Information Seeking and Processing about Health Issues**

Information seeking and processing have important predictive values to people's health behaviors (Lu, 2015; Yang et al., 2010; Clarke & McComas, 2012; Chang, Basnyat, & Teo, 2014). Yang et al. (2010) have found that optimistic feelings and informational subjective norms—people's perceptions that relevant others believe he or she should or should not perform a particular behavior—directly predict information seeking and processing toward clinical trial enrollment. Clarke and McComas (2012) also found that perceived social pressure to remain informed about vaccination was a strong predictor of information seeking and systematic processing toward vaccination knowledge. Lu (2015) also discovered that informational subjective norms were directly related to both systematic processing and heuristic processing about health risks from eating American-style food.

## II. Literature Review

### **HIV Knowledge and Behavior Among Chinese College Students in China and the United States**

Tung, Cook, Lu, and Yang (2013) conducted a comparative and correlational cross-sectional study to examine the differences of HIV/AIDS knowledge, attitudes, sexual behaviors, and sources of HIV/STI information among Chinese college students in China and the United States. Results showed that Chinese college students in the U. S. scored higher than the students in China in the area of factual knowledge of HIV/AIDS and awareness of personal risk. A possible explanation for this difference was that accurate HIV/AIDS information was more accessible to the Chinese college students in the United States (Tung, Cook, Lu, & Yang, 2013), and that they sought it out.

In regard to sexual experience, 17.8% of Chinese students in China and 57.9% of Chinese students in the U. S. had had sexual intercourse, the difference possibly due to change of beliefs after moving to the U. S. or not living with any parents (Tung, Cook, Lu, & Yang, 2013). But their U. S. counterparts are more sexually active and nearly 87% of American college students reported having had sex (Adefuye, Abiona, Balogun, & Lukobo-Durrell, 2009). The differences among Chinese students in China, Chinese students in the United States and U.S. college students probably demonstrated two things: cultural differences in terms of sexual beliefs and how U.S. sexual beliefs influenced Chinese students studying here (Tung, Cook, Lu, & Yang,

2013).

The study also revealed that Chinese students in both samples relied mainly on the Internet and traditional media as channels of acquiring HIV/STI information, which showed the importance of online and mass media as sources of health information (Tung, Cook, Lu, & Yang, 2013). Among Chinese students in the U. S., the association of their use of traditional media channels with their HIV-related knowledge was stronger than with other channels, such as the Internet, family members, schoolteachers, and friends (Tung, Cook, Lu, & Yang, 2013). In contrast, most of Chinese students in China have fewer opportunities to be exposed to HIV/STI information due to government's monitors and regulations over traditional media (Lou, Cheng, Gao, Zuo, Emerson, Zabin, 2012). Health information is more accessible to the audience through traditional media channels in the U.S. (Tung, Cook, Lu, & Yang, 2013).

### **Sexual Behaviors, Decisional Balance, and Self-efficacy Among Chinese College Students in the United States**

In another study (Tung, Daniel, Cook, & Lu, 2012), Chinese college participants in the United States showed very low risk perceptions related to possible HIV/STI and other consequences. 72.7% of sexually active participants reported that they had not consistently used condoms because 48% thought that their partners were trustworthy, 20.8% believed that condoms reduced pleasure, 14.2% said that their

partners disliked using condoms, and 9.1% thought that condoms were difficult to find.

Besides general perceptions and behaviors, participants who were under the influence of alcohol or drug reported having less condom use self-efficacy than those who were not under the influence (Tung, Daniel, Cook, & Lu, 2012). This result is consistent with evidence from two studies of STI patients in the U.S. and the research showed that, for women with nonprimary partners, alcohol consumption before sex was associated with less condom use (Scott-Sheldon, Carey, Venable, Senn, CouryDoniger, & Urban, 2009) and college female students revealed that their alcohol use was related to high-risk sexual behavior (Kennedy & Roberts, 2009).

Thus, problems of low-risk perception, inconsistent condom use, and alcohol influence are threatening to Chinese college students in the U.S., as they receive limited formal sex education in China before coming to the U.S. (Huang, Bova, Fennie, Rogers, & Williams, 2005).

### **Female International Students and Sexual Health**

A qualitative study into knowledge, beliefs and attitudes done among international students at the University of Adelaide showed that students felt that they had received limited sexual health education, especially in terms of basic anatomy and physiology, and they indicated a lack of teaching about contraception or sexually transmissible infections (Burchard, Laurence, & Stocks, 2011). Limited sex education has also been found from a study in Sydney that compared sexual health

knowledge of first year university students from Australia and Asia (Song, Richters, Crawford, & Kippax, 2005).

The Adelaide study also found out that Chinese students had complex attitudes about premarital sex. On the one hand they regarded female virginity as extremely important in China while on the other hand most of them stated that being away from parents gave them more sexual freedom and they sensed a radical change in attitudes toward premarital sexual activity (Burchard, Laurence, & Stocks, 2011). Participants found themselves buffeted between conflicting cultures, between the conservative attitudes in China and a more sexualized Australian culture (Burchard, Laurence, & Stocks, 2011).

What's more, participants reported that they had difficulty accessing sexual health information and they did not realize that general practitioners could help them understand sex information. Almost all of the students in the study were very keen to have more sexual health education (Burchard, Laurence, & Stocks, 2011).

According to the literature review above, Chinese students lacked formal sex knowledge and education whereas they were more likely to perform sexual behaviors than their counterparts in China. Therefore, I propose to conduct a study about their risk perceptions of sexual health, how likely they would seek out more sex information, and how living in the United States might influence their attitudes and perceptions.



### III. Theoretical Overview

Given that Chinese students in the U.S. have been exposed to HIV/STI information more than their counterparts in China (Tung, Cook, Lu, & Yang, 2013), it would be necessary to examine how Chinese students seek and process information about sexual risks to cope with their limited sex education (Huang, Bova, Fennie, Rogers, & Williams, 2005) and their low risk perceptions (Scott-Sheldon, Carey, Vanable, Senn, CouryDoniger, & Urban, 2009). I propose to use the Risk Information Seeking and Processing (RISP) model developed by Griffin and his colleagues to understand how individuals respond to messages about health risks (Griffin, Dunwoody, & Yang, 2013; Griffin, Neuwirth, & Dunwoody, 1999; see Figure 1 for more details). The RISP model was developed to help researchers describe, predict, and understand individual variations in motivation and capacity for risk information seeking and processing; it examines factors affecting risk information seeking and processing and ultimately the risk behavior outcomes of those actions (Griffin et al., 1999).

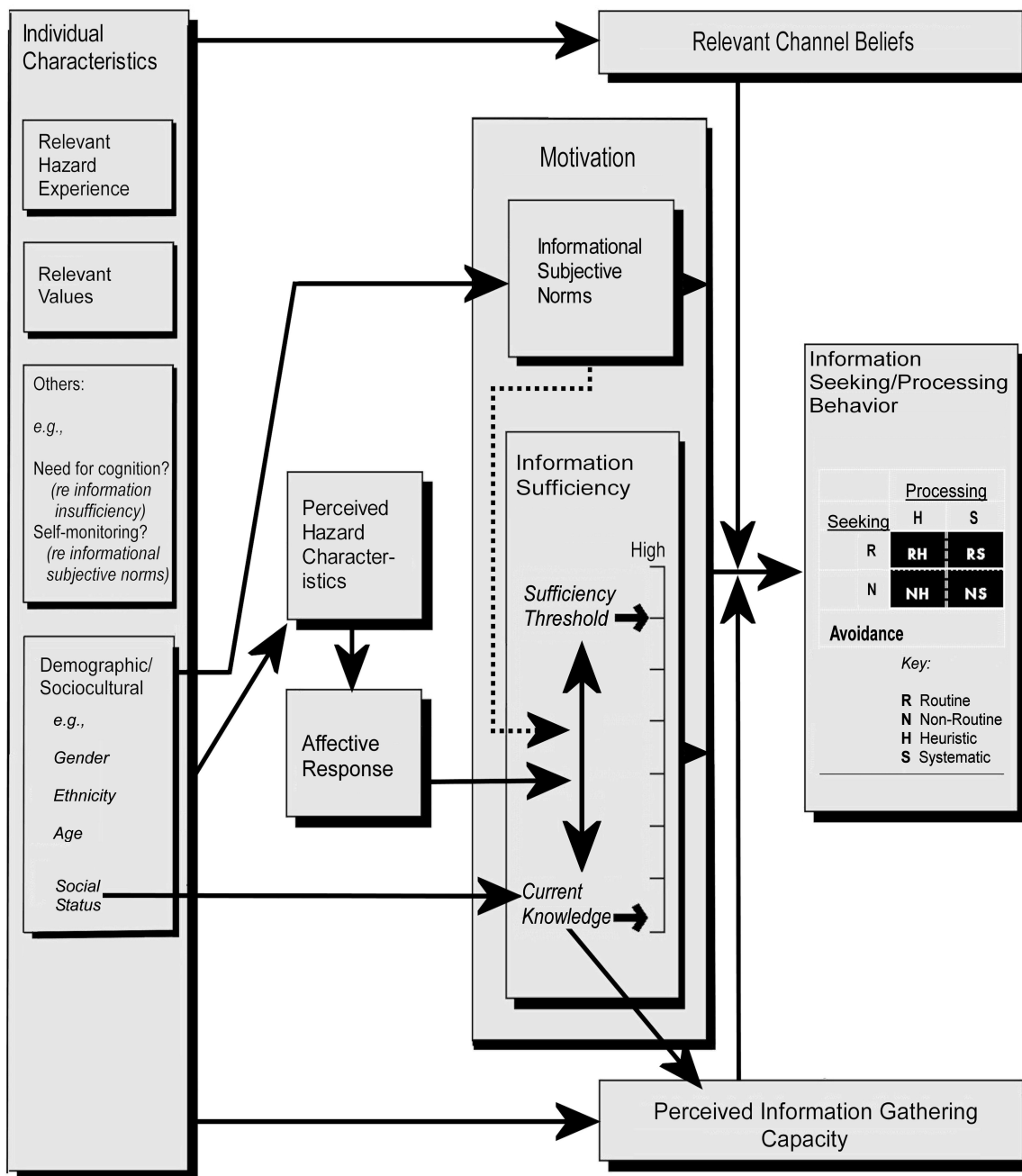


Figure 1 Amended RISP Model (Griffin, Dunwoody, & Yang, 2013, p. 352)

## **Perceived Hazard Characteristics and Affective Response**

Perceived hazard characteristics (PHC), also known as cognitive precursors, include measures related to a sense of personal or impersonal risk. Perceived hazard characteristics in the RISP model influence information seeking and processing in other concepts. Included in PHC are risk judgments, composed of perceived severity (individuals' perception about the magnitude or significance of the risk) and susceptibility (individuals' perception of the likelihood that they will be affected by the risk), consistent with what the Health Belief Model (Janz & Becker, 1984) suggests.

Besides severity and susceptibility, personal efficacy is an important PHC variable in this study because it plays a role in predicting preventive behaviors (Griffin et al., 1999). Self-efficacy is a measure originally from Albert Bandura (1977) and he defined self-efficacy beliefs or expectations as "one's ability to perform the tasks that one views as necessary for attaining valued goals". Bandura believed that self-efficacy beliefs were among the most important determinants of human behavior. Ajzen and other scholars adopted this concept in the Theory of Reasoned Action and the Theory of Planned Behavior: the sense of control or efficacy an individual perceives over performing a certain behavior (Neuwirth, Dunwoody, & Griffin, 2000). In the RISP model, self-efficacy refers to personal control over harm from the hazard. In this study, personal efficacy would be a person's beliefs of whether he or she could control the risks of getting infected with STI (HIV included).

It is believed that fear engendered by severity and susceptibility of hazard will cause people to assess possible coping strategies for preventive behaviors including (1) response efficacy—a belief whether something will work (adequacy) for a preventive behavior, (2) self-efficacy—an evaluation of one’s ability to successfully complete the adaptive behavior, and (3) response costs—an estimate of the costs related to the behavior (Neuwirth, Dunwoody, & Griffin, 2000).

Affective responses to the risk, such as worry or anger, are emotional evaluations of a risk. Worry is closely related to health risks and it motivates information seeking and processing about a risk indirectly through information sufficiency. Worry is a form of anxiety that is recurrent due to a future hazard (Griffin et al., 1999). Consistent with the RISP model, in this study, it is hypothesized that perceived hazards from STI (HIV included) (higher risk judgment, lower efficacy, greater threats to personal values) would generate greater worry among Chinese students in the U.S.

### **Informational Subjective Norms**

According to the Theory of Planned Behavior (Ajzen, 1991), subjective norms refer to “the perceived social pressure to perform or not to perform the behavior” (p. 188). Informational Subjective Norms (ISN) refer to perceived social norms that influence people’s motivation to achieve information sufficiency, typically by the behaviors of seeking and processing risk-relevant information (Griffin et al., 1999). Informational Subjective Norms (ISN) reflect what people believe about what important others think they should know about a risk (Griffin et al., 2013). ISN would increase the knowledge gap between the actual knowledge and sufficiency threshold thus motivating information seeking and processing (ter Huurne, Griffin, & Gutteling, 2009). ISN could also affect seeking and processing directly in the new model. It would be reasonable to examine whether important others to Chinese students are likely to influence their risk information seeking and processing about STI (HIV included) information.

## **Information (In) Sufficiency**

According to the RISP model, information sufficiency refers to the confidence a person wants to have in his or her knowledge about a risk (information sufficiency threshold) or the belief that one needs to obtain certain amount of information to cope with a risk (Griffin et al., 1999). Chaiken et al. (1989) argue that individuals will invest the time and energy needed to obtain the desired level of confidence in terms of a decision and that level is called “sufficiency threshold.” A low threshold may generate heuristic processing, while a high one may promote systematic processing (Dunwoody & Griffin, 2015).

Information *insufficiency* is the subjective gap between what one currently knows about a risk and what one needs to know in order to make a confident-enough decision about it. Information insufficiency is expected to motivate people to seek and systematically evaluate messages until a desired sufficiency threshold is reached and people are satisfied with or confident in their belief, knowledge, and decision (Griffin et al., 2005). Chinese students sensed their insufficiency in terms of sexual health, such as the use of contraception or sexually transmissible infections (Burchard, Laurence, & Stocks, 2011) therefore their insufficiency would motivate their information seeking and processing behaviors.

In the RISP model, informational subjective norms and affective responses will influence individuals’ confidence level thus widening or narrowing the gap between current knowledge and sufficiency threshold. If informational subjective norms or

affective responses widen the gap, then consistent with the RISP model, individuals may be motivated to seek and process information more deeply.

I also propose to test students' actual knowledge level of sexual risks as a way to see whether Chinese students' actual knowledge level coincides with their sufficiency or insufficiency beliefs and how it interacts with other information seeking and processing variables.

### **Perceived Information Gathering Capacity**

The RISP model indicates that information accessibility would influence information seeking and processing (Griffin et al., 2013). Accessibility is described as "perceived information gathering capacity" (PIGC) or a person's ability to locate and process information about an issue they want (Griffin et al., 1999). Perceived information gathering capacity is also known as one's sense of self-efficacy (Bandura, 1989) or perceived behavioral control (Ajzen, 1988) in performing behaviors, which are important predictors to behavioral intention or behavior (Griffin et al., 1999). Note that PIGC refers to perceived efficacy in relation to being able to seek and process risk information. Efficacy in PHC refers to one's ability to protect oneself otherwise from a risk, for example, through protective behaviors. Thus, it is expected that perceived information gathering capacity will demonstrate individuals' perceived ability to perform the information seeking and processing required to meet their goals, particularly goals requiring more effort such as the nonroutine gathering of information and the more energetic, systematic processing of it (Griffin

et al., 1999). The higher the perceived capacity the more that motivated people would be able to seek and process risk information. Chinese students studying in the U.S. encounter difficulty in locating health information as they lack certain sex education in China (Burchard, Laurence, & Stocks, 2011).

In this study, I will examine what are the differences and likely results of Chinese students' capacity to locate risk information about sexual activities from Chinese and English channels because English deficiency reduces online information seeking behaviors in English channels among Chinese students in the U.S. (Wang & Sun, 2007) but English channels provide most of the access to STI (HIV INCLUDED)-related information for Chinese students (Tung, Cook, Lu, & Yang, 2013). Therefore it is important to know Chinese students' different capacities in seeking information from the two channels in order to analyze possible relations with their risk judgments, information insufficiency, and relevant channel beliefs.

### **Relevant Channel Beliefs**

Channel beliefs are people's cognitive and affective evaluations of risk-related information channels. The RISP model expects that these beliefs could moderate individuals' seeking behaviors (Dunwoody & Griffin, 2014). Channels, different from sources, gather, package, and convey information acquired from sources (Dunwoody & Griffin, 2015). Individuals evaluate the 'quality' of a channel based on the cost of accessing any particular information channel and the likelihood that a channel will contain information relevant to the need (Dunwoody & Griffin, 2015).



Chinese students in the U.S. reported that their dominant way of acquiring information about HIV/STI and relevant risks of sexual activities was from the Internet (Tung, Cook, Lu, & Yang, 2013) and Chinese students in the U.S. obtain information from Chinese channels—information from media in China—more than that from English channels—information from media in the U.S. (Wang & Sun, 2007). Therefore, it will be necessary to know from what channels students seek information about the risks of sexual activities and how beliefs about Chinese channels and English channels moderate their seeking behaviors.

### **Information seeking and processing**

Information seeking (routine and non-routine) refers to “a volitional process of selecting information channels to reach desired informational goals, as well as one of making choices to attend to messages embedded in any particular channel” (Dunwoody & Griffin, 2015, p. 103). Another form of information seeking is called avoidance of risk information (Case, Andrews, Johnson, & Allard, 2005; Howell & Shepperd, 2013; Sweeny, Melnyk, Miller, & Shepperd, 2010). Highly fearful risks without effective ways to reduce one’s exposure to those risks may result in avoiding risk information (Witte, 1992).

Information processing is the evaluative behaviors of the information user (Griffin et al., 1999). For the purpose of this study, it is based on the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1981) and primarily the Heuristic-Systematic Model (HSM) (Eagly & Chaiken, 1993). Both ELM and HSM

depict dual-information processing: heuristic processing is more superficial; requiring less effort, while systematic processing is deeper and more effort-intensive (Griffin et al., 1999). The latter form of information processing is more comprehensive and can produce more stable attitudes and beliefs (Eagly & Chaiken, 1993) and is related to more strongly held beliefs of a risk (Griffin, Neuwirth, Giese, & Dunwoody, 2002).

There are four categorical mixtures of the seeking and processing variables: (1) routine/heuristic (RH)—individuals attend to risk messages superficially through habitual use of media; (2) routine/systematic (RS)—individuals process information more deeply but still obtain information through habitual uses; (3) nonroutine/heuristic (NH)—individuals spend extra effort to gather information and process information uncritically; (4) nonroutine/systematic (NS)—individuals gather information intentional and process it deeply (Griffin et al., 1999).

Information seeking and processing are affected directly by informational subjective norms and information (in)sufficiency, moderated by perceived information gathering capacity and relevant channel beliefs. Informational subjective norms could also indirectly affect information seeking and processing by influencing information (in)sufficiency.

## Research Questions and Hypotheses

According to the study done by Wang and Sun (2007), the more time Chinese students spent in the U.S. the more they consumed U.S. media and accepted U.S. cultural values and behaviors including sexual culture. Therefore, it is important to examine:

RQ1: What are the relationships between time spent in the U.S. and Chinese students' judgments of being personally at risk from sexually transmitted diseases and HIV/AIDS?

Specifically, it is hypothesized:

H1: Time spent in the U.S. is positively related to Chinese students' judgments of being personally at risk from sexually transmitted diseases and HIV/AIDS.

RQ2: What is the relationship between perceived hazard characteristics (judgments of being at risk from STDs and HIV/AIDS) and affective responses?

Specifically related to risk judgment, it is hypothesized:

H2a: Risk judgment will be positively related to negative affect.

Since self-efficacy is another important factor of perceived hazard characteristics, and based on the assumption above, it is hypothesized:

H2b: Self-efficacy will be negatively related to negative affect.

RQ3: What are the relationships between information insufficiency and the seeking and processing of HIV/STI-related risk information?

Specifically, it is hypothesized:

H3a: Information insufficiency will be positively related to information seeking.

H3b: Information insufficiency will be negatively related to information avoidance.

The model also suggests that there is a positive relationship between information insufficiency and information processing, thus it is hypothesized:

H3c: Information insufficiency will be positively related to systematic information processing.

H3d: Information insufficiency will be negatively related to heuristic information processing.

Studies have shown that a positive relationship exists between informational subjective norms and information insufficiency. In this study, informational subjective norms (perceived social pressures to be knowledgeable about the risks) would also be examined in terms of how they might also influence students' seeking and processing behaviors more directly as well.

RQ4: What are the relationships between informational subjective norms and information insufficiency, and the seeking and processing of HIV/STI-related risk information?

Specifically, it is hypothesized:

H4a: Informational subjective norms will be positively related to information insufficiency.

In the amended RISP model, informational subjective norms also directly affect information seeking and processing, thus it is hypothesized:

H4b: Informational subjective norms will be positively related to active information seeking.

H4c: Informational subjective norms will be negatively related to information avoidance.

H4d: Informational subjective norms will be positively related to systematic information processing.

H4e: Informational subjective norms will be negatively related to heuristic information processing.

RQ5: What are the relationships between the tested knowledge level and current knowledge?

RQ6: What are the relationships between perceived information gathering capacity and information seeking and processing of HIV/STI-related risk information?

According to the model, it is hypothesized:

H6a: Perceived information gathering capacity will positively correlate with active (nonroutine) information seeking.

H6b: Perceived information gathering capacity will positively correlate with systematic processing of information.

H6c: perceived information gathering capacity will negatively correlate with heuristic information processing.

#### IV. Method

A convenience (non-random) sample survey was conducted through Survey Monkey, a free online questionnaire website. WeChat mobile app (a popular social media platform among Chinese students in the U.S.) was used to share the survey link. I contacted Chinese students Association from Columbia University in New York City, George Washington University, Georgia Institute of Technology, Academy of Art University in San Francisco, and also Marquette University. These Chinese students associations agreed to help me with my survey via WeChat.

The age range was limited to undergraduate students and graduate students, approximately 18 to 30. This survey was confidential and anonymous and a personal email address was asked at the end of the questionnaire: if respondents wanted to participate into the reward they could leave their email addresses on the last page of the survey, if they did not want to participate they could just close the last page. If students wanted to participate in the reward, their personal identifying information was separated from actual responses after the questionnaire was completed but a separate file of those who would like a chance at the reward was kept for drawing and distributing rewards. The recruiting process was the form of snowball. I spread the survey link to Chinese students in the U.S. whom I knew and asked them to spread the link to other Chinese students they knew. The actual response size was 385. The sample may contain possible biases due to snowball sampling technique. The students in the sample came from U.S. schools in the east coast, mid-west, and

west coast regions.

Questionnaire was designed according to research questions with the least sensitive questions at the beginning and the most sensitive questions such as gender, and year spent in the U.S. toward the end. The IRB at Marquette University had approved the survey in March, 2016.

### **Instrumentation**

The survey questionnaire contained forty-five items. Each of the RISP variables employed in the study was measured. Other items included demographic questions such as age, questions asking participants about the frequency they encountered information in media, and objective knowledge questions used for measuring the level of knowledge among the participants. The RISP-based items were adopted from previous research employing the RISP model. The survey mostly adopted the questionnaire from the master's thesis of Li (2015).

The survey questionnaire was administered via Survey Monkey, an online questionnaire software widely used among researchers (See Appendix B for survey questions). The first section of the survey was a consent form providing basic information about the principal investigator, the purpose of the study, the possible risks and benefits of participating in the study, and the explanation of confidentiality. After the content, there was an "I agree" button at the bottom of the page. By clicking on the button, the respondent agreed to participate the study, otherwise they could choose to exit the survey. The survey questions followed by the consent

form were translated into simplified Chinese so as to increase response rate. Each question was set as forced answer, thus the participants would have to answer all of the questions on one page in order to enter the next one. At the end of all the questions, there was a link leading participants to a separate page if they agreed to be considered for the prize drawing and they had to enter their e-mail addresses. Identifying information was totally excluded from the responses after the survey was complete.

### **Measured Variables**

This section will discuss variables measured in the current study. Factor analyses were conducted to test the variables measured by two or more questionnaire items. According to the results, redundant items were deleted to improve the internal consistency of the summated scales. Reliability tests were run on these summated scales and the Cronbach's Alpha's values were also recorded. Tables are attached in the appendix.

#### **Information seeking and Information Avoidance**

To measure the variable "Information Seeking", participants were asked to choose, via a 7-point Likert scale, whether they (1) *Strongly disagree*, (2) *disagree*, (3) *disagree a little*, (4) *neither disagree or agree*, (5) *agree a little*, (6) *agree*, or (7) *strongly agree* with the following statements: first, "When the topic of the risks of STI



(HIV included) comes up, I try to learn more about it” (Mean= 4.88, SD= 1.31), second, “When this topic comes up, I’m likely to go out of my way to get more information” (Mean= 4.75, SD= 1.33), and third, “When it comes to the topic of STI (HIV included)-related risks, I’m content to let information come to me in the course of my daily life” (Mean= 5.43, SD= 1.22). Factor analysis was conducted on the three items. The analysis extracted one component with all three items loading heavily on this factor. The Cronbach’s alpha of the reliability test was .76, which was above the acceptable value of .50. Deleting any of the three items would not improve the reliability so all three items were preserved for further analysis of the hypotheses.

“Information Avoidance” is measured on the same Likert-scale. Questions (1) “When the topic of STI (HIV included) comes up, I am likely to tune it out” (Mean = 2.86, SD= 1.49), (2) “Gathering a lot of information about the risks of STI (HIV included) is a waste of time” (Mean= 2.69, SD= 1.59), and (3) “Whenever the topic of sexual activity risks comes up, I go out of my way to avoid learning more about it” (Mean= 2.37, SD= 1.40). Factor analysis was conducted on the three items. The analysis extracted one component with all three items loading heavily on this factor. The Cronbach’s alpha of the reliability test was .74, which was above the acceptable value of .50. Deleting any of these three items would not improve the reliability so all three items were preserved for further analysis of the hypotheses.

### **Systematic Processing and Heuristic Processing**

To measure the variable “Systematic Processing,” participants were asked to choose, via a 7-point Likert scale with the following statements: (1) “After thinking about information on this topic, I have a broader understanding” (Mean= 5.16, SD= 1.20), (2) “It is important for me to interpret information about the risks of STI (HIV included) in a way that applies directly to my life” (Mean= 5.54, SD= 1.30), and (3) “If I need to act on preventing risks of STI (HIV included), the more viewpoints I get the better” (Mean= 5.54, SD= 1.25).

Questions to measure “Heuristic Processing” are (1) “When this topic comes up, I rarely spend much time thinking about it” (Mean= 3.08, SD= 1.56) and (2) “When I encounter risk information about STI (HIV included), I focus on only a few key points” (Mean= 4.82, SD= 1.39).

Factor analysis on all five items extracted two factors, with three items loading heavily on systematic processing (just as measured above), and two others loading heavily on heuristic processing (just as measured above), the results of which used the rotated component matrix that assumed that the components were uncorrelated. The Cronbach’s alpha of reliability test for systematic processing was .64 and deleting any three items would not improve its reliability. The Cronbach’s alpha of reliability test for heuristic processing was .49, which was still considered acceptable. However, deleting any of the two items would not improve its reliability. Thus, all five items were preserved for further analysis of hypotheses and they were summed up

equally.

### **Information Insufficiency**

In terms of measuring information insufficiency, two self-report items will be used: first, the current knowledge about the risk of the participants, and second, the information sufficiency threshold. Participants will be asked to choose from zero to 100 indicating the knowledge they think they have at the time about risks of STI (HIV included), with zero meaning knowing absolutely nothing and 100 meaning knowing everything a person could possibly know about the risks of sexual activities. After participants answer the current knowledge question, they will be asked to indicate how much knowledge they think they need in order to confidently deal with the risks of sexual activities in their lives. This question will also be asked using a zero-100 scale. The text for the question is written as “Please estimate the amount of knowledge you currently have about the possible risks to you from STI (HIV included). Then estimate the ideal amount of knowledge you would like to have to deal adequately with this risk in your life.” The mean value for current knowledge was 61.61 (SD=22.61), and 48.64 (SD= 28.65) for sufficiency threshold. The students may have already known much more about the topic than they care to know, which may have affected the results of the study when the information sufficiency variable is involved. Apart from the two self-reported items, the questionnaire also contained two Likert-scale questions for measuring information insufficiency as a back-up for the above pair of measures in case respondents will have difficulty in understanding

the two-item measure of information insufficiency: (1) “I need more information to judge the risks of STI (HIV included) I might be exposed to” (Mean= 5.69, SD= 1.54), and (2) “What I know about this topic is enough” (Mean= 4.50, SD= 1.56). During the analysis, only the original two self-reported items were used. Two regression tests were conducted to examine the relationships between sufficiency threshold and the two back-up questions. Results showed that sufficiency threshold was positively related to question one (beta=.32,  $p<.001$ ) and negatively related to question two ( $r=-.45$ ,  $p<.001$ ), which validated the result of the sufficiency threshold.

### **Perceived Information Gathering Capacity**

In order to measure the variable “Perceived Information Gathering Capacity”, participants were asked to indicate how well they could gather information about the risks of sexual activities on a 7-point Likert scale with the following statements: (1) “I would know where to go for information I could rely on from **Chinese** channels”(Mean= 4.34, SD= 1.69), (2) “I would know where to go for information I could rely on from **English** channels” (Mean= 4.48, SD= 1.72), (3) “I would know how to separate fact from fiction” (Mean= 4.83, SD= 1.38), (4) “I am able to get and make sense of information on this topic” (Mean= 5.25, SD= 1.27), (5) “I would know what questions to ask the experts” (Mean= 4.51, SD=1.41), and (6) “I could readily take the time to gather any additional information I might need” (Mean= 4.34, SD=1.38).

The analysis extracted one component with all six items loading heavily on this factor. The Cronbach’s alpha of the reliability test was .79, which was above the

acceptable value of .50. Deleting any of the six items would not improve the reliability so all six items were preserved for further analysis of the hypotheses.

**Efficacy** will be measured on two questions focusing on performing safe sex and the 7-point Likert-scale will be used (1) *Strongly disagree*, (2) *disagree*, (3) *disagree a little*, (4) *neither disagree or agree*, (5) *agree a little*, (6) *agree*, or (7) *strongly agree* with the following statements: (1) “I believe that practicing safe sex would protect me from STI (HIV included)” (response efficacy) (Mean= 5.63, SD= 1.23), and (2) “In my life, it would be easy for me to perform safe sex” (self-efficacy) (Mean= 5.70, SD= 1.31).

The analysis extracted one component with the two items loading heavily on this factor. The Cronbach’s alpha of the reliability test was .50, which was just as the acceptable value of .50. Deleting any of the two items would not improve the reliability so both items were preserved for further analysis of the hypotheses.

### **Informational Subjective Norms**

In order to measure the variable “Informational Subjective Norms” participants were asked about their perception of whether important people and other people or Chinese in the U.S. believe that they should be informed about the risks of STI (HIV included), and their perceptions of whether relevant others already know about the risks (Griffin, Dunwoody, & Yang, 2013). The 7-point Likert-scale was used with the following statements: (1) Most people who are important to me think that I should stay informed about the risks of STI (HIV included) (Mean= 4.82, SD= 1.58), (2) Most

of other Chinese students in the U.S. already know about the risks of STI (HIV included) (Mean= 3.73, SD= 1.40), (3) Most of American students in the U.S. already know about the risks of STI (HIV included) (Mean= 4.26, SD= 1.36). The first item is asking injunctive norms which focuses on describing what relevant others expect individuals to gather and process information whereas the latter two are examining descriptive norms which emphasize the behaviors of relevant others.

The analysis extracted one component with all three items loading on this factor with descriptive norms heavily loaded on this factor and one injunctive norm moderately loaded on it. The Cronbach's alpha of the reliability test was .53, which was above the acceptable value of .50. All of the three items were summated into one scale.

### **Negative Affects**

Participants were asked to indicate, on a zero-to-ten scale, how much worry they would feel if they are at risks of STI (HIV included). The question was phrased as "Now we'd like to know your feelings about the risk of being affected by STI (HIV included). Please use a scale from zero to ten, where zero means you have 'none of this feeling' and ten means you have 'a lot of this feeling.' When you think about the possible consequences posed to you by being infected with sexually transmitted infections (HIV included) 1) How much worry do you have? (2) How much uncertainty do you have?" Participants reported an average of 6.47 for worry

(SD=2.47) and 5.36 for uncertainty (SD=2.30).

### **Risk Judgment**

Risk judgment about sexual activities was calculated by multiplying two self-reported variables: (1) the perceived seriousness of being affected by risks of sexual activities, and (2) the perceived probability that a participant could be affected. Risk seriousness was measured by asking participants how serious they think it could be if they are affected by the risks of STI (HIV included). Probability was measured by asking them how likely they think they would be affected by the risks of sexual activities. Both questions used a zero to 100 scale with zero meaning “not at all serious”/ “absolutely no chance” and 100 meaning “as serious as it can be”/ “be certain to be affected.” Participants reported an average of 94.61 for risk seriousness (SD=13.19) and 13.65 for probability (SD=18.58). The new variable, risk judgment, ranged from zero to 10,000, had a mean score of 1249.18 (SD=1716.97).

### **Channels of Risk Information on Sexual Activities**

Participants were asked about the strength of their beliefs about risk information of sexual activities from Chinese and English channels. The 7-point Likert-scale was used with the following statements: (1) “In making my decision about safe sex, I would rely on information from **Chinese** Internet” (Mean= 4.69, SD= 1.42), (2) “In making my decision about safe sex, I would rely on information from **English**

**language** Internet” (Mean= 4.66, SD= 1.27), (3) “In making my decision about safe sex, I would rely on information from **Chinese** media (TV, newspapers, etc.) (Mean= 4.19, SD= 1.36)”, (4) “In making my decision about safe sex, I would rely on information from **English language** media (TV, newspapers, etc.)” (Mean= 4.27, SD= 1.36).

The factor analysis extracted two components from the four items, with English channels (Internet and mass media) heavily loaded on one factor and Chinese channels (Internet and mass media) heavily loaded on the other. The Cronbach’s alpha of the reliability test for the English channel items was .73 and the Cronbach’s alpha of the reliability test for the Chinese channel items was .68. Deleting any items from any two scales would not improve their reliability values so all four items were preserved and combined by their channel types (English and Chinese) using the factor score coefficients for further analysis of hypotheses.

### **Knowledge Level**

In addition to asking about perceived current knowledge level (information sufficiency), the questionnaire also included three objective knowledge questions about the basic facts of sexual activity risks. Knowledge scores were sum of correct responses for each respondent and DK answers were considered as wrong. Participants were asked to choose from true, false, or don’t know to indicate whether they know these facts prior to taking the survey. First, participants were asked whether unprotected sexual activities could increase the risks of getting



infected with sexually transmitted infections (HIV included). 354 respondents (N=372) answered it correctly, with the percentage being 95.2%. Second, participants were asked whether sexually transmitted diseases could increase the risks of getting HIV/AIDS. 291 respondents (N=372) answered it correctly, with the percentage being 78.2%. Third, participants were asked whether sexually transmitted diseases could increase the risks of infertility. 280 respondents (N=372) answered correctly to this question, with the percentage being 75.3%.

### **Demographics**

Age, year in school, and year in the U.S. were asked as demographic variables. Year in school was divided into freshmen, sophomore, junior, senior, graduate (master's level), and graduate (doctoral level). Year in the U.S. was asked to see if time spent in the U.S. would make a difference among all the variables, years were measured on interval scales: (1) 0-1 year, (2) 1-2 year(s), (3) 2-3 years, (4) 4 years or above. The average age for all participants was 23.7 (N= 372, SD= 2.89), with the median and the mode of 24 years old. The average year of all participants having been in the U.S. was between 1 to 3 years according to the mean of 2.55 for the scale (N= 372, SD= 1.49), with the mode of 1 year and the median of 2 years. In terms of the average grade year of college, 192 participants were master's level graduate students (N= 372), with the percentage being 51.6%. There were 120 undergraduate participants (N= 372), consisting of 32.3%.

## Data Analysis

Data were analyzed primarily using multiple regression in Statistical Package for Social Sciences (SPSS) 19.0 and path analysis in AMOS 21.0.

To address RQ1, and to test H1 a multiple regression test was run between time spent in the U.S. and risk judgments of Chinese students studying in the U.S. Year spent in the U.S. was entered to determine whether it had an influence on risk judgment of Chinese students studying in the U.S. To address RQ2 and test H2a and H2b, a multiple regression test was run between perceived hazard characteristics (risk judgments of being at risk from STDs and HIV/AIDS) and affective responses. To address RQ3, RQ4, RQ5, and RQ6, and test H3a, H3b, H3c, H3d, H4a, H4b, H4c, H4d, H4e, H6a, H6b, and H6c, multiple regression tests were run between information seeking and processing of HIV/STI-related risk information and other variables in RISP model, including information insufficiency, informational subjective norms, tested knowledge level, and information gathering capacity. Age was entered in all analyses in order to determine whether it exerted an influence on the information seeking and processing behaviors.

## Results

Table 1 shows the outcomes of the multiple regression tests run to calculate the relationship between demographic characteristics such as age, year in school (grade), and years spent in the U.S and risk judgment about risks of STD and HIV/AIDS. H1 hypothesized that time spent in the U.S. was positively related to Chinese students' risk judgments of being personally at risk from STD and HIV/AIDS. According to table 1, the result was not supported ( $\beta=.10$ ,  $p>.05$ ). Thus, time spent in the U.S. was not a good indicator to predict risk judgment.

**Table 1: Relationship of Demographics with Risk Judgment**

	Risk Judgment Beta (sig.)
Age	.08
Grade	-.12
Year spent in the U.S.	.09
$\Delta R^2$	.01
Multiple R	.13
Adjusted R <sup>2</sup>	.01
Overall ANOVA	F (3,365)=2.01 <i>ns</i>
N	368

Significance Key: a  $\leq$  .05, b  $\leq$  .01, c  $\leq$  .001

## **Affect**

The second research question asked about the relationship between perceived hazard characteristics (judgments of being at risk from STDs and HIV/AIDS) and affective responses. H2a hypothesized that risk judgment will be positively related to negative affect. In other words, people who are more worried or more uncertain about risks from STDs and HIV/AIDS will have higher risk judgment toward these two risks. Secondly, H2b forecasted that self-efficacy would be negatively related to negative affect. That is to say, people with higher self-efficacy would feel less worried or uncertain about risks from STDs and HIV/AIDS. Results (Table 2) indicated that risk judgment was positively related to both worry ( $\beta=.14, p \leq .01$ ) and uncertainty ( $\beta=.11, p \leq .05$ ). H2a was supported by the result. However, self-efficacy did not have a significant influence either on worry or on uncertainty thus H2b was not supported by the result. Age was found to be negatively related to worry ( $\beta=-.12, p \leq .05$ ), meaning the older students became the less they would be worried about risks from STDs and HIV/AIDS.

Other findings about affect were also discovered in table 3, information seeking was positively related to worry ( $\beta=.14, p \leq .01$ ), meaning that the more students were worried about STD and HIV, the more they would seek for information. Information avoidance ( $\beta=-.18, p \leq .01$ ), systematic processing ( $\beta=-.18, p \leq .001$ ), and heuristic processing ( $\beta=-.11, p \leq .05$ ) were all negatively related to worry.

**Table 2: Relationships of Risk Judgment and Self-Efficacy with Worry and Uncertainty**

	<b>Worry</b>	<b>Uncertainty</b>
	Beta (sig.)	Beta (sig.)
Age	-.05	-.09
Grade	-.09	.00
Year spent in U.S.	.00	-.02
$\Delta R^2$	.02	.01
Risk Judgment	<b>.13b</b>	<b>.11a</b>
$\Delta R^2$	.02	.01a
Self-efficacy	-.06	.05
Response-efficacy	.08	.10
$\Delta R^2$	.01	.01
Multiple R	.21	.18
Adjusted R <sup>2</sup>	.03	.01
Overall ANOVA	F (6,362)=2.73 <i>ns</i>	F=(6,362)=1.90 <i>ns</i>
N	368	368

Significance Key: a ≤ .05, b ≤ .01, c ≤ .001

### **Informational Insufficiency**

The third research question asked about the relationships between information insufficiency and the information seeking and processing of HIV/STI-related risk information. Specifically, H3a predicted that the gap between the perceived amount of knowledge that the students thought they already had and the amount of knowledge they believed they needed would be positively related to active information seeking. In other words, the more information insufficiency students perceived, the more likely that these students would engage in active information seeking behaviors. Secondly, H3b hypothesized that information insufficiency would be negatively related to information avoidance, which meant that the more

information insufficiency students thought they had, the less likely they were to avoid information about risks of STD/HIV. The results in table 3 indicated that information insufficiency, represented by the variable "sufficiency threshold" in the table had a significantly positive relationship with information seeking ( $\beta=.19$ ,  $p \leq .001$ ) but was not significantly related to information avoidance ( $\beta=-.01$ ,  $p \geq .05$ ). H3a was supported by the results whereas H3b was not supported.

As for information processing of STD/HIV, H3c suggested that information insufficiency would be positively related to systematic information processing and H3d predicted that information insufficiency would be negatively related to heuristic information processing. The hypotheses implied that the more information insufficiency students perceived, they would be more likely to process information about STD/HIV systematically and less likely to process information heuristically. However, the results were not significant, information insufficiency was found to have non-significant positive relationships with systematic processing ( $\beta=.11$ ,  $p \geq .05$ ) and with heuristic processing ( $\beta=.06$ ,  $p \geq .05$ ). H3c and H3d were not supported by the results.

The only significant relationship was found between information insufficiency and information seeking and they were positively related so only H3a was supported among all information insufficiency and information seeking and processing variables.

### **Informational Subjective Norms**

The fourth research question asked about the relationship between informational subjective norms and information insufficiency, information seeking, information avoidance, information systematic processing, and information heuristic processing. Informational subjective norms referred to the normative pressure individuals perceived from significant others, as well as from members of the society. Specifically, H4a hypothesized a positive relationship between informational subjective norms and information insufficiency, implying that the more pressure students felt from others, the more likely they would perceive a larger gap between the knowledge they already had and the knowledge they needed to confidently deal with the risks of STD/HIV. H4b predicted that there would be a positive relationship between informational subjective norms and active information seeking. H4c suggested a negative relationship between informational subjective norms and information avoidance. H4b and H4c proposed that the more pressure the students felt from others, the more likely they would be actively seeking information and the less likely they would be intentionally avoiding information about STD/HIV. H4d indicated that informational subjective norms would be positively related to systematic processing, and H4e suggested that informational subjective norms would be negatively related to heuristic processing. This set of hypotheses predicted that the more pressure students felt from others, the more likely they would process information of STD/HIV systematically and less likely that they would use experiences

and heuristics to make judgments.

This study examined two types of informational subjective norms: descriptive norms, which meant the behaviors of other people in the society; and injunctive norms, which referred to the expectation of whether students should or should not perform certain behaviors from people students thought were important when it came to STD/HIV risks. No significant differences were found between descriptive norms and injunctive norms in the currently study. Thus, the variable treated as a summated scale that encompassed both types of the norms in the analysis.

According to table 3, there was no significant relationship between informational subjective norms ( $\beta=.07$ , *ns*) and information insufficiency; informational subjective norms and information seeking ( $\beta=.16$ ,  $p\leq.001$ ) were positively related; and no significant relationship was found between informational subjective norms and information avoidance ( $\beta=-.04$ , *ns*). Interestingly, systematic processing ( $\beta=.17$ ,  $p\leq.001$ ) had a significant positive relationship with informational subjective norms whereas heuristic processing ( $\beta=-.04$ , *ns*) was not significantly related to informational subjective norms. Therefore, H4b and H4d were supported by the results and H4a, H4c, and H4e were not supported. The more pressure the students felt from others, the more likely they would seek information about STD and HIV and process the information systematically.



### **Perceived Information Gathering Capacity**

The sixth research question asked about the relationships between perceived information gathering capacity which referred to the perceived capacity an individual had to get the information he or she wanted and information seeking and processing behaviors. Specifically, H6a predicted that perceived information gathering capacity would be positively related to active information seeking, meaning that the more students perceived that they had gathering capacity for information related to STD and HIV, the more they would seek for information. H6b suggested that perceived information gathering capacity would be positively correlated with systematic processing of STD and HIV information, implying that the more students perceived that they had gathering capacity for information related to STD and HIV, the more they would process STD and HIV information systematically. H6c hypothesized that perceived information gathering capacity would be negatively related to heuristic information processing, suggesting that the more students perceived that they had the capacity to gather information about STD and HIV, the less students would use heuristic cues to process these information.

According to table 3, the results showed that gathering capacity was significantly related to information seeking, systematic processing, and heuristic processing. Capacity was positively related to both information seeking ( $\beta=.38, p \leq .001$ ) and systematic processing ( $\beta=.30, p \leq .001$ ). Therefore, the more students thought they were capable of gathering information of STD and HIV, the more they would seek

information about the topic and the more they would process STD and HIV information systematically. At the same time, information gathering capacity was negatively related to heuristic processing ( $\beta = -.16$ ,  $p \leq .01$ ). The more students perceived that they were capable of gathering information of STD and HIV, the less they would process STD and HIV information heuristically. Therefore, H6a, H6b, and H6c were all supported by the results.

Besides answering research question 6, the table also showed that perceived informational gathering capacity was negatively related to both information insufficiency ( $\beta = -.26$ ,  $p \leq .001$ ) and information avoidance ( $\beta = -.15$ ,  $p \leq .05$ ). The students thought that they were capable of gathering information about STD and HIV, the less they would perceive themselves as lacking of information and the less they would avoid information.

**Table 3: Relationships Among Distal Variables, Information Insufficiency, Information Seeking, Information Avoidance, Systematic Processing, and Heuristic Processing**

	Sufficiency Threshold (Information Insufficiency)	Info Seeking	Info Avoidance	Systemati c Processin g	Heuristic Processing
	Beta (sig.)	Beta (sig.)	Beta (sig.)	Beta (sig.)	Beta (sig.)
Current Knowledge	<b>-.38c</b>	N/A	N/A	N/A	N/A
$\Delta R^2$	.12				
Age	-.11	.08	.04	.11	.02
Grade	.06	-.08	-.08	-.11	-.05
Year spent in the U.S.	.02	.02	.03	-.02	.04
$\Delta R^2$	.02	.01	.00	.01	.00
Risk Judgment	.08	.08	.03	.02	.00
$\Delta R^2$	.00	.02	.00	.00	.00
Uncertaint y Worry	-.01 .04	-.04 <b>.14b</b>	.11 <b>-.19c</b>	-.01 <b>-.17c</b>	.07 <b>-.12a</b>
$\Delta R^2$	.02	.04	.04	.05	.02
Informatio nal Subjective Norms	.07	<b>.16c</b>	-.04	<b>.17c</b>	-.04
$\Delta R^2$	.00	.07	.01	.06	.01
Perceived Informatio nal Gathering Capacity	<b>-.26c</b>	<b>.38c</b>	<b>-.15a</b>	<b>.30c</b>	<b>-.16b</b>
$\Delta R^2$	.12	.09	.02	.05	.03
Current Knowledge	N/A	.09	.02	-.04	-.03
$\Delta R^2$		.00	.00	.01	.00
Sufficiency Threshold (Information Insufficiency)	N/A	<b>.19c</b>	-.01	.11	.06
$\Delta R^2$	N/A	.03	.00	.01	.00

Multiple R	.53	.51	.26	.43	.27
Adjusted R <sup>2</sup>	.26	.24	.04	.16	.05
Overall ANOVA	F(9,359)=15.	F(10,358)=	F(10,358)=2	F(10,358)=	F(10,358)=2.74
N	33	12.49	.58	8.09	
N	368	368	368	368	368

Significance Key: a ≤ .05, b ≤ .01, c ≤ .001

### Knowledge Level and Current Knowledge

Research question five asked the relationship between the tested actual knowledge level and current knowledge that is how much knowledge individuals think they have. Age and current knowledge were positively related (beta = .14,  $p \leq .01$ ) and knowledge level was also positively related to current knowledge (beta = .11,  $p \leq .05$ ). The older students got, the more current knowledge they had and the more knowledge level students had the more current knowledge they thought they had.

**Table 4: Relationship of Age and Knowledge Level with Current Knowledge**

	Current Knowledge Beta (sig.)
Age	<b>.14b</b>
$\Delta R^2$	.02
Knowledge Level	<b>.11a</b>
$\Delta R^2$	.01
Multiple R	.18
Adjusted R <sup>2</sup>	.03
Overall ANOVA	F(2,369)=6.27
N	371

Significance Key: a ≤ .05, b ≤ .01, c ≤ .001

### **Total Variance Accounted for**

The regression models produced significant multiple-R correlation coefficients for information insufficiency ( $R = .53, p \leq .001$ ), information seeking ( $R = .51, p \leq .001$ ), information avoidance ( $R = .26, p \leq .01$ ), systematic processing ( $R = .43, p \leq .001$ ), and heuristic processing ( $R = .27, p \leq .01$ ). The RISP model (excluding self-efficacy) explained 26 percent of the variance for information insufficiency (Adjusted  $R^2 = .26, F(5,368) = 17.1, p \leq .001$ ), 24 percent of the variance for information seeking (Adjusted  $R^2 = .24, F(10,358) = 15.33, p \leq .001$ ), 4 percent of the variance for information avoidance (Adjusted  $R^2 = .04, F(10,358) = 2.58, p \leq .01$ ), 16 percent of the variance for systematic processing (Adjusted  $R^2 = .16, F(10,358) = 8.09, p \leq .001$ ), and 5 percent of the variance for heuristic processing (Adjusted  $R^2 = .05, F(10,358) = 2.74, p \leq .01$ ).

## VI. Discussion

This study applied the RISP model to examine the information seeking and processing patterns about STD and HIV related information among Chinese college students in the United States. Despite some insignificant relationships between certain variables in the RISP model, the findings overall supported the RISP model.

### **Research Question One: Risk Judgment and Time Spent in the U.S.**

Risk judgment was the product of the severity and the probability of the risks of STD and HIV. Therefore risk judgment showed how severe the students thought contracting STD and HIV would be, and how likely they would be at the risks from STD and HIV. The first research question proposed that risk judgment might be affected by the year spent in the U.S. among Chinese students because Chinese students had limited knowledge and exposure to information related to STD and HIV and they longer they stayed here the more likely they would have different levels of risk judgments.

The result showed that there was no significant influence of year spent in the U.S. on risk judgment. One possible explanation might be that the average year spent in the U.S. among these Chinese students was 2.55, which was not long enough to be exposed to information in the U.S. and have the long term effect of the influence. Another reason might be that the average age of Chinese students was 23.70, indicating that most of them already graduated from college so they were relatively

mature and hard to be influenced.

### **Research Question Two: Perceived Hazard Characteristics and Affective Response**

In this study, perceived hazard characteristics included risk judgment and self-efficacy. As the RISP model predicts, risk judgment will be positively related to negative affect, indicating that the more severe and more likely one perceives the risks of STD and HIV to be, the more negative emotions students will experience about STD and HIV. Results showed that only risk judgment was positively related to both worry and uncertainty, and beta for risk judgment and worry was .14 ( $p \leq .01$ ), and for risk judgment and uncertainty was .11 ( $p \leq .05$ ). Similar significant results between risk judgment and negative affect were also supported by past research applying the RISP model to examine information seeking and processing (Yang & Kahlor, 2013; Kahlor, 2010; Griffin et al., 2008).

Self-efficacy in the RISP model is expected to have a negative relationship to negative affect, meaning the more confident one is to deal with a risk, the less that people will experience negative feelings. In this study, self-efficacy did not have any significant relationships with either worry or uncertainty. The self-efficacy scale in this study was a combination of both response efficacy and self-efficacy and the combined mean was 5.67 with the sample size of 372 ( $SD = 1.04$ ). One possible explanation of why it had no significant relationships with the two negative affects might be the lack of variance in the self-efficacy scales. Students in the survey overall felt confident about their ability to perform safe sex and protect themselves from

STD and HIV.

### **Research Question Three: Information Insufficiency**

Information insufficiency serves as one of the most crucial predictors of information seeking and processing in the RISP model. However, in this study results showed that it was not a very efficient predictor.

Information insufficiency was expected to have a positive relationship with information seeking behaviors, meaning that the lack of confidence of the amount of information motivates people to seek for information. This relationship was the only supported one in terms of information insufficiency as the predictor of information seeking and processing behaviors (beta= .19,  $p \leq .001$ ). Although the relationship was supported it was relatively weak. The mean score for current knowledge was 61.61 (SD= 22.61, N= 372), and the mean for sufficiency threshold was 48.64 (SD= 28.65, N= 372). The score of current knowledge was high, showing the confidence students had about their knowledge of STD and HIV and the relative low score of sufficiency threshold showed that students needed a moderate level of more information about STD and HIV or none at all for a lot of them. The possible reason why students had a relatively high score in terms of current knowledge was that they had a high level of education. The high score on current knowledge might result in reduced effects of information insufficiency in regard to information seeking and processing because students are no longer motivated to think about the information deeply.

Information insufficiency was believed to be negatively related to information



avoidance, meaning that the more students felt they had enough knowledge to deal with STD and HIV related sexual health, the less they would avoid related information. The result showed that there was no significant relationship between the two. Information insufficiency was predicted to have a positive relationship with systematic processing and a negative relationship with heuristic processing, meaning that the more people feel that they don't know the more they would process information systematically, and the less they would process information heuristically. However, both relationships were found not significant. One possible explanation might be that the mean score of sufficiency threshold in the sample was relatively low—in fact, it was, surprisingly, lower than the current knowledge score, indicating that the students on average felt they already had more than enough information—so it is hard to explain its effect on students' information seeking, avoidance, systematic processing, or heuristic processing. This result, where information is more than sufficient, had not been found before in RISP studies, and so bears further research. Perhaps the positive relationship of insufficiency with “seeking” reflects very passive seeking (as one of the information seeking items measures), indicating that the students were content to simply let the risk information come to them routinely in their media diets, but otherwise not actively avoid it or do anything to process it.

#### **Research Question Four: Informational Subjective Norms**

Informational subjective norms play an important part of predicting information

seeking and processing behaviors in the RISP model. However, results showed that only two significant relationships were found.

Informational subjective norms were expected to be positively related to information seeking and information and systematic processing, indicating that the more students believed in what important people wanted them to do in terms of STD and HIV information, the more they would seek information and the more they would process information systematically. These two positive relationships were supported with information seeking ( $\beta = .16, p \leq .001$ ) and systematic processing ( $\beta = .17, p \leq .001$ ). The more pressure Chinese students in the United States felt from others in terms of STD and HIV, the more likely they would seek this type of information and process it systematically.

However, informational subjective norms were not significantly related to information insufficiency, information avoidance, or heuristic processing. Chinese students in the United States might depend more on their families or important others for information processing so these people might also suggest ways on how to deal with the information. Therefore, Chinese students wouldn't have the chance to avoid or process heuristically if they were influenced by what important others told them how to think. The new RISP model also indicated a change showing that ISN might not affect information insufficiency but instead affect seeking or processing more directly (Griffin, Dunwoody, & Yang, 2013).

**Research Question Five: Tested Knowledge Level**

In this study, a series of questions were asked to test the actual knowledge of Chinese students in the United States about their knowledge of STD and HIV.

Results showed that current knowledge was positively related to age (beta= .14,  $p \leq .01$ ) and tested knowledge level (beta= .11,  $p \leq .05$ ), indicating that the older that students were the more they perceived themselves more knowledgeable in STD and HIV information and the more actual knowledge students actually had the more they perceived themselves as more knowledgeable. As students grow older, they may have more experiences and information about STD and HIV, so they would become more confident about the knowledge they thought they had. At the same time, the more actual knowledge students already grasped, the more confident they certainly were in believing they had knowledge about STD and HIV.

**Research Question Six: Perceived Information Gathering Capacity**

Perceived information gathering capacity is hypothesized to have positive relationships with information seeking and systematic processing and a negative relationship with heuristic processing. According to the results, all the predictions were supported. Besides, the study also found that perceived information gathering capacity was related to information insufficiency and information avoidance.

Perceived information gathering capacity was positively related to information seeking (beta= .38,  $p \leq .001$ ) and systematic processing (beta= .30,  $p \leq .001$ ), indicating

that the more students believed they were capable of gathering information, the more they would seek for STD and HIV related information and the more they would process these information systematically. The reason behind was that as students thought they were capable to deal with information themselves they would have the confidence to actively look for and process.

Perceived information gathering capacity was found to have negative relationships with information insufficiency (beta=  $-.26$ ,  $p \leq .001$ ), information avoidance (beta=  $-.15$ ,  $p \leq .05$ ), and heuristic processing (beta=  $-.16$ ,  $p \leq .01$ ). The results suggested that the more students thought they were capable in terms of gathering STD and HIV related health information, the less they would think they were insufficient in that information, the less they would avoid these information, and the less they would process these information heuristically. These results were in line with previous RISP research findings.

## VII. Conclusion

### Summary of Key Findings

First of all, informational insufficiency was significantly related to information seeking as the RISP model proposes but not significantly correlated to other RISP model variables such as information avoidance, systematic processing, and heuristic processing.

Second, informational subjective norms was significantly associated with information seeking and systematic processing as the model predicts but not significant with informational insufficiency, information avoidance, and heuristic processing.

Third, no significant relationship was found between affect (uncertainty and worry) and informational insufficiency. Risk judgment was positively related to worry and uncertainty, whereas neither self-efficacy nor response-efficacy was related to negative affect. Surprisingly, worry was positively related to information seeking and negatively related to information avoidance, systematic and heuristic processing.

Fourth, perceived informational gathering capacity was negatively related to informational insufficiency, information avoidance, heuristic processing and positively associated with information seeking and systematic processing.

Fifth, current knowledge was negatively related to sufficiency threshold, which meant that the more knowledge students thought they had about STD/HIV the less

they would want to know about it.

### **Theoretical Contributions**

The current study explored the RISP model in the domain of sexually transmitted diseases and HIV. Informational insufficiency was a significant predictor to information seeking about STD/HIV knowledge. Worry was mostly correlated to information seeking, avoidance, systematic and heuristic processing. Worry motivated students' seeking behaviors and discouraged avoidance and both ways of processing. Informational subjective norms were positively related to information seeking and systematic processing. The most significant finding was that perceived informational gathering capacity was related to informational insufficiency, information seeking, avoidance, systematic and heuristic processing. The better one's capacity to gather information the more they would seek and systematically process information and the less they would avoid information or process information heuristically. At the same time, capacity was also negatively related to informational insufficiency. The more one feel they are capable of gathering information, the less they feel the need to know more about STD/HIV. These findings added more details to the RISP model.

## **Practical Contributions**

Both health educators and campaign designers could learn from the study that the cognitive drives to seek more information about STD/HIV for Chinese students in the U.S. were informational insufficiency, worry, informational subjective norms, and perceived informational gathering capacity.

The results successfully predicted that worry was positively related to information seeking and it was negatively related to information avoidance and heuristic processing. Applying worry in emotional appeals will be an efficient way to promote information seeking about STD and HIV information and it will also prevent information avoidance and heuristic processing about HIV and STD.

Informational Subjective Norms was positively related to both information seeking and systematic processing so it will be a good motivator to promote information seeking and systematic processing about STD and HIV information among Chinese students studying in the U.S.

Current knowledge was negatively related to information insufficiency and information insufficiency was negatively associated with information seeking. Therefore, it will be efficient to promote information seeking about HIV and STD information through information insufficiency: letting Chinese students in the U.S. know that their current knowledge about HIV and STD is not enough.

Finally, perceived information gathering capacity was the most significant predictor for all the variables. It was positively predicting information seeking and

systematic processing and negatively predicting information insufficiency, information avoidance, and heuristic processing. Therefore, health educators could promote information seeking and systematic processing behaviors about HIV and STD through encouraging students that they have the capacity to gather information, seek information, and process information in depth.

### **Limitations and Future Research**

First of all, the current study collected a convenience sample rather than a probability one. The method of recruiting sample might lead to biased results. Online samples may be limited to students who were likely to seek online information in general while eliminating other Chinese students who might not be motivated or able to gather information. Additionally, the age range almost clustered among 22 to 24, which was not representative enough for Chinese students studying here because a lot of them were undergraduates among 18-22. The lack of age varieties might have led to inaccurate results.

Second, the study did not ask students whether the source of their knowledge about HIV/STD came from China or U.S. Without this information it is hard to reflect on sex education in China: whether it is not informing students about basic sexual risks or it is not efficient in doing so.

Further research should obtain larger and more representative probability sample in controlled conditions. The researcher had no way of knowing how focused the participants were in responding to the questionnaire or the physical environment



they were in (e.g., alone, in a crowd, quiet or noisy). These factors may have impacted the results in chaotic or unknown ways, adding random error to the measures and thus suppressing the statistical relationships among the studied variables. Additionally, examining the source of sexual risk information would be helpful to improve sex education both in China and in the U.S. toward Chinese students.

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## APPENDICES

### Appendix A: tables

#### Reliability—information seeking

**Case Processing Summary**

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.759	3

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
When it comes to the topic of the risks of sexually transmitted infections (HIV included), I'm content to let information come to me in the course of my daily life. –	9.63	5.496	.537	.733

When the topic of sexually transmitted infections (HIV included) comes up, I try to learn more about it. –	10.17	4.942	.589	.677
When this topic comes up, I'm likely to go out of my way to get more information. -	10.31	4.596	.644	.610

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15.05	10.062	3.172	3

#### Reliability—information avoidance

##### Case Processing Summary

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

##### Reliability Statistics

Cronbach's Alpha	N of Items
.737	3

##### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted



Whenever the topic of sexually transmitted infections comes up, I go out of my way to avoid learning more about it. –	5.55	6.577	.649	.556
When the topic of sexually transmitted infections (HIV included) comes up, I'm likely to tune it out. –	5.06	7.078	.495	.727
Gathering a lot of information about sexually transmitted infections (HIV included) is a waste of time. –	5.23	6.266	.552	.667

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
7.92	13.206	3.634	3

#### Reliability—systematic processing

##### Case Processing Summary

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.642	3

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
If I need to act on preventing sexually transmitted infections (HIV included), the more viewpoints I get the better. –	10.70	4.323	.441	.558
It is important for me to interpret information about sexually transmitted infections (HIV included) in a way that applies directly to my life. –	10.70	4.313	.407	.607
After thinking about information on this topic, I have a broader understanding of sexually transmitted infections (HIV included). -	11.08	4.228	.509	.466

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
16.24	8.182	2.861	3

**Reliability—heuristic processing****Case Processing Summary**

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.485	2

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
When I encounter information about the risks of sexually transmitted infections (HIV included), I focus on only a few key points. -	3.08	2.436	.323	.
When this topic comes up, I rarely spend much time thinking about it. -	4.82	1.923	.323	.

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
7.89	5.757	2.399	2

**Reliability—perceived information gathering capacity****Case Processing Summary**

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.791	6

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I would know where to go for information I could rely on from Chinese channels. –	23.40	28.117	.434	.790
I would know where to go for information I could rely on from English language channels. –	23.27	25.875	.569	.755
I would know what questions to ask the experts. -	23.24	27.219	.647	.735
I would know how to separate fact from fiction. –	22.92	28.897	.537	.761

I could readily take the time to gather any additional information I might need. -	23.40	29.573	.483	.773
I am able to get and make sense of information on this topic. -	22.49	28.450	.639	.741

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
27.75	38.734	6.224	6

#### Reliability--

#### Case Processing Summary

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.504	2

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
In my life, it would be easy for me to perform safe sex. -	5.63	1.510	.337	.

I believe that practicing safe sex would protect me from sexually transmitted infections (HIV included). -	5.70	1.726	.337	.
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#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
11.33	4.325	2.080	2

#### Reliability—informational subjective norms

#### Case Processing Summary

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.525	3

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted

Most of American students in the U.S. already know about sexually transmitted infections (HIV included). –	8.55	5.240	.417	.303
Most of other Chinese students in the U.S. already know about sexually transmitted infections (HIV included). –	9.08	4.867	.462	.218
People who are important to me think that I should stay informed about sexually transmitted infections (HIV included). -	7.99	5.854	.173	.703

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
12.81	9.672	3.110	3

#### Reliability—channel belief (Chinese)

##### Case Processing Summary

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.676	2

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
In making my decision about safe sex, I would rely on information from Chinese Internet. -	4.19	1.853	.510	.
In making my decision about safe sex, I would rely on information from Chinese media (TV, newspapers, etc.). -	4.69	2.004	.510	.

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
8.88	5.824	2.413	2

#### Reliability—channel belief (English)

##### Case Processing Summary

		N	%
Cases	Valid	372	100.0
	Excluded <sup>a</sup>	0	.0
	Total	372	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.733	2

#### Item-Total Statistics



	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
In making my decision about safe sex, I would rely on information from English language Internet. -	4.27	1.840	.580	.
In making my decision about safe sex, I would rely on information from English language media (TV, newspapers, etc.). -	4.66	1.605	.580	.

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
8.93	5.437	2.332	2

## Appendix B—Survey Questionnaire

### **Risk Information Seeking and Processing about Sexually Transmitted Infections (HIV included) Among Chinese Students in the U.S.**

**PRINCIPAL INVESTIGATOR:** Jieyu Ding, E-mail: jieyu.ding@marquette.edu  
Department of Communication Studies

You have been invited to participate in this research study. Before you agree to participate, it is important that you read and understand the following information. Participation is completely voluntary.

**PURPOSE OF THE STUDY:** The purpose of this research study is to find out risk information seeking and processing behaviors about sexually transmitted infections, which include HIV/AIDS among *Chinese students in the U.S.*

**PROCEDURES:** If you are a Chinese undergraduate or graduate student, you will be asked a series of questions regarding some possible risks to your health. **For purpose of this study, a Chinese student is defined as someone who was born in China and is currently enrolled in an undergraduate or graduate program of study in the United States.**

**DURATION:** Your participation will consist of one survey completed online taking approximately 15 minutes.

**BENEFITS:** **Ten Amazon gift cards each worth \$20 will be distributed randomly to selected respondents.** After you finish the survey, you will be asked to provide an email address to receive the gift card. If you agree to participate in the reward you will be directed to another link to enter your email address. The email address you provide will be completely separated from your responses and will only be used to send the gift cards.

**RISKS:** The risks associated with participation in this study include being asked some questions that may make you feel uncomfortable.

**CONFIDENTIALITY:** All information you reveal in this study will be kept confidential. When the results of the study are published, you will not be identified by name. Results will be analyzed and published only as aggregate data. E-mail addresses of chosen respondents will be tracked only for the purpose of sending rewards and will be separated from actual responses.

**VOLUNTARY NATURE OF PARTICIPATION:** Participating in this study is completely voluntary.

**CONTACT INFORMATION:** If you have any further questions about the study, please contact the principal investigator Jieyu Ding by phone at (414)-368-7713, or by e-mail at [jieyu.ding@marquette.edu](mailto:jieyu.ding@marquette.edu). If you have any further questions about your rights as a research participant, please contact Marquette University's Office of Research Compliance at (414)-288-7570 or [orc@marquette.edu](mailto:orc@marquette.edu).

By clicking on the "I Agree" button below, you indicate that **you have read this consent form, are a Chinese undergraduate or graduate in a U.S university, aging between 18-29 years old, and voluntarily consent to participate.** Your answers are very important. The results will be used for a thesis and for papers and publications.

**If you decline to participate, or do not qualify as a Chinese undergraduate or graduate student studying in the United States, and do not age between 18-29 years old please exit the survey.**

#### **Agree**

Screening question:

Are you a **native Chinese student studying in a U.S university** who is between the **ages of 18-29?**

[IF NO, skip to the end of the survey]

It is important that you answer the questions that follow based simply on what you currently know about the risks of sexually transmitted infections, which include HIV. Please do not gather any other information (for example, from an Internet search) while you are completing this questionnaire. Thank you.

1. We'd like to know how important this matter is to you. Please use a scale from zero to 10, where zero means no importance at all and 10 means that it is as important as anything could ever be to you. How important to you is the possibility of being infected with sexually transmitted infections (HIV included)?

**Please estimate (Fill-in): \_\_\_\_\_**

**Please indicate how much you agree or disagree with the following statements regarding your knowledge about the possible risks to you from sexually transmitted infections (HIV included).**

- 2a. I need more information to judge the risks of sexually transmitted infections (HIV included) I might be exposed to.



Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

6. When the topic of sexually transmitted infections (HIV included) comes up, I'm likely to tune it out.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

7. If I were to get more information about sexually transmitted infections (HIV included), I would become more certain about the risks to me.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

8. When this topic comes up, I rarely spend much time thinking about it.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

9. When it comes to the topic of the risks of sexually transmitted infections (HIV included), I'm content to let information come to me in the course of my daily life.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

10. When I encounter information about the risks of sexually transmitted infections (HIV included), I focus on only a few key points.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

11. When this topic comes up, I'm likely to go out of my way to get more information.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

12. It is important for me to interpret information about sexually transmitted infections (HIV included) in a way that applies directly to my life.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

13. Gathering a lot of information about sexually transmitted infections (HIV included) is a waste of time.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

14. After thinking about information on this topic, I have a broader understanding of sexually transmitted infections (HIV included).

Strongly disagree	Neither disagree nor agree			Strongly agree
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1            2            3            4            5            6            7

15. If I need to act on preventing sexually transmitted infections (HIV included), the more viewpoints I get the better.

Strongly disagree            Neither disagree nor agree            Strongly agree  
1            2            3            4            5            6            7

16. Whenever the topic of sexually transmitted infections comes up, I go out of my way to avoid learning more about it.

Strongly disagree            Neither disagree nor agree            Strongly agree  
1            2            3            4            5            6            7

The following statements concern what you believe to be others' opinions about sexually transmitted infections (HIV included). *Please indicate whether you strongly disagree, disagree, slightly disagree, neither disagree nor agree, slightly agree, agree or strongly agree with them.*

17. People who are important to me think that I should stay informed about sexually transmitted infections (HIV included).

Strongly disagree            Neither disagree nor agree            Strongly agree  
1            2            3            4            5            6            7

18. Most of other Chinese students in the U.S. already know about sexually transmitted infections (HIV included).

Strongly disagree            Neither disagree nor agree            Strongly agree  
1            2            3            4            5            6            7

19. Most of American students in the U.S. already know about sexually transmitted infections (HIV included).

Strongly disagree            Neither disagree nor agree            Strongly agree  
1            2            3            4            5            6            7

20. If you were to encounter sexually transmitted infections (HIV included), how serious do you think it would be?

Please use a scale from zero to 100, where zero means it is not at all serious, and 100 means it is as serious as it could possibly be.

**Please estimate (Fill-in):** \_\_\_\_\_

21. In your estimation, how likely is it that you would be infected with sexually transmitted infections (HIV included)?

Please use a scale from zero to 100, where zero means that you would have absolutely no chance whatsoever of being affected, and 100 means that you are certain to.

**Please estimate (Fill-in):** \_\_\_\_\_

The following are statements that people have made about their own ability to get and make sense of information from the mass media and the Internet regarding sexually transmitted infections (HIV included). To what extent do you agree with these statements?

If I wanted to get information about sexually transmitted infections (HIV included)...

22. I would know where to go for information I could rely on from **Chinese** channels.

Strongly disagree	Neither disagree nor agree	Strongly agree
1            2	3            4            5	6            7

23. I would know where to go for information I could rely on from **English language** channels.

Strongly disagree	Neither disagree nor agree	Strongly agree
1            2	3            4            5	6            7

24. I would know how to separate fact from fiction.

Strongly disagree	Neither disagree nor agree	Strongly agree
1            2	3            4            5	6            7

25. I am able to get and make sense of information on this topic.

Strongly disagree	Neither disagree nor agree	Strongly agree
1            2	3            4            5	6            7

26. I would know what questions to ask the experts.

Strongly disagree	Neither disagree nor agree	Strongly agree
1            2	3            4            5	6            7

27. I could readily take the time to gather any additional information I might need.

Strongly disagree	Neither disagree nor agree	Strongly agree
1            2	3            4            5	6            7

### **Affect**

Now we'd like to know your feelings about the risks of sexual activities. Please use a scale from zero to 10, where zero means you have "none of this feeling" and 10 means you have "a lot of this feeling." When you think about the possible consequences posed to you by being infected with sexually transmitted infections (HIV included)...

28. How much worry do you have?

None 0    1    2    3    4    5    6    7    8    9    10 A Lot

29. How much uncertainty do you have?

None 0 1 2 3 4 5 6 7 8 9 10 A Lot

The following statements are about your ability to prevent yourself from being infected with sexually transmitted infections (HIV included).

30. I believe that practicing safe sex would protect me from sexually transmitted infections (HIV included).

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

31. In my life, it would be easy for me to perform safe sex.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

The following statements ask about the strength of your beliefs about safe sex from different **Chinese** and **English language** channels.

32. In making my decision about safe sex, I would rely on information from **Chinese Internet**.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

33. In making my decision about safe sex, I would rely on information from **English language Internet**.

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

34. In making my decision about safe sex, I would rely on information from **Chinese media** (TV, newspapers, etc.).

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

35. In making my decision about safe sex, I would rely on information from **English language media** (TV, newspapers, etc.).

Strongly disagree	Neither disagree nor agree			Strongly agree		
1	2	3	4	5	6	7

**Please answer the following questions about sexually transmitted infections (HIV included) to the best of your knowledge.**

36. Unprotected sexual activities can increase the risks of getting infected with sexually transmitted infections (HIV included).



True/False/DK

37. Sexually transmitted infections do not affect men.

True/False/DK

38. Sexually transmitted infections can increase the risks getting infected with HIV/AIDS.

True/False/DK

39. Sexually transmitted infections can increase the risks of infertility.

True/False/DK

40. Sexually transmitted infections only affect women.

True/False/DK

41. What is your age?

**Please type in actual numbers** \_\_\_\_\_

42. Which year of college are you in?

Freshman

Sophomore

Junior

Senior

Graduate (Master)

Graduate (Doctoral)

43. How many years have you been in the United States?

0-1 year

1-2 years

3-4 years

4 years and above