

MESSAGE DESIGN FOR CORRECTING MISINFORMATION ON HIV/AIDS FOR
CHINESE INTERNATIONAL STUDENTS IN THE US

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ABSTRACT

Ran Li:

Message design for correcting misinformation on HIV/AIDS for Chinese International Students in the US

(Under the direction of Joan R. Cates, Ph.D., MPH.)

This study assessed the knowledge and attitudes of Chinese college students studying in the United States toward HIV/AIDS, people living with HIV/AIDS, and sources of HIV-related information. The study also explored a culturally-based HIV intervention (poster) targeted at Chinese students in the US. In-depth telephone interviews were conducted with five key informants to generate ideas on message and poster design. An online survey was conducted among 95 students from a local university to examine HIV/AIDS-related knowledge and attitudes, and to determine the different effects of gain- and loss-framed message designs in different message formats (text based only, text and numerically based, and text and graphically based). Chi-square, T-test, and Pearson correlation were used to investigate the association among gender, age, relationship, knowledge on HIV/AIDS, and attitudes toward people living with HIV/AIDS. The Internet was the main source for Chinese college students in the United States searching for general health-related information. Chinese college students in the U.S. did not have comprehensive knowledge about HIV/AIDS. Gain-framed message was preferred in all message formats (text only based, text and numerically based, text and graphically based).

This thesis is dedicated to my parents, Li Wenyi and Xu Suyun for their unconditional support. It is also dedicated to my boyfriend, Wu Xinyuan for always holding my hand and supporting me both spiritually and physically. Thank you for all of your support along the way.

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TABLE OF CONTENTS

LIST OF TABLES.....	ix
CHAPTER 1: INTRODUCTION AND BACKGROUND.....	1
1.1 Susceptibility to HIV/AIDS.....	2
1.2 HIV/AIDS-Related Knowledge.....	3
CHAPTER 2: LITERATURE REVIEW.....	6
2.1 HIV/AIDS-Related Stigma.....	6
2.2. Misinformation Concerning HIV Transmission.....	8
2.3 KAP Studies on Chinese College Students.....	10
2.4 HIV/AIDS Intervention.....	11
2.5 Sources of HIV/AIDS Information.....	12
2.6 Theoretical Perspectives.....	13
2.6.1 Gain-Framing and Loss-Framing Message Design.....	13
2.6.2 Application of Gain-Framing and Loss-Framing Message Design.....	13
CHAPTER 3: HYPOTHESES.....	17
CHAPTER 4: METHODS.....	18
4.1 Key Informant Interview.....	18

4.2 Online Survey.....	21
CHAPTER 5: RESULTS.....	27
5.1 Key Informant Interview.....	27
5.1.1 Demographic Characteristics.....	27
5.1.2 Interview Questions.....	27
Q1. Are college students more susceptible to HIV/AIDS compared to other groups?.....	27
Q2. Why do college students clearly know how HIV is transmitted but do not know how HIV is not transmitted, though they are well-educated?.....	29
Q3. For Chinese college students living in the U.S., what do they (you) think current HIV-related education activities or campaigns targeted at Chinese students in China?.....	30
Q4. What are the misconceptions among Chinese college students in China?.....	31
Q5. Do Chinese college students are able to identify the misinformation on the Internet?.....	31
Q6. Do Chinese college students search for health-related information, especially HIV/AIDS-related information?.....	32
Q7. What's the main source for searching health-related information?.....	32
5.1.3 Poster Design.....	33
5.2 Online Survey.....	34
5.2.1 Demographic Characteristics.....	34
5.2.2 Research Hypothesis 1.....	34
5.2.3 Research Hypothesis 2.....	36

5.2.4 Research Hypothesis 3	39
5.2.5 Research Hypothesis 4	40
5.2.6 Research Hypothesis 5	41
5.2.7 Visual Aids Design	42
CHAPTER 6: DISCUSSION	44
CHAPTER 7: LIMITATIONS	48
7.1 Generalizability	48
7.2 Survey Design	49
7.3 Time Limitation	49
APPENDIX 1: EMAIL RECRUITMENT FOR KEY INFORMANTS	68
APPENDIX 2: TELEPHONE INTERVIEW GUIDE AND QUESTIONS	69
APPENDIX 3: EMAIL RECRUITMENT FOR SURVEY PARTICIPANTS	71
POSTER RECRUITMENT FOR SURVEY PARTICIPANTS	72
APPENDIX 4: QUESTIONNAIRE	73
APPENDIX 5: POSTER IN TEXT	83
POSTER IN TEXT AND NUMBER	84
POSTER IN TEXT AND GRAPH	85
REFERENCES	86

LIST OF TABLES

Table

1. Demographic Characteristics of Survey Participants.....	51
2. Health Information Searching.....	52
3. Frequency of Health Information Searching on the Internet by Gender.....	53
4. Searching Health Information by Topic.....	53
5. Provider of Health-Related Websites.....	54
6. Criteria for Health Websites.....	54
7. Identifying HIV Prevention among Participants Who Heard of HIV/AIDS.....	55
8. Identifying HIV prevention among Participants Who Heard of HIV/AIDS by Relationship.....	56
9. Identifying HIV Prevention among Participants Who Heard of HIV/AIDS by Gender.....	56
10. Identifying HIV Prevention among Participants Who Heard of HIV/AIDS by Age Group.....	57
11. Identifying Misconceptions about HIV/AIDS.....	58
12. Identifying Misconceptions about HIV/AIDS by Gender.....	59
13. Identifying Misconceptions about HIV/AIDS by Relationship.....	60
14. Identifying Misconceptions about HIV/AIDS by Age Group.....	61
15. Knowledge of Mother-to-Child HIV Transmission.....	62
16. Knowledge of Mother-to-Child HIV Transmission by Age Group.....	63

17. Knowledge of Mother-to-Child HIV Transmission by Gender.....	63
18. Knowledge of Mother-to-Child HIV Transmission by Relationship.....	64
19. Comprehensive Knowledge of HIV/AIDS Transmission.....	65
20. Attitudes toward People Living with HIV/AIDS.....	66
21. Comparison among Gain- and Loss-Framed Message Design in Different Message Formats.....	67

CHAPTER 1: INTRODUCTION AND BACKGROUND

Approximately 304,040 Chinese students were enrolled in various higher education institutions in the United States during the 2014-2015 academic year. Chinese students accounted for 31.2 percent of all international students in the U.S., an increase of 10.8 percent compared to the 274,439 Chinese students enrolled during 2013-2014. Currently, China is the top source country of foreign students studying in the U.S. (“Open Doors,” 2015). As such a significant population studying in the U.S., Chinese students deserve to be the target population for research and, if necessary, health interventions. Moreover, with cultural and linguistic barriers, Chinese students in the U.S. may become susceptible to adopting risky health behaviors seen in the general U.S. population (Tung, Lu, & Cook, 2013). As they learn mainstream U.S. culture, Chinese students with a misunderstanding of a deeply entrenched stigma toward HIV/AIDS may be at additional risk of acting with unsafe sexual behaviors (Samson & Spector, 2012). One study found that migrants had lower level of knowledge on HIV/AIDS compared to native people (Tulloch et al., 2012). In the study, African-born HIV patients had less knowledge compared to the Canada-born HIV patients. This indicates that Chinese-born college students in the U.S. may have a higher risk of carrying out unsafe behaviors that can lead to HIV/AIDS. With the increasing number of Chinese students studying in the United States, health researchers need to further study this group’s knowledge toward HIV/AIDS, attitudes toward HIV/AIDS, and feelings toward people living with HIV/AIDS (PLWHA), and also explore culturally-based

HIV interventions. However, little research has been done about this particular sub-set of ethnic minority students.

The main purpose of this study is to add to the growing understanding of knowledge, attitudes, and practice (KAP) toward HIV/AIDS among Chinese college students in the U.S. by examining (a) their knowledge about HIV and AIDS, and HIV transmission, (b) the attitudes toward HIV and people living with HIV/AIDS, and (c) the sources they rely on when searching for health-related information. This study also aims to design a culturally-based poster targeting Chinese students in the U.S., examining the effects of gain- and loss-framed message designs in different message formats (text based only, text and numerically based, text and graphically based). A sound and culturally-based HIV/AIDS poster design must be based on the current situation of HIV/AIDS among college students in China. What is that current situation?

1.1 Susceptibility to HIV/AIDS

Human immunodeficiency virus infection or acquired immune deficiency syndrome (HIV/AIDS) is a disease of the human immune system (Sepkowitz, 2001). This disease is a worldwide problem of considerable magnitude, including in China where cases of the disease are increasing. According to the most recent data from the World Health Organization (Domínguez, 2014), 36.9 million people worldwide were living with HIV by the end of 2014. In that same year, 2.1 million people across the world were newly infected with HIV and 1.2 million people died of AIDS-related causes (World Health Organization [WHO], 2015). Similarly, China is witnessing a dramatic increase in HIV cases. By the end of 2014, there were 501,000 reported cases of people living with HIV/AIDS (296,000 with HIV and 205,000 with AIDS) and 159,000 deaths had been reported (2015 China AIDS response progress report, 2015). Despite being a low priority in China's medical field, the number of people living with HIV and AIDS patients

has recently begun increasing rapidly (“2015 China AIDS response progress report,” 2015). According to an official report published recently, in 2014, mainland China (excluding Hong Kong, Macao and Taiwan) saw 45,145 new cases of HIV, an increase of 6.67 percent compared to the 42,286 new cases diagnosed in 2013; the number of mortality cases also increased by 5.09 percent to 12,030 in 2014, compared to 11,437 in 2013 (“National Notifiable Infectious Diseases Situation FY2014,” 2015). In September 2015 alone, mainland China saw 4,967 new HIV cases, compared to the 585,322 new cases of all diseases. Of the 1,433 people that died that month from disease, 1,172 of those people died from HIV (“September 2015 National Notifiable Infectious Diseases Report,” 2015).

Young people and adolescents are at a higher risk of being infected by HIV than people in other age groups (Luo, Xiao, Deng & Ou, 2008; Wang, Gu & Fu, 2010). Worldwide, 2,100 teenagers are infected with HIV every day (UNAIDS, 2014). In 2012, young people with HIV/AIDS accounted for 40 percent of all new adult HIV infections (UNAIDS, 2012). Similarly, teenagers and young adults in China have a higher susceptibility of HIV/AIDS of being infected with HIV/AIDS. Young adults ages 20-29 accounted for 34.2 percent of the total HIV carriers and 15.6 percent of people living with HIV/AIDS in China (Joint United Nations Program on HIV/AIDS, 2008; Liu, Luo, Cai, & Lin, 2009). College students are a vulnerable group at risk of getting AIDS (He et al., 2008; Liu, 2006; Wang, 2002).

1.2 HIV/AIDS-related Knowledge

Young adults generally have a poor understanding of HIV/AIDS (Huang et al., 2005; Kaufman, Kleinman, & Saich, 2006; Li, Cottrell, Wagner, & Ban, 2004; Lonn et al., 2007). Studies on Chinese college students in China indicated that less than 50 percent of respondents correctly answered questions concerning HIV transmission, especially the function of condoms

(Huang et al., 2005; Li, Cottrell, Wagner, & Ban, 2004). Other studies have demonstrated that college students hold common misconceptions regarding HIV/AIDS. According to a 2005 study, nearly 90 percent of Chinese college students believed that HIV/AIDS could be transmitted through casual contact, such as shaking hands, touching, and kissing on the cheek. More than one-third believed that mosquito bites could transmit HIV/AIDS, and half believed that HIV/AIDS could be transmitted through sharing public equipment including public toilets and swimming pools (Huang et al., 2005; Li, Cottrell, Wagner, & Ban, 2004; Lonn et al., 2007). However, more recent studies indicate that the level of HIV-related basic knowledge amongst college students has increased. Data from sentinel surveillance systems reported that from 2012 reported that 88.2 percent of young students (in-school youth) had basic knowledge about HIV/AIDS (2012 China AIDS Response Progress Report, 2012). Results from the 2012 “China’s Action Plan for Reducing and Preventing the Spread of HIV/AIDS” showed that 85.1 percent of young women and men aged 15-24 in school correctly identify both HIV prevention and misconceptions (2012 China AIDS Response Progress Report, 2012). Although there was an increasing trend on knowing the basic knowledge on HIV/AIDS, nevertheless, surveys on Chinese college students still suggested that college students have knowledge deficit on HIV/AIDS (Chen et al., 2012; Sun, Liu, Shi, Wang, Wang, & Chang, 2013; Tung, Lu, Cook, 2013). The majority of Chinese college students knew clearly how HIV was transmitted but did not know how HIV was not transmitted (Song et al., 2013; Wang, Tang, & Jiang, 2008; Yang et al., 2010).

Research shows that Chinese college students have a lack of knowledge about HIV/AIDS. That means this group has a higher risk of becoming infected with the diseases. This research study seeks to answer whether Chinese college students that come to study in the United

States also have a lack of knowledge about HIV/AIDS, and how American institutions can educate this demographic.

CHAPTER 2: LITERATURE REVIEW

Bernhard Schwartlaender, a WHO Representative in China, stated in a Deutsche Welle's interview that despite the remarkable progress made by the country in some public health areas, China still faces many challenges concerning preventing HIV infections and ensuring equal access to treatment for HIV carriers. In addition, he also argued that stigma is one of the biggest enemies to the elimination of HIV in China (Domínguez, 2014).

2.1 HIV/AIDS-Related Stigma

Although people are now more accepting toward others living with HIV/AIDS (PLWHA) than in the early years of the outbreak, several studies indicate that the discrimination and stigma toward PLWHA still exist. Herek and Capitanio (1999) found that people still feel anxious being around PLWHA. They also reported that people tend to associate HIV with certain stigmatized groups, namely, gay people, sex workers, and intravenous drug users. In 2007, Smith suggested that “horrifying” is the most frequently used description of HIV/AIDS. In addition, Parker and Aggleton (2003) found that the general public believes people living with HIV/AIDS have dysfunctional personalities.

In China, although people tend to realize that AIDS is a chronic disease, many still link AIDS to sexual deviance and moral corruption (Zhou, 2007). The general public tends to make moral judgments about how carriers were infected with HIV/AIDS. Several scholars found that the majority of people in China are likely to attribute specific behaviors to PLWHA, such as commercial sex (Chan et al., 2007; Lau & Tsui, 2005; Zhuang & Bresnahan, 2012), homosexuality (Yang & Kleinman, 2008), and injecting drugs (Chan et al., 2007). Because these

behaviors are not accepted according to traditional values in China, people living with HIV/AIDS often experience and internalize the stigma of living with HIV/AIDS and hold a negative attitude toward themselves (Yang & Kleinman, 2008).

Additionally, several results from previous studies illustrated that people infected by HIV/AIDS are discriminated against by different groups of people and in different settings in China. For example, PLWHA face discrimination not only from the general public (Lee, Wu, Rotheram-Borus, Detels, Guan, & Li, 2005) and from their family members (Root, 2010), but also from health care workers (Anderson, Zheng, Wu, Li, & Liu, 2003). For example, in Yunnan province, a survey of health professionals revealed that around 80 percent preferred to not treat HIV-positive patients (Hesketh, Duo, Li, & Tomkins, 2005). Besides the direct pressure of stigma, PLWHA also bear indirect discrimination. For instance, uninfected relatives of people living with HIV/AIDS are stigmatized by Chinese society through being barred from schools, suffering job market discrimination, and being unable to find romantic partners (Cao et al., 2006).

Because of the stress, internalized stigma, and direct and indirect discrimination toward carriers with HIV/AIDS, PLWHA in China try to conceal their disease from others, including from family members (Cao et al., 2006). They feel reluctant to seek both emotional and social support and also information about the disease. Furthermore, carriers of HIV are at a high risk for emotional and mental health disorders (Freeman, Nkomo, Kafaar, & Kelly, 2007; Green, 1995; Sowell & Misener, 1997), often because of their unwillingness to seek social support and medical assistance (Parker & Aggleton, 2003).

Due to the pervasiveness of the stigma and stereotypes directed at people living with HIV/AIDS, these people suffer from high stress, strong discrimination, and low quality of life

(Su et al., 2013). People with this condition fear disclosing their status to their community, health providers, and family members (Cao et al., 2006). People living with HIV/AIDS are also afraid of being discovered and so avoid going to the local medical clinic for help (Derlega, Winstead, Greene, Serovich, & Elwood, 2002). As a result, the stigma toward PLWHA potentially discourages carriers with HIV from seeking social support and medical assistance (Parker & Aggleton, 2003).

To encourage PLWHA to seek help, and prevent them from being isolated by society, misconceptions concerning HIV transmission should be addressed. Many in china mistakenly associate HIV/AIDS with sexual deviance and moral corruption, and will erroneously believe that the following can transmit the diseases: casual contact (social kissing, hugging, shaking hands), and sharing food, eating utensils, touching the same toilet seat, and drinking from the same water fountain. Correcting this misinformation could lead the general public to become more accepting of PLWHA.

2.2 Misinformation Concerning HIV Transmission

Misinformation is defined in relation to scientific fact. Because science evolves, currently accepted scientific fact may not be considered accurate in a few years (Tan, Lee, & Chae, 2015). Conversely, what qualifies as misinformation evolves gradually over time. Because of this limitation, this study only focused on information related to HIV/AIDS that was considered to be unambiguously incorrect by the scientific community at the time this study was conducted. Therefore, this study did not address misinformation that at the time was unverified, speculative, vague, or contested.

Members of the general public who seek health-related information frequently encounter competing information composed of correct and erroneous messages about different diseases

(Tan, Lee, & Chae, 2015). As a result, the general public is exposed to a health information environment where myths or patently false information compete with correct information. This environment could adversely influence public belief, social norms, and ultimately lead to adverse consequences on public health (Culver, Gerr, & Frumkink, 1997; Eysenbach, Powell, Kuss, & Sa, 2002; Poland & Spier, 2010). Specifically, cases where available information includes correct and incorrect statements can lead to public confusion, frustration, indifference, information overload, or resistance to evidence-based health recommendations (Arora et al., 2008; Nagler, 2014).

In 1992, Price and Hsu reported that AIDS-related stigmatizing attitudes were strongly correlated with misunderstanding HIV transmission (Price & Hsu, 1992). This finding was confirmed by other subsequent studies (Brown, Macintyre, & Trujillo, 2003; Ezedinachi et al., 2002; Herek, 2002). Moreover, Kalichman and Simbayi (2004) stated that misinformation about HIV/AIDS might be the source of stigmatizing beliefs. Studies also learned that there was an inverse relationship between the level of AIDS knowledge and AIDS-related stigma: more knowledge about AIDS was associated with less HIV/AIDS-related stigma (Hamra et al., 2005).

According to the studies described in Chapter 2, many Chinese college students have a stigma toward HIV/AIDS and people living with HIV/AIDS and have limited knowledge about the diseases. Although college students understand how HIV is transmitted, they are not familiar with how the virus is not transmitted (Wang, Tang, & Jiang, 2008; Yang et al., 2010; Zhou, Zhang, & Meng, 2006). This lack of knowledge could be the cause of stigma, and also lead to a higher chance of becoming infected; therefore, HIV/AIDS knowledge misinformation needs to be studied among Chinese college students.

Viswanath stated that although various sources provide ever-increasing health information today, the information explosion poses challenges to the equal access to information and the accuracy and availability of the information (2005). Currently, misinformation frequently arises in the media environment without any intention to mislead the general public (Tan, Lee, & Chae, 2015). For instance, because of the development of the Internet and the characteristics of today's fast-paced news industry, journalists have to report initial news without waiting for the final results of events. Sometimes, initial reports are erroneous. Although subsequent corrections of earlier information are published on the same website, the corrected information is often not able to reach the same audience as the incorrect information. Even if the revised version reaches the same target audience, the incorrect information often persists (Tan, Lee, & Chae, 2015).

2.3 KAP Studies on Chinese College Students

To date, there have been few studies on Chinese students living in the United States, let alone studies around HIV/AIDS. Much of the information about this topic comes from two studies recently published. Tung, Lu, and Cook (2013) assessed knowledge and attitudes about HIV/AIDS and sources of HIV/STI information among Chinese students living in the United States. They found that almost half of participants mistakenly believed that HIV could be contracted through mosquito bites, and that 22.6 percent were unaware that condoms could prevent HIV. Moreover, they also found that male students were more likely to have a higher HIV/AIDS knowledge level than female students. In 2015, an article examining VOICES (Video Opportunities for Condom Education and Safer Sex) intervention for Chinese college students. It explored gender differences in the effectiveness of educational intervention about the use of condom (Tung, Serratt, & Lu, 2015). This study found that female participants reported

significantly higher scores of perceived benefits and condom use self-efficacy. As a result, this study showed the need to develop differentiated HIV intervention based on gender.

However, compared to the few studies on Chinese college students in the United States, there is a large body of research on HIV-related KAP among college students in mainland China. Most previous studies found that though college students were well-educated, they still had knowledge deficit on HIV/AIDS (Chen et al., 2012; Cottrell, Wagner, & Ban, 2004; Huang et al., 2005; Li, Lonn et al., 2007; Sun et al., 2013; Tung, Lu, & Cook, 2013) and, uncertainty and confusion about myths related to HIV (Chen et al., 2012; Song et al., 2013; Sun et al., 2013; Tung, Lu, & Cook, 2013; Xiong, 2007). The majority of Chinese college students knew clearly how HIV was transmitted but did not know how HIV was not transmitted (Song et al., 2013; Tang, & Jiang, 2008; Wang, 2002; Wang, Gu, & Fu, 2010; Zhou, Zhang, & Meng, 2006). To be more specific, at least half of the participants did not know that HIV could not be transmitted through kissing, hands shaking, or being bitten by mosquitos (Yang et al., 2010). Almost half of the participants did not want to interact with HIV carriers who were their friends before diagnosed with the disease. Even worse, almost one fifth of the participants believed people with HIV should be isolated (Yang et al., 2010). Therefore, there is an urgent need for Chinese college students in mainland China to have HIV/AIDS interventions to understand how HIV is transmitted and to prevent being infected by HIV (Wang, Gu, & Fu, 2010).

2.4 HIV/AIDS Intervention

In China, sex education is included in the formal curricula of secondary schools and is compulsory (Huang et al., 2005; Li, Cottrell, Wagner, & Ban, 2004; Zhang, Li, & Shah, 2007). However, although current AIDS education had proven to be effective, especially in improving HIV-related knowledge (Kincaid-Smith & Fairley, 2005; Tian et al., 2010), most college

students did not voluntarily engage with HIV-related educational activities, such as health-related campaigns and classes (Liu, Du, & Zhang, 2008; Yang et al., 2010). The shortage of appropriate sex education or activity may lead to limited knowledge on HIV/AIDS.

Given the continuing misunderstanding about HIV/AIDS and students' lack of interest shown toward current sex education opportunities, additional and proper sexual health education (including informative poster) about AIDS/HIV is needed (Liu, Du, & Zhang, 2008; Luo et al., 2008; Sun et al., 2013; Yang et al., 2010). To date, there is no study in China on how to design these educational activities to reach college students. There is a gap in the literature regarding how to design effective and informative visual aids to teach Chinese college students about HIV/AIDS and to influence the stigma towards HIV/AIDS and PLWHA.

2.5 Sources of HIV/AIDS Information

The lack of appropriate sex education or activity in schools compelled many Chinese college students to seek information from other channels instead of consulting with teachers or health professionals at school. Many Chinese college students sought sexual information from mass media or discussions with family or friends (Huang, et al., 2005; Li, Cottrell, Wagner, & Ban, 2004; Lonn et al., 2007; Tan, 2008). Mass media is the main source for providing HIV/AIDS-related information (Bertrand, O'Reilly, Denison, Anhang, & Sweat, 2006; Ross & Carson, 1988), with the Internet ranking first, followed by newspapers, magazines, and television (Tung, Lu, & Cook, 2013). School teachers, radio, friends, neighbors, family members, and health professionals were the least reported sources (Tung, Lu, & Cook, 2013).

2.6 Theoretical Perspectives

2.6.1 Gain-Framing and Loss-Framing Message Design

Gain-framed and loss-framed message design primarily focuses on the persuasiveness of the message design in health related interventions. A gain-framed appeal emphasizes the advantages of the recommended behaviors; a loss-framed appeal focuses on the disadvantages of not adopting the recommended behaviors. The persuasive effects of these two appeals derive from Prospect Theory (Cho, 2011), a model that aims to describe decision-making in psychologically realistic ways. Meyerowitz and Chaiken (1987) conducted one of the earliest empirical comparisons between the different persuasive effects of gain-framed and loss-framed appeals. Research has shown that framing health messages in terms of gains or losses influences the adoption of the desired behavior (Rothman, Martino, Bedell, Detweiler, & Salovey, 1999). Moreover, losses generally have greater motivating power than do gains (Hossain & List, 2009).

2.6.2 Application of Gain-Framing and Loss-Framing Message Design

Derived from Prospect theory (Tversky & Kahneman, 1981), loss- and gain-framed message designs are effectively applied in various domains to design persuasive health messages.

Behaviors involving risk (detection behavior) should use loss-framed messages to promote corresponding desired behaviors (Apanovitch, McCarthy, & Salovey, 2003; Meyerowitz & Chaiken, 1987; Rothman & Salovey, 1997; Rothman, Salovey, Antone, Keough, & Martin, 1993; Salovey & Wegener, 2003; Schneider et al., 2001a), while behaviors involving little or no risk (prevention behavior) should use gain-framed messages to promote (Detweiler et al., 1999; Rothman & Salovey, 1997; Rothman et al., 1993). To illustrate, examples of detection behavior are HIV testing (Apanovitch, McCarthy, & Salovey, 2003; Kalichman & Coley, 1995; Kiene et

al., 2005), breast self-examination (Kiene et al., 2005; Meyerowitz & Chaiken, 1987; Williams, Clarke, & Borland, 2001), skin cancer examinations (Block & Keller, 1995; Rothman et al., 1993), and mammography screenings (Abood, Black, & Coster, 2005; Abood, Coster, Mullis, & Black, 2002; Banks et al., 1995; Cox & Cox, 2001; Finney & Iannotti, 2002; Schneider et al., 2001a). In contrast, examples of prevention behavior are wearing a seat belt while driving (Kiene et al., 2005; Millar & Millar, 2000), physical exercise (Jones, Sinclair, & Courneya, 2003; Latimer et al., 2008; McCall & Ginis, 2004), smoking cessation (Schneider et al., 2001b; Toll et al., 2010, 2007), and wearing sunscreen (Detweiler et al., 1999; Rothman et al., 1993). However, gain-framed appeals are not more effective than loss-framed appeals in promoting certain preventive behaviors. Although using a condom during sex is known as a prevention behavior, some scholars believed that a loss frame might be more effective than a gain frame in that it is viewed as an interpersonal behavior with associated emotional risks (Kiene et al., 2005), while others believed gain-framed appeals induce greater adherence for prevention behaviors like condom use (Garcia-Retamero & Cokely, 2011). Gain-framed messages also are not useful in promoting vaccination against the flu (McCaul, Johnson, & Rothman, 2002) or the human Papillomavirus (Gerend, Shepherd, & Monday, 2008), or in promoting preventive dietary behaviors (Brug, Rutter, & van Assema, 2003; O'Keefe & Jensen, 2007).

Both gain- and loss-framed message designs were used in this study. Although the purpose of this study is to explore an effective prevention for protecting Chinese college students in the United States from being infected by HIV, there is no substantial evidence to prove that gain-framed appeals must be more persuasive than loss-framed appeals in designing preventive visual aids.

Additionally, the efficacy of visual aids mediates the effect of gain- and loss-framed messages on sexual health risk communication (Garcia-Retamero & Cokely, 2011). Visual aids are known as promising methods to effectively communicate health-related information with the target population (Edwards, Elwyn, & Mulley, 2002; Lipkus, 2007; Lipkus & Hollands, 1999; Paling, 2003; Peters, Hibbard, Slovic, & Dieckmann, 2007). They are able to not only improve the understanding of adverse consequences with medical treatments and screenings (Ancker, Senathirajah, Kukafka, & Starren, 2006; Galesic, Garcia-Retamero, & Gigerenzer, 2009; Garcia-Retamero & Galesic, 2010; Lipkus, 2007), but make professional or obscure information easier to understand (Goodyear-Smith et al., 2008). To date, few published studies investigate whether visual aids influence the efficacy of gain- and loss-framed messages in promoting prevention behaviors. Garcia-Retamero and Cokely (2011) first investigated the influence of visual aids on the effectiveness of gain and loss frame for both detection and prevention behaviors. They found that when the information on condom use was provided in written text only or in written text and numerically, participants who read the gain-framed message promoting the use of condoms (prevention behavior) reported stronger intentions to perform the recommended behavior than those who read the loss-framed message. In contrast, participants who read the loss-framed message promoting screening for STDs (detection behavior) reported stronger intentions to make an appointment with their doctor to ask about a screening than those who read the gain-framed message. However, when the risk information was provided in written text and graphically, both the gain- and loss-framed messages had an equally high influence on participants' intentions of adopting the recommended behaviors. Therefore, this study formatted health information in (1) written text, (2) written text and numerically, and (3) written text and

graphically to determine the persuasiveness of gain- and loss-framed messages in different message formats.

CHAPTER 3: HYPOTHESES

H1: The Internet is the main source for Chinese college students in the United States searching for general health-related information.

H2: Chinese college students in the United States know clearly how HIV is transmitted but do not know how HIV is not transmitted.

H3: Chinese college students in the United States have an open attitude towards HIV/AIDS and people living with HIV/AIDS.

H4: When the corrected information on HIV is provided in written text only or in written text and numerically based message format, participants prefer a gain-framed message instead of a loss-framed message.

H5: When the corrected misinformation on HIV is provided in written text and graphically based message formats, both the gain- and loss-framed messages are equally preferred by participants, and posters in text and graphical message format increase participants' self-efficacy in protecting themselves from being infected by HIV.

CHAPTER 4: METHODS

The primary goal of this research project is to study the knowledge and attitudes toward HIV/AIDS and people living with HIV/AIDS (PLWHA) among Chinese college students in the United States. This study also aims to examine the effects of gain- and loss-framed message designs in different message formats (written text only, written text and numerically based, and written and graphically based). This study used mixed research methods, both qualitative and quantitative. Since the methods involve human subject interaction, this study asked and obtained approval from the Office of Human Research Ethics Institutional Review Board at UNC.

4.1 Key Informant Interview

Key informant interviews are qualitative in-depth interviews with people who are familiar with certain topics in the community (“Key Informant Interviews,” n.d.). In-depth interviews are useful when research aims to explore new issues in-depth with a specific demographic of people and needs detailed information about their thoughts and behaviors (Boyce & Neale, 2006). Key informant interviews also allow researchers to learn the “how” and “why” of behavior. Little research has studied KAP among Chinese college students in the United States. Therefore, this qualitative, exploratory research approach was chosen to probe this group’s (a) knowledge about HIV and AIDS, and HIV transmission, (b) attitudes toward HIV/AIDS, and people living with HIV/AIDS, and (c) sources for searching for health-related information.

Key informant interviews also allow for the discussion of private information. The topic of this study is sensitive and can be personal in nature. Confidential key informant interviews – rather than group discussions – allow subjects to feel free to talk about private beliefs and practices they may otherwise feel uncomfortable sharing. The format of key informant interviews also lets the study seek feedback on the effectiveness of different message designs in the target demographic – Chinese college students. The one-on-one setting gives the researcher the ability to ask for constructive suggestions on visual materials used to educate college students about the susceptibility of HIV/AIDS and correct HIV-related misinformation found on the Internet (i.e., HIV transmission). Finally, key informant interviews were also the best way to use the researcher's available time and resources. This study conducted key informant interviews through the telephone, instead of face-to-face, in order to save time. Unlike in a face-to-face interview, telephone interviews have limited personalized interaction, but a well-structured telephone interview guide is able to address this problem ("Key Informant Interviews," n.d.).

Participants. Respondents were recruited through email (see appendix 1). The potential list of key informants was created with the help of Dr. Joan Cates from the School of Media and Journalism at the University of North Carolina at Chapel Hill and was based on informants' educational background and working experiences. A total of 10 respondents received the recruitment email, and 70 percent (n=7) of them replied to the email. Of the replied emails, 71.4 percent (n=5) of respondents were deemed eligible to participate based on willingness to participate and the predetermined criteria for inclusion: be healthy, be familiar with HIV in China, know college students in mainland China, know Chinese college students in the United States, and be willing to participate in a telephone interview. Once the eligibility was determined, the respondents were emailed to coordinate an interview time. Finally, a total of five

interviewees agreed to a determined interview time and completed a telephone interview. The responses of these five participants were considered in data analyses. Four of five key informants were female. Key informants' ages ranged from 23-35 (Median = 24). Forty percent of participants (n=2) self-identified as American, and 60 percent (n=3) self-identified as Chinese. Interviewees indicated whether they currently resided in mainland China, Hong Kong, and the United States.

Interview Protocol. All selected key informants participated in semi-structured telephone interviews regarding their knowledge on HIV in China, HIV-related KAP among college students in mainland China and students in the United States, and HIV-related common misconceptions on the Internet. The interviews were conducted over the telephone by the researcher and recorded by the *Voice Memos* application automatically installed on the iPhone. Interviews lasted about 25 minutes, though the length varied from participant to participant. An interview guide and set of questions were developed specifically for this study (see appendix 2). Besides the interview guide and questions, the informants were told about the purpose of the study and the confidentiality of their answers, and were asked to verbally declare their willingness to participate prior to the interviews. The Institutional Review Board at the University of North Carolina at Chapel Hill approved all procedures used in this research.

Interview Guide. The interview guide was created to address the following key questions.

Q1. Are college students more susceptible to HIV/AIDS compared to other groups?

Q2. Why do college students clearly know how HIV is transmitted but do not know how HIV is not transmitted, though they are well-educated?

Q3. For Chinese college students living in the U.S., what do they (you) think of current HIV-related education activities or campaigns targeted at Chinese students in China?

Q4. What are the misconceptions among Chinese college students in China?

Q5. Do Chinese college students are able to identify the misinformation on the Internet?

Q6 Do Chinese college students search for health-related information, especially HIV/AIDS-related information?

Q7 What's the main source for searching health-related information?

Questions were created using constructs from an existing interview guide (Boyce & Neale, 2006), and with guidance from Dr. Joan Cates.

Data Analysis. With the permission of respondents, telephone interviews were recorded and transcribed. The transcription and recordings were destroyed once they were no longer needed.

4.2 Online Survey

As a quantitative research approach, the online survey is useful to learn about “how many” (Boyce & Neale, 2006) people agree with a specific opinion or behave a behavior. This research project utilized an online survey to confirm or disprove the research hypotheses discussed in the Research Hypotheses section through asking HIV-related questions on knowledge, attitude, and practices. The survey was also used to identify an effective educational intervention strategy by showing respondents different visual aids (gain- and loss-framed messages in text based only, in text and numerically based, and text and graphically based message formats) and receiving the respondents' feedback.

The online survey was conducted to investigate the factors influencing the effectiveness of message framing in HIV prevention. Two variables were in one group: message frame (gain vs. loss) and message format (text based only vs. text and numerically based vs. text and graphically based). The survey had two main parts. In the first part, participants read and finished

four modules: informed consent form, a demographics module for collecting participants' basic information, an information seeking module to learn about participants' habits of searching for health-related information on the Internet, and an HIV/AIDS module for learning participants' knowledge and attitudes on HIV/AIDS and people living with HIV/AIDS. The survey was pretested among 40 Chinese college students in other universities in the United States before being conducted. Five of the 40 pretesters were interviewed to obtain feedback in detail.

Participants. Survey respondents were recruited via UNC's mass email system provided by the Office of the University Registrar. The email system can filter by demographics, so the Registrar's Office sent the email on behalf of the researcher only to students identified as eligible for the study. Students had to be healthy, at least 18 years old, officially enrolled in college, have Chinese nationality, and be willing to participate in a survey. The Registrar's Office also sent out emails encouraging sharing the survey's URL with friends and acquaintances (snowball sampling). Additionally, survey respondents were also recruited via posters placed in public places on campus (see appendix 3).

Survey design. The survey was largely created based on an HIV/AIDS standardized model — MICS3 (UNICEF, 2005) —but some of the items of the questionnaire were adapted locally or were revised for the study's purposes (see appendix 4). This survey includes five modules. The first module is the informed consent form, where participants were asked to read through the standardized consent form and then check a box to express willingness to voluntarily participate in the study. Following the consent form were three exclusion questions to select participants (be healthy, at least 18 years old, and self-identified as a Chinese international student at UNC). If an individual selected "No" for any one of the three questions, the individual

would not be eligible for the study and the survey would end immediately. The second module asked four questions about demographics: age, gender, program of study and relationship status.

The third and fourth modules sought information about the participants' behavior and habits. The third module opened with a question that asked about searching health-related information behavior (e.g., Did you ever search for health-related information? Note: information in any language including Chinese and English). If a participant answered "No" for this question, the participant would be sent on to the next module. If the participant answered "Yes" for this question, seven additional questions then queried participants about their health information searching behavior on the Internet. The fourth module focused on HIV/AIDS knowledge and beliefs. The first question asked whether participants knew HIV or AIDS (e.g., Have you ever heard of the virus HIV or an illness called AIDS?). If a respondent had never heard of the HIV virus or AIDS illness, the respondent would be sent to next module. The following twelve questions queried participants about basic knowledge on HIV/AIDS and attitudes toward PLWHA. Participants were asked two questions on specific ways to avoid HIV transmission. One is limiting the number of sexual partners, the other one is using condoms during sexual intercourse. They were also asked to identify seven common misconceptions concerning HIV transmission among Chinese college students. (mosquito bites, sharing food, breathing the same air, drinking from the same water fountain, touching toilet seat, sharing eating utensils, and using used needles). These seven misconceptions were derived from MICS3 (UNICEF, 2005), information from key informants, and previous studies (Li, Lin, & Nie, 2009; Wu, 2009; Zhao, Zhang, & Meng, 2006). Next, they were asked three questions on mother-to-child HIV transmission concerning mother-to-child pregnancy, birth, and breastfeeding. Since Chinese college students clearly knew that sexual intercourse was one of the three main ways

transmitting HIV, as a result, this transmission was not included in this survey. Finally, last four questions were meant to ascertain the respondent's personal opinion and attitude toward people with AIDS.

The fifth and final module examined respondents' reactions to educational posters. There were three pairs of posters (see appendix 5). Each pair of posters had four associated questions: Which poster do you like? Why do you like the poster? Do you trust the information on the posters above? Do the posters above make you want to find out more information? The first pair of posters consisted of one loss-framed message using only text and one gain-framed message also using only text. The second pair was composed of one loss-framed message and one gain-framed message using both text and numbers. The third pair included one loss-framed and one gain-framed message using text and graphics.

Because this was a sensitive topic, and because discussing sexual health can cause psychological embarrassment, the author preferred not to risk emotional embarrassment by exposing participants to potentially disturbing questions and poster designs. Therefore, survey respondents could stop taking the survey at any time or skip a question for any reason.

Visual aids. The information about the susceptibility of HIV/AIDS was presented in the left column of the poster (Liu, Luo, Cai & Lin, 2009; "More HIV Cases Among Chinese Students," 2013). The corrected misconceptions on HIV transmission were presented in the right column of the poster. They were "social kissing does not cause AIDS" "sharing food does not cause AIDS" and "mosquito bites do not cause AIDS." The tagline at the bottom of the poster emphasized, depending on the message, either the benefits of adopting the desired attitudes and behaviors, or the adverse consequences of failing to adopt the desired attitudes and behaviors. The poster was in color.

The first pair of posters was in text based only message format. Participants received information about the high risk of being infected by HIV among young adults ages 18-29 in China, and the increasing number of students who are HIV positive or who are living with AIDS. The second pair of posters is in text and numerical message format. Participants were informed that 34.2 percent of the total HIV carriers and 15.6 percent of people living with HIV/AIDS in China were young adults, and the number of Chinese students with HIV increased by 24.5 percent year-on-year. Similarly, the third pair of posters is in text and graphically based message format. Participants read information on the susceptibility of HIV/AIDS and saw two graphs (see appendix 5). Specifically, all respondents were exposed to two pieces of statistical information and corresponding graphs: “Young adults accounted for 34.2percent of the total HIV carriers in China” and “Young adults accounted for 15.6percent of people living with HIV/AIDS in China.”

Data analysis. Questionnaires were completed in English. Three following variables were measured before providing participants with the posters.

1. Demographics. Participants finished the demographics module in the survey, reporting their age, gender, educational level, and relationship status.
2. Information seeking behavior. Participants finished the information seeking module, indicating their information searching habits on the Internet.
3. Knowledge and attitudes on HIV/AIDS and people living with HIV/AIDS (PLWHA). On “yes,” “no,” and “don’t know,” participants evaluated their knowledge on two main HIV preventions, mother-to-child HIV transmission, misconceptions on HIV transmission, and discrimination on PLWHA.

Information searching behavior was measured by frequency and percentage. The association between the knowledge about HIV/AIDS and gender, relationship, and age were

measured by Chi-square data analysis and t-test. The correlation between the level of knowledge on HIV/AIDS and the attitudes toward PLWHA was measured by Pearson.

The preference of posters were measured by 3-point scales. After each pair of posters, on 3-point scales ranging from 1 (not at all), 2 (a little), and to 3 (a lot), participants indicated how they felt about the message framing (gain vs. loss framing) and the message formats (text only vs. text and numeric vs. text and graphics). Specifically, with the 3-point scales, participants indicated the extent to which they trusted the message on the poster, and reported to what extent they wanted to find out more information.

Incentive. A monetary incentive was offered to four survey participants. Four \$25 gift cards to Amazon were randomly distributed to participants who completely finished the survey. The gift cards were emailed to participants after the completion of the survey. Amazon gift cards were selected because no personal identifier was needed except participants' email addresses to distribute the gift card.

Confidentiality. The data was only collected for this study. Any potentially identifying information was destroyed after finishing the study.

CHAPTER 5: RESULTS

5.1 Key Informant Interview

5.1.1 Demographic Characteristics

Five key informants were recruited in telephone interviews by meeting the predetermined inclusion (be healthy, be familiar with the HIV in China, Chinese college students both in mainland China and in the United States) and by being willing to participate in the study. Two of the total five informants were HIV/AIDS-related health professionals, one of the rest three informants was a graduate student with major in sexually transmitted disease, other two informants were Chinese college students in the United States. Most of the informants (n=4, 80%) were female. Forty percent of participants (n=2) self-identified as American, and 60 percent (n=3) self-identified as Chinese. Their ages ranged from 23-35 (Median=24).

5.1.2 Interview Questions

Q1. Are college students more susceptible to HIV/AIDS compared to other groups?

All of the five informants did believe Chinese college students was the group at risk, though they did not believe Chinese college students were more vulnerable compared to other groups. Two of the five informants stated that men having sex with men was the most vulnerable group in China. One of the rest three informants believed that general young adults were more vulnerable than college students due to the lack of sexual education.

I think there are certain population such as men having sex with men where the levels are very high. But I think college students are at risk. I think most of the students leave their home for the first time, and so they may have some sexual relationship that may not have at home. Not a lot of college students in the US have like very monogamous relationships. - Informant 1

Em, well, I wouldn't say they are more vulnerable. I would think that everybody is the same. No matter how high education they got, they still have the equal chance to get HIV if they do not treat HIV seriously. - Informant 2

We are the target that is vulnerable to the HIV/AIDS. - Informant 3

It's not the most vulnerable group, but the group is definitely, em. a group with risk. - Informant 4

Young adults generally, em, are not the same as college students. College students are more educated. But young people generally would have, you know, they are less of experience, there is not a whole of sexual health education in China, that all contribute to the HIV risky behaviors. - Informant 5

Additionally, most of the informants (n=4, 80%) believed that the reason for the vulnerability of Chinese college students was that the students had open attitudes toward sex but they lacked basic knowledge on HIV/AIDS so that they could not protect themselves from being infected by HIV. One of the informants claimed that because the western culture was different from eastern culture, Chinese college students in the US tended to try risky sexual behavior.

General, there is not much knowledge about HIV and there are lots of social stigma against people with HIV. - Informant 1

I do think that is because of the American culture is more open than Chinese culture, the people here may not take sexual intercourse seriously, they may tend to try risky sexual behaviors, like having several sexual partners. - Informant 2

We are very open to have the relationship and opinion on having sex. But at the same time, we don't get enough information about this disease and how to protect ourselves. I think this maybe somehow make us a target. Because AIDS is related to sexual behavior. We have a higher rate to have those behavior but with shortage of information. That's maybe the reason we can be the target and be vulnerable to this HIV. - Informant 3

I think college students are sexually active. Although they are sexually active, but they lack sexual health knowledge or motivation to protect their health. It is not a small public health problem. But worth attention and resources in improving the situation. - Informant 4

Q2. Why do college students clearly know how HIV is transmitted but do not know how HIV is not transmitted, though they are well-educated?

Most of the informants believed that the lack of knowledge on identifying how HIV was not transmitted might partly due to the traditional culture in China. Because of the deeply entrenched stigma towards HIV/AIDS and people living with HIV/AIDS, people in China felt awkward and embarrassed talking about HIV. As a result, Chinese students hesitate to learn or discuss HIV-related knowledge.

I think they are still lack of knowledge about how HIV is transmitted. There are some sexual activities can transmit HIV, so I think there might be some confusion among which activity can transmit HIV. Since like there are libertine sexual activities but not all of them will transmit HIV. - Informant 1

Personally I think maybe they are shy to talk this issue with doctors, friends and family members. - Informant 2

To be honest, when you talk about AIDS, they will look at you and think you are kind of strange. Because when you talk about AIDS, people may think you are homosexual. They will related to gay. People still have bias on gay and lesbian. - Informant 3

Sex is sensitive topic in China. Em, parents often don't feel comfortable talking to their children about sexual health and sexual behavior. Teachers also generally, em, are not comfortable talking about sex and sexuality during the class time. - Informant 5

Furthermore, according to the informants, college students had many misconceptions on HIV transmission so that people believed that some casual contacts with HIV carriers will make them at risk.

I have so many uncertainties on identifying the misconceptions. - Informant 2

As far as I know, there is even, like, they call AIDS college, like a small community in China. Because those people are abandoned by the main

society. People don't know that normal activities with people with AIDS are not dangerous. - Informant 3

Q3. For Chinese college students living in the U.S., what do they (you) think current HIV-related education activities or campaigns targeted at Chinese students in China?

All informants thought current HIV-related education in China was in shortage and needed to be improved significantly. In China, there are not many sexual health-related interventions targeting at students except a compulsory course. The course is one-time lecture. Although sex education is included in a compulsory course, school teachers hesitate to talk sex especially sexual behaviors and prevention of sexually transmitted disease, instead, they only teach general information which can be easily found in elsewhere. Students feel awkward to pose questions and discuss with peers in class.

We took required classes. It's not about sex, sometimes the teacher got the part of sex. It was a lecture class. At that time, I did not fully engaged in the class. I think I was little bit shy at that time. I did not ask any questions. I did not actively discuss the issues with peers and teachers. At that time I think I would not have a chance to practice sex. - Informant 2

I was never exposed to any activities except the course I took. It's only one course, that was not that helpful. It was like a one time lecture. I was not fully engaged to the course. The information provided on the course was usually very basic instead of detailed. Which means you can easily get those information in any other sources. It may only be one page of a website, that's it. The lecture is boring. - Informant 3

It's interesting that the word "HIV/AIDS" appears a lots in media, but they don't really talk in detail, like what should be done to prevent the disease. - Informant 4

So there is a big gab in terms of sexual health education in China. The incomplete sexual health education system in China, em, may contribute to, em, sexually transmitted disease including HIV. - Informant 5

Q4. What are the misconceptions among Chinese college students in China?

Some informants believed that the low susceptibility to the disease among young adults might be one of the misconceptions concerning HIV/AIDS. Chinese young adults especially college students believed they had low chance of getting HIV/AIDS, since they were well-educated and treated the relationship seriously. Moreover, most of the informants still believed that some common misconceptions still are held among Chinese college students: mosquito bites (n=4), drinking from a water fountain (n=3), casual contacts such as kissing, hand shaking, and hugging (n=3), sharing eating utensils (n=3), and touching toilet seat or doorknob handle (n=2).

Some of my friends, like a few of my Chinese friends do not work in public health, they might think that, em maybe it is not relevant to them.
Informant 1

They got HIV and thought they were highly educated and they think treat the relationship seriously and the also used condom, but things just happen. So I feel like college students are just like others, in front of HIV, they are equal. - Informant 2

There must be a lots of misconceptions on this disease. Because this topic it the one people don't want to talk. So the less people know the better chance for those misinformation being transferred. Usually those wrong information sounds very terrifying and impressive, make it easier people want to transfer those story. Informant 3

Q5 Do Chinese college students are able to identify the misinformation on the Internet?

Most informants reported that Chinese college students were not confident of identifying incorrect health information on the Internet. They would like to doubt themselves when they were exposed to the information they were not familiar with.

I'm not sure. I feel like I'm not knowledgeable enough that I would be able to tell. - Informant 1

Because I am not professional in medial area, I would not think those are misinformation. I would think maybe because I don't know the information. I don't think the information on the website is wrong. Maybe I don't have the experience. -Informant 2

There are lots of misinformation on the website. I tend to doubt myself though I don't believe it all. -Informant 3

Q6 Do Chinese college students search for health-related information, especially HIV/AIDS-related information?

Three out of five informants reported that Chinese college students did not search HIV/AIDS information very often due to the low perceived susceptibility. However, four informants indicated that the students did search general health information. The motivation for them to search health information was highly related to their own health.

Not so much. I only searched the information when I'm ill. - Informant 1

I search the information mainly depends on my own health status. I do not search HIV information because it is far away from me. - Informant 2

Searching information is highly related to my health situation. I feel this kind of disease is far from me and there is no need for me to search the information. - Informant 3

It's not a routine practice to search health issues. I just search it when I have questions about it or when I encounter something related health. For the HIV, it does not happen to me very often because it mainly depends on the number of sexual partners. - Informant 4

Q7 What's the main source for searching health-related information?

Four out of five informants stated that the Internet was the main source for searching health-related information, and search engine was the top choice. Convenience or accessibility was the main reason for choosing the Internet. Besides, one informant reported that whether searching information on the Internet mainly depended on the level of the painfulness of the illness. If the illness is small with no pain, students would choose to turn to the Internet; while if the illness is serious, they would prefer to go to hospital directly.

Like if I have a health issue, and I want to talk it with doctor, I have to set an appointment on the health patient portal. I need to make an

appointment and talk with a health provider. Sometimes that seems like too much of a hassle. - Informant 1

If the illness is very small and not painful, I would trust the Internet and see what happen. If the illness is really painful, I would go to the hospital directly. I just used general websites to search health information, like google. I don't know any specific authoritative health website. - Informant 2

The Internet is the first way to search information. It's easier to get the Internet access whenever you have laptop or phone with you. I pay a lot of attention to Zhihu, Douban. You never ask those questions to your parents or your friends. Because the first reaction they will have is wondering do you have. - Informant 3

Mostly, the Internet is the main way for searching health-related information because it is the most easily accessed. - Informant 4

I'm sure that young people would search STD online. I would speculate that young people would go to big search engines like the Chinese equivalent to Google. Search engines would be one of the places they would go for health information. - Informant 5

5.1.3 Poster Design

Based on the feedback from the informants, less aggressive and straightforward tone was recommended. Misconceptions on normal activities with people living with HIV/AIDS needed to be corrected and emphasized. The information on anti-stigma is necessary.

If you are in China, it's more conservative and shy culture, and they you design the poster with more romantic and less obvious way, maybe in America you can make it dramatic. It just depends on how you design the poster. Most of the posters I saw did not emphasize the way could not transmit HIV. - Informant 2

People don't know that normal activities with people with AIDS are not dangerous. So people with HIV are isolated. I think those kind of information will be helpful for people to accept like AIDS patients and to help them. - Informant 3

It's worthy and necessary to do sexual education concerning anti-stigma among college students. - Informant 4

5.2 Online Survey

5.2.1 Demographic Characteristics

The survey was conducted between March 8, and March 19, 2016. A total of 122 participants voluntarily responded to the online survey. Of those, 16 participants were not eligible for the study based on the predetermined inclusion factors (be healthy, be healthy, at least 18 years old, and self-identify as a Chinese international student at UNC). Among those who were eligible for the study (n=106), 11 participants' responses were partial so their responses were excluded. As a result, in this survey, 95 participants' responses were considered in data analyses. All 95 respondents were aged 18 or older, with 9.5 percent aged 18-20 (n=9), 45.3 percent aged 21-24 (n=43), 37.9 percent aged 25-29 (n=36), and 7.4 percent aged 30 or older (n=7). They came from various disciplines and programs. Participants came from undergraduate (n=24, 25.3%), master (n=34, 35.8%), combined doctoral or doctoral (n=33, 34.7%), and professional programs (n=4, 4.2%). Approximately 53.7 percent of total participants (n=51) were female. Nearly 48.4 percent (n=46) of participants indicated that their relationship status was single, 33.7 percent (n=32) of participants were single but in a relationship, and 17.9 percent (n=17) were married (see table 1).

5.2.2 Research Hypothesis 1

This study sought to verify the following hypothesis: The Internet is the main source for Chinese college students in the United States searching for general health-related information. Several questions concerning general health-related information searching behavior were asked. Most of the participants (85.3 percent, n=81, N total=95) had at least once searched for health-related information. Of those who searched for the information (n=81), 85.2 percent (n=69) chose the Internet as their main source. Only 8.6 percent of participants who searched for health

information (n=7) chose doctors or health care providers, 4.9 percent chose family members and friends (n=4), and 1.2 percent chose traditional mass media (radios, magazines, television and newspapers) (n=1) (see table 2). Although there were 12 participants who did not choose the Internet as the main source to search health-related information, all of them had surfed the Internet for health information. Of the participants who had ever searched for health-related information on the Internet (n=81), within the last week before conduction the survey, 51.85 percent of them (n=42) had searched health information on the Internet once, 14.81 percent (n=12) of them searched 2-3 times, 4.94 percent (n=4) had searched 4-6 times, and 3.7 percent (n=3) searched daily. Only 24.69 percent (n=20) of respondents had not searched in past week (see table 2). Moreover, female students were more likely to search for health-related information on the Internet than male students. Eighty-three percent of female students searched health-related information on the Internet in the past week (daily, 4-6 times a week, 2-3 times a week, and once a week), compared to 65.71 percent of male students (see table 3).

Of the respondents that used the Internet as their primary source for searching health-related information (n=69), accessibility (n=64, 92.8%) was the main reason for choosing the Internet, followed by ease of understanding (n=25, 36.23%), currency (n=8, 11.59%), and credibility or reliability (n=7, 10.14%). In addition, fitness or exercise fitness or exercise (n=56, 69.14%) and nutrition or diet (n=48, 59.26%) were two frequently searched topics. Only 23.46% participants (n=19) searched for sexual health information (see table 4).

Among those who searched for health-related information on the Internet (n=81), non-profit organizations were chosen as the favored type of website (n=38, 46.91%), followed by support groups (online discussion group with a specific health topic) (n=28, 34.6%), medical professionals' websites (n=24, 29.6%), hospital websites (n=20, 24.7%), university websites

(n=18, 22.2%), government websites (n=17, 21.0%), with drug company websites as the least-selected choice for participants (n=5, 6.2%). Six people chose other providers, such as Baidu, ZhiHu, and the news (see table 5). Furthermore, the accuracy of the information (60, 74.1%), credibility of author (39, 48.2%), and ease of understanding (40, 49.4%) were the three main criteria respondents used to judge health websites (see table 6).

In terms of the extent of difficulty in searching information on the Internet, of the total group (n=81), 53.1 percent (n=43) believed searching the information on the Internet is extremely easy or somewhat easy and 37.0 percent (n=30) believed it is neither easy nor difficult. Only 9.88 percent (n=8) thought it is somewhat difficult. No one thought it is extremely difficult. Moreover, when it comes to the reliability of the information on the Internet, 90.1 percent (n=73) of the total population (n=81) thought that health information on the Internet is very reliable or moderately reliable. Only 9.88 percent (n=8) thought it is slightly reliable.

5.2.3 Research Hypothesis 2

This study posed the following research hypothesis: Chinese college students in the United States know clearly how HIV is transmitted but do not know how HIV is not transmitted. In order to confirm this hypothesis, all participants were asked to finish twelve questions on HIV prevention, HIV misconception, and HIV transmission. Approximately 96.8 percent of participants (n=92) had heard of HIV virus or AIDS illness, only 3.2 percent (n=3) had not hear. Nearly 88 percent of participants (n=81) knew that using a condom every time during sex reduced the chance of getting HIV, while 67.4 percent (n=62) knew that having only one sexual partner who is not infected and also has no other partners reduced the risk of getting HIV. Only 62 percent of the participants knew both of these HIV preventions, and 6.5 percent (n=6) of participants did not know about either of these two preventions. Among these six respondents,

four were single (see table 7). The association between knowledge on HIV prevention and relationship status was not statistically significant (see table 8). Similarly, there was no association between knowledge on HIV prevention and gender (see table 9). However, there is an association between the age group and knowledge on HIV prevention concerning having only one faithful uninfected sex partner ($\chi^2 = 13.304$, $p=0.038$, $df=6$). Participants aged 30 or more are more likely to know HIV can be prevented by having one faithful uninfected sexual partners (see table 10).

Participants were also asked to identify seven common misconceptions among Chinese college students. Most participants knew that sharing food ($n=77$, 83.7%), breathing the same air ($n=87$, 94.6%), touching toilet seat or touching doorknob handle ($n=79$, 85.9%), and drinking from a water fountain ($n=75$, 81.5%) with a person who had HIV/AIDS did not transmit HIV. Moreover, the majority of participants ($n=83$, 90.2%) knew that sharing used needles transmitted HIV. However, nearly half of participants mistakenly believed that mosquito bites ($n=44$, 47.8%) and sharing eating utensils with HIV carriers or people living with AIDS ($n=30$, 32.6%) transmitted HIV. Female participants tend to have more knowledge with the comparison to male participants (see table 11). However, among seven misconceptions, only misconception concerning mosquito bites transmitting HIV was associated with gender ($\chi^2 = 6.009$, $p=0.05$, $df=2$) (see table 12). Moreover, participants who were married tend to have more knowledge on HIV misconception compared to participants who were single or single with a stable relationship (see table 11). Specifically, more than half of the participants who were single and single with a stable relationship held the misconception on mosquito bites, 54.4 percent (n total single=46) and 56.3 percent (n total single with a stable relationship=32) respectively, compared to 18.8 percent of participants who were married. More than one-third of the participants who were single

(34.09p%) and single in a relationship (37.5%) still erroneously believed that sharing eating utensils with HIV/AIDS patients could transmit HIV, compared to 18.8 percent of those who were married (see table 11). Although there was a potential association between relationship status and knowledge on HIV-related misconceptions in the perspective of frequency and percentage, the association between these two was not statistically significant (see table 13). Similarly, there was no statistically significant association between HIV-related misconceptions and gender (see table 14).

Participants were asked to answer questions on mother-to-child HIV transmission. According to key informant interviews, although most Chinese college students knew HIV could be transmitted from mother to child, they did not know clearly whether HIV could be transmitted during pregnancy, delivery, or by breastfeeding. Indeed, most of the participants (n=78, 84.8%) knew that HIV can be transmitted from mother to child during pregnancy. Nevertheless, almost half of the participants did not know HIV could be transmitted from mother to child during delivery (n=35, 38%), and by breastfeeding (n=44, 47.8%). Overall, 94.6 percent of participants knew at least one of the three ways HIV can be transmitted; only 37 percent of participants (n=34) knew about all three ways and five participants did not know about any of the three mother-to-child HIV transmissions. (see table 15). There was no statistically significant correlation between knowledge on misconception and age group, gender, and relationship (see table 16,17,18).

Generally, participants did not have comprehensive knowledge on HIV/AIDS transmission. Only 6.5 percent of participants (n=6) had correctly answered all twelve questions concerning HIV/AIDS prevention, misconception, and mother-to-child transmission — all were female (see table 19).

There is no association between the level of knowledge on HIV/AIDS (HIV preventions, misconception, and HIV transmission) and gender. The p value is greater than 0.05 ($p=0.810$). Similarly, there is no association between the level of knowledge on HIV/AIDS and relationship ($p=0.655$).

5.2.4 Research Hypothesis 3

In order to confirm hypothesis 3: Chinese college students in the United States have an open attitude towards HIV/AIDS and people living with HIV/AIDS (PLWHA), participants were asked to finish four questions regarding their attitude toward HIV/AIDS and PLWHA. Among those who had heard of HIV/AIDS ($n=92$), 10.9 percent of participants ($n=10$) indicated that a teacher with HIV/AIDS should not be allowed to work, and 33.7 percent of ($n=31$) did not know whether a teacher with HIV should be allowed to work. Similarly, 30 out of 92 (32.6%) did not prefer to buy food from a shopkeeper or vender with HIV/AIDS, and 31.5 percent ($n=29$) were not sure. Fifty-nine percent of participants who had heard of HIV/AIDS ($n=54$) wanted the status of their family members with HIV/AIDS to be kept in secret, and 27.2 percent of them ($n=25$) did not know. Finally, only 4.4 percent of participants who head of HIV/AIDS ($n=4$) were not willing to care for a family member with HIV/AIDS, and 25 percent of them ($n=23$) did not know whether they would care for the family member (see table 20). Generally, participants still had discrimination toward people living with HIV/AIDS. Only 29.4 percent ($n=27$) of participants who heard of HIV/AIDS agreed with non of the four discriminatory statements (see table 20). The correlation between knowledge on HIV/AIDS and discriminatory attitudes toward PLWHA was not statistically significant. The Pearson correlation was 0.171, smaller than 0.25. It indicated that there was no strong correlation between the level of knowledge on HIV/AIDS

and the attitudes toward HIV people among respondents. The P value is 0.104, greater than 0.05. Therefore, the correlation was not statistically significant.

5.2.5 Research Hypothesis 4

The fourth hypothesis is: When the corrected misconception on HIV is provided in written text only or in written text and numerically based message format, participants prefer a gain-framed message instead of a loss-framed message. In this study, most of the participants preferred gain-framed message in text based only (n=79, 83.2%) and in text and numerically based (n=74, 77.9%) message formats. Only 9.5 percent and 4.2 percent of participants chose loss-framed message in text only and text and number respectively. Roughly seven percent of participants equally preferred gain- and loss-framed messages in text, and 17.9 percent in text and number format (see table 21).

The main reason for choosing gain-framed message was the positive and less aggressive tone. For example, with the comparison to loss-framed message, most of the participants reported that the gain framing message was “more acceptable,” “more positive and gentle,” “more encouraging and supportive,” and “more inspiring and motivating.”

“I like it uses a positive intention “save people’s life” to motivate us learn more of the AIDS.”

“It’s more positive, full of hope and passion.”

“I prefer positive actions like saving people’s live instead of hurting people.”

“A positive way of rhetoric at the end can be more constructive and acceptable for those who do not have adequate knowledge regarding HIV or AIDS to change their psychological expectations and actual behavior towards the disease and infected population.”

Besides the main reason concerning more positive and less offensive tone, participants also indicated an additional cultural reason for choosing the gain-framed message, appealing to the preferences of Eastern culture. According to respondents, even though the loss-framed

phrasing like “hurting other people” is “somewhat common in the U.S.,” and “it’s common with a reason,” it is “a bit offensive” for Chinese people.

However, for those participants who preferred the loss-framed message, they believed the loss message was short and clear, and it conveyed the seriousness of the issue.

Among the participants who thought both gain- and loss-framed messages were good, they did not notice any significant differences between the phrasing. They thought both of the messages were “basically the same” and could not tell much difference.

5.2.6 Research Hypothesis 5

When the corrected misinformation on HIV is provided in written text and graphics, both the gain- and loss-framed messages are equally preferred by participants, and posters in text and graphical message format increase participants’ self-efficacy in protecting themselves from being infected by HIV. Here, the self-efficacy is participants’ intention to search HIV/AIDS-related information to protect themselves. The intention was measured by 3-point scales. In order to study whether text and graphical design may mediate the effects of gain and loss framing, participants were asked which poster they preferred after being exposed to two posters (gain vs. loss) in text and graph. Only 24.2 percent of the participants chose “equal.” More than half of the participants (n=69, 72.6%) still chose the poster with gain-framed message. This occurred because participants only paid attention to the striking tagline instead of the message format. Even though participants did notice the different message formats, they only focused on what was most striking on first glance. For example:

“I just care about the last sentence.”

“Though the text format changed, I still like the 2nd one. The reason is because it is more positive and encouraging.”

“I just realized that the first pair of posters did not include data to say the prevalence of HIV. But I still chose positive poster 2.”

Therefore, gain- and loss-framed messages in text and graphically based message format were not equally preferred by the participants. When it comes to the influence on self-efficacy, 23.2 percent of participants had a strong intention to find out more HIV-related information after the exposure to the text-based only message format, 27 percent had a strong intention after viewing the text and number formats, and 28.4 percent after viewing text and graphics formats. There was only a slight difference in self-efficacy between the three message formats, with the highest found in the text and graphically based format. Approximately 86.3 percent, 92.6 percent, and 88.4 percent of participants had the intention to search HIV-related information after their exposure to text based only, text and numerically based, and text and graphically based posters, respectively (see table 21).

5.2.7 Visual Aids Design

Some participants gave considerable positive feedback for the text and graphically based message format.

“It has graphs to help show the contents, which is easier for people to understand and remember than text, and text and number.”

“It gives us a direct view on the prevalence of AIDS.”

“Graphs are certainly more visually noticeable, and are likely to be the most preferred, in my opinion.”

“More numerical information brings more reliability. Also, graphics bring people's attention and interests to the topic.”

“Numbers and graphs are generally more helpful and informative than plain words. Easier to make impressions as well.”

Participants also provided suggestions:

“Less words, more picture.”

“Right column looks good. Less text on left column would be better.”

“The background color looked some terribly.”

“The last pair is better. Maybe capitalize or highlight "does not" will be good.”

Generally, participants thought the message in text and graphics was the most favorite format due to the ease to understand and visualization of the key information.

CHAPTER 6: DISCUSSION

Discussed in Chapter 1, with poor knowledge on HIV/AIDS, Chinese college students in the United States are at risk of getting HIV/AIDS. This study aims to examine (a) their knowledge about HIV and AIDS, (b) the attitudes toward people living with HIV/AIDS, and (c) the sources they rely on when searching for health-related information. This study also aims to design a culturally-based poster targeting Chinese students in the U.S..

This study found that Internet was the main source for Chinese college students in the United States searching for general health-related information. It confirmed previous studies' finding that mass media is the main source for providing health information, with the Internet ranking first (Bertrand, O'Reilly, Denison, Anhang, & Sweat, 2006; Ross & Carson, 1988). Moreover, female respondents were more likely to search health-related information on the Internet, compared to male respondents. Specifically, eighty-three percent of female participants searched health-related information on the Internet in the past week before conducting the study, compared to 65.71 percent of male participants. This finding indicates that the American education institutions can use the Internet to educate Chinese college students about HIV/AIDS.

This study also found that, generally, participants did not have comprehensive knowledge on HIV/AIDS transmission, although compared to earlier studies conducted in China where more than half of Chinese college students had misconceptions (Huang et al., 2005; Li et al., 2004). Only 6.5 percent of participants (n=6) had correctly identified two HIV preventions, seven HIV-related misconceptions, and three mother-to-child HIV transmission. All of the six

participants were female. Specifically, nearly one-third of participants did not know having only one faithful sexual partners who is not infected and has no other partners could reduce the risk of getting HIV/AIDs. Even worse, nearly half of participants mistakenly believed that mosquito bites and sharing eating utensils with HIV carriers or people living with AIDS transmitted HIV. Although most of the participants knew that HIV can be transmitted from mother to child during pregnancy, almost half of the participants did not know HIV could be transmitted from mother to child at delivery and by breastfeeding. These results indicate that though Chinese college students know HIV/AIDs, they do not have comprehensive knowledge on HIV/AIDs. Future HIV-related intervention can emphasize that limiting number of sexual partners can reduce the risk of being infected by HIV, mosquito bites and sharing eating utensils with HIV carriers do not transmit HIV, and mother-to-child delivery and breastfeeding can transmit HIV.

Another important finding of this study was the association between age and knowledge on having only one faithful uninfected sex partner reducing the risk of getting HIV. More participants aged 30 or more were likely to know HIV can be prevented by having one faithful uninfected sexual partners compared to other age groups. This can be explained by the number of received sexual educational activities. They may receive more education compared to other age groups since their in-school year is longer than other younger participants. Moreover, there was another association found in the study, that was, identifying misconception concerning mosquito bites was associated with gender. More male participants identified the misconception than female participants.

Besides, this study found that the association between the level of knowledge on HIV/AIDs (HIV prevention, HIV-related misconception, and HIV transmission) and gender ($p=0.810$) was not statistically significant. This result conflicts with the study conducted by Tung

et al. in 2015 and the research by Tung, Lu, and Cook (2013). In the 2015 study, Tung, Serratt, and Lu firmly recommended to develop more differentiated HIV intervention strategies specific to gender. In another study, it was found that male participants were more likely to demonstrate a higher HIV/AIDS knowledge level than females. This conflict may be explained by the sampling method of this study. The participants of this study was recruited in one local university and only 95 Chinese college students participated in this study. Therefore, the findings of this study may be limited to only this university. Similarly, this study also conflicts with Hamra's study (2005). Hamra et al. found that more knowledge about AIDS was associated with less HIV/AIDS-related stigma. However, in this study, the correlation between the general knowledge on HIV/AIDS and the discriminatory attitudes toward PLWHA was not statistically significant. The P value is 0.104, greater than 0.05. Perhaps, Chinese college students is different from people from Kenya; or perhaps, the result of this study is not representative enough.

Finally, this study found that gain-framed message was preferred in all message formats (text only based, text and numerically based, text and graphically based). There was only a slight difference in self-efficacy between the three message formats, with the highest found in the text and graphically based format. This result partially conflicts with the findings of Garcia-Retamero and Cokely's study (2011). Both Garcia-Retamero and Cokely's and this study found that gain-framed message were more effective in promoting prevention behavior. However, their study indicated that both the gain- and loss-framed messages in text and graph were equally and highly effective in promoting health behaviors. Conversely, this study only found a slightly preference for text and graph message format, Chinese college students still preferred gain-framed message in text and graphically based format. This difference exists may because Chinese college

students only pay attention to the most striking part of the poster instead of other parts, such as the message format.

CHAPTER 7: LIMITATIONS

The findings of this study should be interpreted with caution since it has several limitations.

7.1 Generalizability

First, the generalizability of the study is largely limited by the sampling method. For the key informant interviews, the potential list of key informants was carefully selected based on different professional backgrounds, familiarity with Chinese college students in the United States (the target audience) and with HIV/AIDS in China (health topic). However, only those informants who were accessible and willing to talk could be reached. Among these reached informants, some of them were not willing to voluntarily participate in this study. As a result, the final interview participants may be likely not representative of the target population. For the survey, respondents were recruited through a local university and the sample size was relatively small (N=95), so that the generalizability of the study results may be limited only this university's population. Moreover, the difficulties of assuring participant eligibility may further limit the generalization. Not every Chinese student in the local university had the same chance to participate in the study. There might be a self-selection bias in the sample. Participants who chose to participate may have special interest in the topic or in the compensation and thus they may differ from those who did not choose to participate. Therefore, the generalizability of the study needs to be interpreted with caution.

7.2 Survey Design

Secondly, the survey design is another limitation of this study. Given the nature of the online survey, the collected data were based on self-reports of participants. The recall bias and the social desirability bias may have influence participants' reporting so that inaccurate reporting may be gathered. In addition, the questionnaire lacked questions on sexual orientation and condom use. Sexual orientation is an important indicator for examining the susceptibility of getting HIV (Center for Disease Control and Prevention, 2014), and condom use prevents the spread of HIV between sexual partners (Kiene et al., 2005). The study also did not include other ethnic groups so there was no substantial and direct comparison to know whether Chinese students were different from other students in the United states.

The design limitation might have also impacted the answers of participants' who used mobile devices. The last online survey module presented a total of six posters in three pairs, with questions about each pair. However, the poster display was not responsive, making it difficult to read on a small mobile screen. Participants using mobile devices might have become frustrated and not spent enough time examining the two posters. Moreover, the total six posters utilized old data which comes from an official report published by the Chinese government in 2008 ("UNGASS Country Progress Report P.R. China"). The figure was the most recent shared one concerning the percentage of young adults among HIV carriers and AIDS patients.

7.3 Time Limitation

This study is a cross-sectional study and conducted during one specific period of time. Due to time and resource constraints, this study only addressed the first two steps of developing and evaluating a health-related intervention. According to Whittaker et al. (2012), this study only did initial research to create intervention content and design, and did a pretest to determine the

acceptability of the intervention among the target population and to get feedback. However, the effectiveness of the proposed intervention is unknown. Therefore, a prospective study is needed to track the participants' information seeking behavior, HIV-related knowledge, attitudes, and practice over a two-to-three month period after exposure to a revised intervention.

LIST OF TABLES

Table 1. Demographic Characteristics of Survey Participants (N=95)

Characteristic	Result n (%)
Program	
Undergraduate	24 (25.26)
Master	34 (35.79)
Combined Doctoral or Doctoral	33 (34.74)
Professional	4 (4.21)
Age	
18-20	9 (9.47)
21-24	43 (45.26)
25-29	36 (37.89)
30 or more	7 (7.37)
Gender	
Male	44 (46.32)
Female	51 (53.68)
Relationship	
Single	46 (48.42)
Single with a stable romantic relationship	32 (33.68)
Married	17 (17.89)

Table 2: Health Information Searching (N=95)

Characteristic	Did you ever search for health information		Total Number
	NO	YES	
Health Information Source	14	81	95
Traditional mass media		1	
Doctors/health care providers		7	
The Internet		69	
Family members and friends		4	
Frequency of searching health information on the Internet			
Daily		3	
4-6 times a week		4	
2-3 times a week		12	
Once a week		42	
Never		20	

Table 3: Frequency of Health Information Searching on the Internet by Gender (N=81)

	Frequency of searching health-related information on the Internet in the past week					Total number
Gender	Daily n (%)	4-6 times a week n (%)	2-3 times a week n (%)	Once a week n (%)	Never n (%)	81
Male	1 (2.86)	2 (5.71)	1 (2.86)	19 (54.29)	12 (34.29)	35
Female	2 (4.35)	2 (4.35)	11 (23.91)	23 (50)	8 (17.39)	46

Table 4: Searching Health Information by Topic (N=81)

Topic	Number (%) (N=81)	Example
Women's health	39 (48.15)	_____
Men's health	19 (23.46)	_____
Sexual health	19 (23.46)	_____
Fitness/exercise	56 (69.14)	_____
Nutrition/diet	48 (59.26)	_____
Diabetes	4 (4.94)	_____
Cancer	16 (19.75)	_____
Heart diseases	7 (8.64)	_____
Drug/medication	9 (11.11)	_____
Mental health	12 (14.81)	_____
Skin diseases	15 (18.52)	_____
Digestive disorder	4 (4.94)	_____
Asthma	1 (1.23)	_____
Arthritis	2 (2.47)	_____
Others	4 (4.94)	Dental
		How to keep healthy

Table 5: Provider of Health-Related Websites (N=81)

Provider	Number (%) (N=81)	Example
Government	17 (20.99)	_____
Non-profit organization	38 (46.91)	_____
Hospital	20 (24.69)	_____
University website	18 (22.22)	_____
Other professionals	24 (29.63)	_____
Support groups (online discussion group with a specific health topic)	28 (34.57)	_____
Drug company	5 (6.17)	_____
Others	6 (7.41)	Baidu, Zhihu
		news

Table 6: Criteria for Health Websites (N=81)

Criteria	Number (%) (N=81)
Accuracy of the information	60 (74.07)
Credibility of author	39 (48.15)
Currency of information	20 (24.69)
Ease of understanding	40 (49.38)
Confidentiality	6 (7.41)
Website utility	19 (23.46)
Interactivity	7 (8.64)
Site has links and source of information	14 (17.28)
Site is accredited to a reputable organization	23 (28.40)

Table 7: Identifying HIV Prevention among Participants who Heard of HIV/AIDS (N=92)
Number and percentage of participants who identified the HIV prevention

	HIV transmission can be prevented by:		Knows all two ways n (%)	Knows at least one way n (%)	Doesn't know any way n (%)	Total Number
	Having only one faithful uninfected sex partner n (%)	Using a condom every time n (%)				
	62 (67.39)	81 (88.04)	57 (61.96)	86 (93.48)	6 (6.52)	92
Age						
18-20	5 (55.56)	7 (77.78)	4 (44.44)	8 (88.89)	1 (11.11)	9
21-24	31 (75.61)	36 (87.80)	28 (68.29)	39 (95.12)	2 (4.88)	41
25-29	21 (58.33)	33 (91.67)	20 (55.56)	34 (94.44)	2 (5.56)	36
30- more	5 (83.33)	5 (83.33)	5 (83.33)	5 (83.33)	1 (16.67)	6
Sex						
Male	30 (71.43)	38 (90.48)	28 (66.67)	40 (95.24)	2 (4.76)	42
Female	32 (64)	43 (86)	29 (58)	46 (92)	4 (8)	50
Relationship						
Single	30 (68.18)	36 (81.82)	26 (59.09)	40 (90.91)	4 (9.09)	44
Single with a stable relationship	21 (65.63)	30 (93.75)	20 (62.5)	31 (96.88)	1 (3.13)	32
Married	11 (68.75)	15 (93.75)	11 (68.75)	15 (93.75)	1 (6.25)	16

Table 8: Identifying HIV Prevention among Participants who Heard of HIV/AIDS by Relationship (N=92)

Chi-Square analysis of participants who identified HIV prevention by relationship

People who know that HIV can be prevented by:	Total (n=92) n	Single (n=44) n	Single with a relationship (n=32) n	Married (n=16) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
Having only one faithful uninfected sex partner	62	30	21	11	2.561	0.634	4
Using a condom every time	81	36	30	15	5.912	0.206	4

Table 9: Identifying HIV Prevention among Participants who Heard of HIV/AIDS by Gender (N=92)

Chi-Square analysis of participants who identified HIV prevention by gender

People who know that HIV can be prevented by	Total (n=92) n	Male (n=42) n	Female (n=50) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
Having only one faithful uninfected sex partner	62	30	32	2.211	0.331	2
Using a condom every time	81	38	43	0.906	0.636	2

Table 10: Identifying HIV Prevention among Participants who Heard of HIV/AIDS by Age Group (N=92)

Chi-Square analysis of participants who identified HIV prevention by age group

People who know that HIV can be prevented by:	Total (n=92) n	age 18-20 (n=9) n	age 21-24 (n=41) n	aged 25-29 (n=36) n	aged 30 or more (n=6) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
Having only one faithful uninfected sex partner	62	5	31	21	5	13.304	0.038*	6
Using a condom every time	81	7	36	33	5	5.258	0.511	6

Table 11: Identifying Misconceptions about HIV/AIDS (N=92)
Number and percentage of participants who identified the HIV misconception

	People who know that HIV cannot be transmitted by:						People who know that:	Total Number
	mosquito bites	sharing food	breathing the same air	touching a toilet seat/door knob handle	drinking from the same water fountain	sharing eating utensils	HIV can be transmitted by sharing needles	
	48 (52.17)	77 (83.70)	87 (94.57)	79 (85.87)	75 (81.52)	62 (67.39)	83 (90.22)	92
Age								
18-20	2 (22.22)	7 (77.78)	9 (100)	8 (88.89)	8 (88.89)	5 (55.56)	8 (88.89)	9
21-24	20 (48.78)	30 (73.17)	36 (87.80)	34 (82.93)	32 (78.05)	28 (68.29)	35 (85.37)	41
25-29	21 (58.33)	34 (94.44)	36 (100)	32 (88.89)	30 (83.33)	24 (66.67)	34 (94.44)	36
30- more	5 (83.33)	6 (100)	6 (100)	5 (83.33)	5 (83.33)	5 (83.33)	6 (100)	6
Sex								
Male	19 (45.24)	34 (80.95)	40 (95.24)	37 (88.10)	31 (73.81)	24 (57.14)	39 (92.86)	42
Female	29 (58)	43 (86)	47 (94)	42 (84)	44 (88)	38 (76)	44 (88)	50
Relationship								
Single	21 (47.73)	35 (79.55)	42 (95.45)	39 (88.64)	35 (79.55)	29 (65.91)	42 (95.45)	44
Single with a stable relationship	14 (43.75)	26 (81.25)	29 (90.63)	26 (81.25)	25 (78.13)	20 (62.5)	26 (81.25)	32
Married	13 (81.25)	16 (100)	16 (100)	14 (87.5)	15 (93.75)	13 (81.25)	15 (93.75)	16

Table 12: Identifying Misconceptions about HIV/AIDS by Gender(N=92)
Chi-Square analysis of participants who identified HIV prevention by gender

People who know that HIV cannot be transmitted by:	Total (n=92) n	Male (n=42) n	Female (n=50) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
mosquito bites	48	19	29	6.009	0.05*	2
sharing food	77	34	43	3.718	0.156	2
breathing the same air	87	40	47	0.025	0.875	1
touching a toilet seat/doorknob handle	79	37	42	2.641	0.267	2
drinking from the same water fountain	75	31	44	3.697	0.157	2
sharing eating utensils	62	24	38	3.786	0.151	2
People who know that HIV cannot be transmitted by:						
sharing used needles	83	39	44	1.114	0.573	2

Table 13: Identifying Misconceptions about HIV/AIDS by Relationship (N=92)
Chi-Square analysis of participants who identified HIV prevention by relationship

People who know that HIV cannot be transmitted by:	Total (n=92) n	Single (n=44) n	Single with a relationship (n=32) n	Married (n=16) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
mosquito bites	48	21	14	13	7.564	0.109	4
sharing food	77	35	26	16	6.792	0.147	4
breathing the same air	87	42	29	16	3.062	0.216	2
touching a toilet seat/door knob handle	79	39	26	14	8.163	0.086	4
drinking from the same water fountain	75	35	25	15	2.595	0.628	4
sharing eating utensils	62	29	20	13	2.023	0.732	4
People who know that HIV cannot be transmitted by:							
sharing used needles	83	42	26	15	5.065	0.281	4

Table 14: Identifying Misconceptions about HIV/AIDS by Age Group (N=92)
Chi-Square analysis of participants who identified HIV prevention by age group

People who know that HIV cannot be transmitted by:	Total (n=92) n	age 18-20 (n=9) n	age 21-24 (n=41) n	aged 25-29 (n=36) n	aged 30 or more (n=6) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
mosquito bites	48	2	20	21	5	8.568	0.199	6
sharing food	77	7	30	34	6	9.226	0.161	6
breathing the same air	87	9	36	36	6	5.334	0.149	3
touching a toilet seat/door knob handle	79	8	34	32	5	8.652	0.194	6
drinking from the same water fountain	75	8	32	30	5	2.270	0.893	6
sharing eating utensils	62	5	28	24	5	2.056	0.914	6
People who know that HIV cannot be transmitted by:								
sharing used needles	83	8	35	34	6	3.055	0.802	6

Table 15: Knowledge of Mother-to-Child HIV Transmission (N=92)
Number and percentage of participants who identified mother-to-child HIV transmission

	People who know AIDS can be transmitted from mother to child:			All three ways n (%)	Did not know any specific way n (%)	Total Number
	During pregnancy n (%)	At delivery n (%)	Through breastmilk n (%)			
	78 (84.78)	57 (61.96)	48 (52.17)	34 (36.96)	5 (5.43)	92
Age						
18-20	7 (77.78)	3 (33.33)	5 (55.56)	2 (22.22)	1 (11.11)	9
21-24	35 (85.37)	27 (65.85)	19 (46.34)	16 (39.02)	2 (4.88)	41
25-29	31 (86.11)	23 (63.89)	18 (50)	12 (33.33)	2 (5.56)	36
30- more	5 (83.33)	4 (66.67)	6 (100)	4 (66.67)	0	6
Sex						
Male	36 (85.71)	26 (61.90)	23 (54.76)	16 (38.10)	2 (4.76)	42
Female	42 (84)	31 (62)	25 (50)	18 (36)	3 (6)	50
Relationship						
Single	34 (77.27)	26 (59.09)	21 (47.73)	14 (31.82)	4 (9.09)	44
Single with a stable relationship	30 (93.75)	22 (68.75)	18 (56.25)	14 (43.75)	1 (3.13)	32
Married	14 (87.5)	9 (56.25)	9 (56.25)	6 (37.5)	0	16

Table 16: Knowledge of Mother-to-Child HIV Transmission by Age Group (N=92)
Chi-Square analysis of participants who identified HIV prevention by age group

People who know that HIV can be transmitted from mother to child:	Total (n=92) n	age 18-20 (n=9) n	age 21-24 (n=41) n	aged 25-29 (n=36) n	aged 30 or more (n=6) n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
during pregnancy	78	7	35	31	5	2.870	0.825	6
at delivery	57	3	27	23	4	11.561	0.073*	6
by breastfeeding	48	5	19	18	6	6.952	0.325	6

Table 17: Knowledge of Mother-to-Child HIV Transmission by Gender (N=92)
Chi-Square analysis of participants who identified HIV prevention by gender

People who know that HIV can be transmitted from mother to child:	Total (n=92) n	Male n=42 n	Female n=50 n	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
during pregnancy	78	36	42	0.034	0.983	2
at delivery	57	26	31	0.504	0.777	2
by breastfeeding	48	23	25	0.357	0.837	2

Table 18: Knowledge of Mother-to-Child HIV Transmission by Relationship (N=92)
Chi-Square analysis of participants who identified HIV prevention by relationship

People who know that HIV can be transmitted from mother to child:	Total (n=92) n	Single n=44 n	Single with a relationship n=32 n	Married n=16	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	Df
during pregnancy	78	34	30	14	4.187	0.381	4
at delivery	57	26	22	9	2.029	0.730	4
by breastfeeding	48	21	18	9	0.832	0.934	4

Table 19: Comprehensive Knowledge of HIV/AIDS Transmission (N=92)

	know 2 ways to prevent HIV transmission n (%)	Correctly identify 7 misconceptions about HIV transmission (including the used needles) n (%)	Identify 2 prevention methods, 7 misconceptions n (%)	know 3 ways on mother-to-child HIV transmission n (%)	Have comprehensive knowledge (identify 2 prevention methods, 7 misconceptions, and 3 transmission) n (%)	Total Number
Age	57 (61.96)	30 (32.61)	20 (21.74)	34 (36.96)	6 (6.51)	92
18-20	4 (44.44)	2 (22.22)	2 (22.22)	2 (22.22)	1 (11.11)	9
21-24	28 (68.29)	11 (26.83)	8 (19.51)	16 (39.02)	2 (4.88)	41
25-29	20 (55.56)	14 (38.89)	7 (19.44)	12 (33.33)	1 (2.78)	36
30- more	5 (83.33)	3 (50)	3 (50)	4 (66.67)	2 (33.33)	6
Sex						
Male	28 (66.67)	12 (28.57)	5 (11.90)	16 (38.10)	0	42
Female	29 (58)	18 (36)	15 (30)	18 (36)	6 (12)	50
Relationship						
Single	26 (59.09)	13 (29.55)	10 (22.73)	14 (31.82)	2 (4.55)	44
Single with a stable relationship	20 (62.5)	8 (25)	3 (9.38)	14 (43.75)	2 (6.25)	32
Married	11 (68.75)	9 (56.25)	7 (43.75)	6 (37.5)	2 (12.5)	16

Table 20: Attitudes toward People Living with HIV/AIDS (N=92)

	A teacher with HIV but not sick should be allowed to continue teaching n (%)	You would buy food from a shopkeeper with HIV/AIDS n (%)	The status of family member with HIV/AIDS should be in secret n (%)	You would be willing to care for a family member with HIV/AIDS n (%)
Yes	51 (55.43)	33 (35.87)	54 (58.79)	65 (70.65)
No	10 (10.87)	30 (32.61)	13 (14.13)	4 (4.35)
Don't know	31 (33.70)	29 (31.52)	25 (27.17)	23 (25)
Total	92	92	92	92

	Number of Chinese college students who:						
	Believe that a teacher with HIV should not be allowed to work n (%)	Would not buy food from a person with HIV/AIDS n (%)	If a family member had HIV would want to keep it a secret n (%)	Would not care for a family member who was sick with AIDS n (%)	Agree with at least one discriminatory statement n (%)	Agree with none of the discriminatory statements n (%)	Number of people who have heard of AIDS
Age	10 (10.87)	30 (32.61)	54 (58.70)	4 (4.35)	64 (69.57)	27 (29.35)	92
18-20	2 (22.22)	1 (11.11)	4 (44.44)	0	5 (55.56)	4 (44.44)	9
21-24	2 (4.88)	16 (39.02)	24 (58.54)	2 (4.88)	28 (68.29)	13 (31.71)	41
25-29	6 (16.67)	13 (36.11)	21 (58.33)	2 (5.56)	26 (72.22)	9 (25)	36
30- more	0	0	5 (83.33)	0	5 (83.33)	1 (16.67)	6
Sex	10 (10.87)	30 (32.61)	54 (58.70)	4 (4.40)	64 (69.57)	27 (29.35)	92
Male	5 (11.90)	14 (33.33)	22 (52.38)	1 (2.38)	29 (69.05)	13 (30.95)	42
Female	5 (10)	16 (32)	32 (64)	3 (6)	35 (70)	14 (28)	50
Relationship	10 (10.87)	30 (32.61)	54 (58.70)	4 (4.40)	64 (69.57)	27 (29.35)	92
Single	5 (11.36)	10 (22.73)	24 (54.55)	3 (6.82)	29 (65.91)	15 (34.09)	44

	Number of Chinese college students who:						
	Believe that a teacher with HIV should not be allowed to work n (%)	Would not buy food from a person with HIV/AIDS n (%)	If a family member had HIV would want to keep it a secret n (%)	Would not care for a family member who was sick with AIDS n (%)	Agree with at least one discriminatory statement n (%)	Agree with none of the discriminatory statements n (%)	Number of people who have heard of AIDS
Single with a stable relationship	4 (12.5)	15 (46.86)	21 (65.63)	1 (3.13)	23 (71.86)	8 (25)	32
Married	1 (6.25)	5 (31.25)	9 (56.25)	0	12 (75)	4 (25)	16

Table 21: Comparison among Gain- and Loss-Framed Message Design in Different Message Formats (N=95)

	Text	Text & Number	Text & Graph
Poster choice			
Poster 1 (Loss)	9 (9.47)	4 (4.21)	3 (3.16)
Poster 2 (Gain)	79 (83.16)	74 (77.89)	69 (72.63)
Equal	7 (7.37)	17 (17.89)	23 (24.21)
Trust			
Not at all	4 (4.21)	3 (3.16)	4 (4.21)
A little	23 (24.21)	37 (38.95)	40 (42.11)
A lot	68 (71.58)	55 (57.89)	51 (53.68)
Motivation			
Not at all	13 (13.68)	7 (7.37)	11 (11.58)
A little	60 (63.16)	62 (65.26)	57 (60)
A lot	22 (23.16)	26 (27.37)	27 (28.42)
Total	95	95	95

APPENDIX 1: EMAIL RECRUITMENT FOR KEY INFORMANTS

Hello,

We talked about my master's study last time, and now I can finally conduct my research with the approval from IRB! The study number is 16-0240. The interview will be recorded and transcribed, but no identifier will be disclosed (IT assistant will help me protecting the data). Your name, title, or any potential identifiers will not be stated in my final paper.

I'm so excited about the research study. It is about message design for correcting misinformation on HIV/AIDS for Chinese international students in the United States. The main purpose of my study is to add to the growing understanding of knowledge, attitudes, and practice (KAP) toward HIV/AIDS among Chinese college students in the United States.

My study includes two parts. First is telephone interview, and second part is a survey among Chinese college students at UNC. I think you are the perfect key informant for my telephone interview.

The telephone interview will be about 25-30 minute. You will be asked five main questions: what do you think of the current situation of human immunodeficiency virus (HIV) in China, do you usually search for health-related information on the Internet, do you ever search for information on sexually transmitted disease (STD) online, have you ever noticed some previous campaigns on STD in China, do you think common myths are still held by young adults born in China. **The exact questions will be emailed in advance.**

Are you willing to join my study as a key informant? If so, when will you be available for a 25-30 minutes telephone interview?

Thank you so much for your time! I'm looking forward to your reply!

Best,
Ran

APPENDIX 2: TELEPHONE INTERVIEW GUIDE AND QUESTIONS

1. What do you think of the current situation of human immunodeficiency virus (HIV) in China?
 - a. How many people do you think are infected with HIV in China? Is it a rare epidemic disease?
 - b. Do you believe young adult (college students) are more vulnerable to this virus than others? Why [why not]?

2. Do you usually search for health-related information on the Internet? For example, what medicines should you take when you have a common cold?

Yes ==>

How many times and why? e.g. every week because of subscription to certain health-related online newspaper.

Why do you search for health-related information on the Internet (it is recommended by friends or doctors; the illness is not a big deal; it is a widely used [popular] website; you think the source of the information is reliable; past experience; convenient)?

Which platform or website do you usually turn to?

Do you ever notice misinformation [incorrect information] about a health topic on the Internet? If so, what did you notice?

Are you skeptical about the health-related information on the Internet? Why [Why not] ?

No ==>

If not the Internet, when and where do you search health-related information and why? e.g. when I get illness. How do you learn health-related information (doctor visiting, flyers)

Which health information source do you usually turn to?

Do you ever notice misinformation [incorrect information] about a health topic in your usual source of information ? If so, what did you notice?

Are you skeptical about the health-related information on this source? Why [Why not] ?

3. How about sexually transmitted disease (STD)? Do you ever search for information on STD online?

- a. How many times have you searched for STD information? Very often?
Yes ==> Why (susceptibility, severity, people around you, occupation, curiosity)?
No ==> Why ?

- b. Could you recall how old you were when you searched for STD information?
- c. Which platform or website do you usually turn to?
- d. Do you ever notice misinformation [incorrect information] about an STD topic on the Internet? If so, what did you notice?
- e. Are you skeptical about STD information on the Internet? Why [Why not] ?

4. Have you ever noticed some previous campaigns on STD?

Yes ==>

- What was the campaign?
- Who was the target audience?
- What was the purpose?
- What did you learn from it?
- Do you think it was effective?
- Do you think there exist programs aiming to educate people at-risk (people who are not infected by HIV) about STD knowledge, such as HIV transmission, correcting misinformation on HIV?

No ==> Do you think there exist programs aiming to educate people at-risk (people who are not infected by HIV) about STD knowledge, such as HIV transmission, correcting misinformation on HIV?

5. Do you think these myths are held by young adults born in China?

- a. There is a difference between HIV and AIDS If so, what's the difference?
- b. people can get HIV by being around people who are HIV-positive
 - Breathing the same air as someone who is HIV-positive
 - Touching a toilet seat or doorknob handle after an HIV-positive person
 - Drinking from a water fountain
 - Hugging, kissing, or shaking hands with someone who is HIV-positive
 - Sharing eating utensils with an HIV-positive person
 - Using exercise equipment at a gym
 - Infected blood, semen, vaginal fluid, or mother's milk.
- c. new drugs will keep people safe so there is no need to worry about becoming HIV positive
 - Which drug? (antiretroviral drugs)
- d. new drugs can cure HIV carriers? If so, which drug?
- e. people can get HIV from mosquitoes.
- f. If an individual is straight and does not use intravenous (IV) drugs, this person will never become HIV-positive.
- g. If an HIV carrier receive proper treatment, this individual will not spread the HIV virus.
- h. you can tell whether an individual is HIV-positive based on symptoms?
- I. HIV can be transmitted through oral sex?
 - (<http://www.webmd.com/hiv-aids/top-10-myths-misconceptions-about-hiv-aids?page=2>)

APPENDIX 3: EMAIL RECRUITMENT FOR SURVEY PARTICIPANTS

Hello UNC students,

Research Study on Message Design for correcting Misinformation on HIV/AIDS

- **Are you a healthy individual who does not suffer from HIV/AIDS?**
- **Are you at least 18 years of age?**
- **Are you Chinese international students at UNC (16 years in China at least)?**

*If you answered **YES** to all the questions above, you are invited to participate in the following survey by researchers at the University of North Carolina at Chapel Hill who are conducting a study to learn more about knowledge, attitudes, and practice toward HIV/AIDS and people living with HIV among Chinese college students at UNC.*

The main purpose of this study is to add to the growing understanding of knowledge, attitudes, and practice (KAP) toward HIV/AIDS among Chinese college students in the United States.

For four chances toward a \$25 gift card to [amazon.com](https://www.amazon.com), please fill out this brief survey, which takes around 15-20 minutes to complete. To begin the survey, please visit this link:

https://unc.az1.qualtrics.com/SE/?SID=SV_bJX5Ga2lEP8Icc

This research has been reviewed and approved by the UNC Office of Human Research Ethics (Study #: 16-0240) on 02/10/2016. The data collected will only be used for the research and will be kept confidential. Once the project is completed, the data will be deleted. If you have any questions about your rights as a research participant, please contact the IRB Office by calling (919)966-3113 or by email IRB_Subjects@unc.edu. If you have any questions about this study, please contact Li Ran at liran@live.unc.edu.

Thank you so much for your participation!

POSTER RECRUITMENT FOR SURVEY PARTICIPANTS

Research Study on Message Design for correcting Misinformation on HIV/AIDS

- Are you a healthy individual who does not suffer from HIV/AIDS?
- Are you at least 18 years of age?
- Are you Chinese international students at UNC (16 years in China at least)?

*If you answered **YES** to all the questions above, you are invited to participate in the following survey by researchers at the University of North Carolina at Chapel Hill who are conducting a study to learn more about knowledge, attitudes, and practice toward HIV/AIDS and people living with HIV among Chinese college students at UNC.*

The main purpose of this study is to add to the growing understanding of knowledge, attitudes, and practice (KAP) toward HIV/AIDS among Chinese college students in the United States.

For four chances toward a \$25 gift card to amazon.com, please fill out this brief survey, which takes around 15-25 minutes to complete. To begin the survey , please visit this link:

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Or scan this QR code:



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Thank you so much for your participation!

APPENDIX 4: QUESTIONNAIRE

Are you a healthy individual who does not suffer from HIV/AIDS?

Yes (next question) No (end of survey and thank you)

Are you at least 18 years of age?

Yes (next question) No (end of survey and thank you)

Are you Chinese international students at UNC (16 years in China at least)?

Yes (next question) No (end of survey and thank you)

Congratulations! You are eligible for this survey.

Demographics

1. What program/year are you currently in at UNC?

Undergraduate

Masters

Doctoral or Combined Doctoral

Professional

2. Age

18-20

21-24

25-29

30 or more

3. Sex

Male

Female

Other

4. Relationship

Single

Single with a stable romantic relationship

Married

Divorced

Other:

Information Seeking Module

5. Did you ever search for health-related information?

Yes=1 No=2 (Next module)

6. What's the main source for you to search health information?

Traditional mass media (radios, magazines, television and newspapers)

Doctors/health care providers

The Internet (skip to 8)

Family members and friends

7. Have you surfed the Internet for health information?

Yes=1 (skip to 9) No=2 (Next module)

8. What's the reason for you to choose the Internet as the main way to search health-related information? (select one at least)

credibility/reliability

accessibility

currency

ease of understanding

others

9. How often do you use the Internet to search health information in past week?

Daily

4-6 times a week

2-3 times a week

Once a week

Never

10. What health-related topic do you search on the Internet (select more than one response)?

Women's health

Men's health

Sexual health (e.g., sexually transmitted diseases, sexual behaviors)

Fitness/exercise

Nutrition/diet

Diabetes

Cancer

Heart diseases

Drug/medication

Mental health
Skin diseases
Digestive disorder
Asthma
Arthritis
others

11. What providers of health-related websites do you mostly visited (select more than one response)?

government
non-profit organization
hospital
university website
other professionals
support groups (online discussion group with a specific health topic)
drug company
others

12. What are your criteria for health websites (select more than one response)?

Accuracy of the information
Credibility of author
Currency of information
Ease of understanding
Confidentiality
Website utility (user friendly website, such as organization, font, and color of the website)
Interactivity
Site has links and source of information
Site is accredited to reputable organization

13. How easy is it to find the health information you are looking for on the Internet?

Extremely difficult
Somewhat difficult
Neither easy nor difficult
Somewhat easy
Extremely easy

14. How reliable is the health information on the Internet?

Not at all reliable
Slightly reliable
Moderately reliable
Very reliable
Extremely reliable

HIV/AIDS Module

15. Have you ever heard of the virus HIV or an illness called AIDS?

Yes=1 No=2 (next module)

16. Can people protect themselves from getting infected with the AIDS virus by having one sex partner who is NOT infected and also has no other partners?

Yes=1 No=2 DK=3

17. Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?

Yes=1 No=2 DK=3

18. Can people get the AIDS virus from mosquito bites?

Yes=1 No=2 DK=3

19. Can people get the AIDS virus by sharing food with a person who has AIDS?

Yes=1 No=2 DK=3

20. Can people get the AIDS virus by breathing the same air as someone who have AIDS?

Yes=1 No=2 DK=3

21. Can people get the AIDS virus by touching a toilet seat or doorknob handle after a person who has AIDS?

Yes=1 No=2 DK=3

22. Can people get the AIDS virus by drinking from the same water fountain after a person who has AIDS?

Yes=1 No=2 DK=3

23. Can people get the AIDS virus by sharing eating utensils (such as forks and plates) with a person who has AIDS?

Yes=1 No=2 DK=3

24. Can people get the AIDS virus by getting injections with a needle that was already used by someone else?

Yes=1 No=2 DK=3

25. Can HIV be transmitted from a mother to a baby during pregnancy?

Yes=1 No=2 DK=3

26. Can HIV be transmitted from a mother to a baby during delivery?

Yes=1 No=2 DK=3

27. Can HIV be transmitted from a mother to a baby by breastfeeding?

Yes=1 No=2 DK=3

28. If a female teacher has the AIDS virus but is not sick, should she be allowed to continue teaching in school?

Yes=1 No=2 DK/not sure/depends=3

29. Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had the AIDS virus?

Yes=1 No=2 DK/not sure/depends=3

30. If a member of your family became infected with the AIDS virus, would you want it to remain a secret?

Yes=1 No=2 DK/not sure/depends=3

31. If a member of your family became sick with the AIDS virus, would you be willing to care for him or her in your household?

Yes=1 No=2 DK/not sure/depends=3

Poster Module



Poster 1



Poster 2

32.1 Which poster do you like?

Poster 1

Poster 2

Equal

32.2 Why do you like the poster?

Text Box

32.3 Do you trust the information on the posters above?

Not at all

A little

A lot

32.4 Does the posters above make you want to find out more information?

Not at all

A little

A lot



Poster 1



Poster 2

33.1 Which poster do you like?

Poster 1

Poster 2

Equal

33.2 Why do you like the poster?

Text Box

33.3 Do you trust the information on the posters above?

Not at all

A little

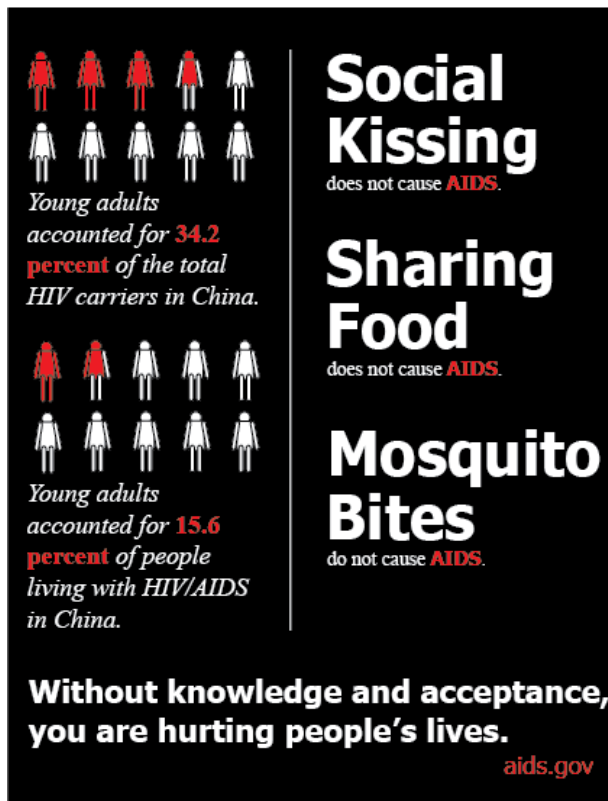
A lot

33.4 Does the posters above make you want to find out more information?

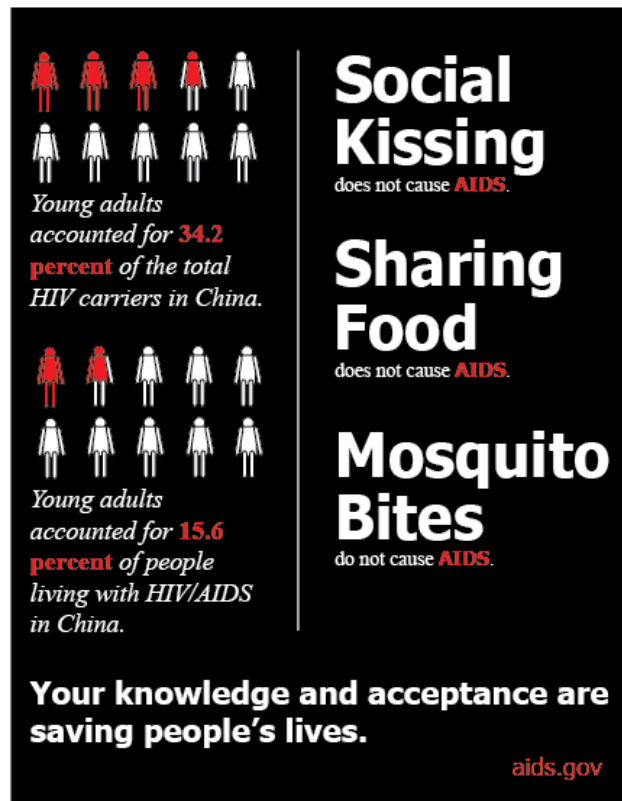
Not at all

A little

A lot



Poster 1



Poster 2

34.1 Which poster do you like?

Poster 1

Poster 2

Equal

34.2 Why do you like the poster?

Text Box

34.3 Do you trust the information on the posters above?

Not at all

A little

A lot

34.4 Does the posters above make you want to find out more information?

Not at all

A little

A lot

APPENDIX 5: POSTER IN TEXT

*In China, young adults ages 18-29 are at **high-risk** of being infected by HIV.*

*The number of students who are HIV positive or who are living with AIDS is **increasing**.*

Social Kissing
does not cause **AIDS**.

Sharing Food
does not cause **AIDS**.

Mosquito Bites
do not cause **AIDS**.

Without knowledge and acceptance, you are hurting people's lives.

aids.gov

Poster 1

*In China, young adults ages 18-29 are at **high-risk** of being infected by HIV.*

*The number of students who are HIV positive or who are living with AIDS is **increasing**.*

Social Kissing
does not cause **AIDS**.

Sharing Food
does not cause **AIDS**.

Mosquito Bites
do not cause **AIDS**.

Your knowledge and acceptance are saving people's lives.

aids.gov

Poster 2

POSTER IN TEXT AND NUMBER

*In 2007, young adults ages 20 to 29 accounted for **34.2 percent** of the total HIV carriers and **15.6 percent** of people living with HIV/AIDS in China.*

*The number of Chinese students infected with HIV increased by **24.5 percent** year-on-year.*

Social Kissing
does not cause **AIDS.**

Sharing Food
does not cause **AIDS.**

Mosquito Bites
do not cause **AIDS.**

Without knowledge and acceptance, you are hurting people's lives.

aids.gov

Poster 1

*In 2007, young adults ages 20 to 29 accounted for **34.2 percent** of the total HIV carriers and **15.6 percent** of people living with HIV/AIDS in China.*

*The number of Chinese students infected with HIV increased by **24.5 percent** year-on-year.*

Social Kissing
does not cause **AIDS.**

Sharing Food
does not cause **AIDS.**


Mosquito Bites
do not cause **AIDS.**

Your knowledge and acceptance are saving people's lives.


aids.gov

Poster 2

POSTER IN TEXT AND GRAPH



Young adults
accounted for **34.2**
percent of the total
HIV carriers in China.



Young adults
accounted for **15.6**
percent of people
living with HIV/AIDS
in China.

**Social
Kissing**
does not cause **AIDS**.


**Sharing
Food**
does not cause **AIDS**.

**Mosquito
Bites**
do not cause **AIDS**.


**Without knowledge and acceptance,
you are hurting people's lives.**

aids.gov

Poster 1



Young adults
accounted for **34.2**
percent of the total
HIV carriers in China.



Young adults
accounted for **15.6**
percent of people
living with HIV/AIDS
in China.

**Social
Kissing**
does not cause **AIDS**.

**Sharing
Food**
does not cause **AIDS**.

**Mosquito
Bites**
do not cause **AIDS**.

**Your knowledge and acceptance are
saving people's lives.**

aids.gov

Poster 2

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