ENTERTAINMENT EDUCATION AND GENDER: HOW DO THEY CONTRIBUTE TO THE PREVENTION OF TEEN AND UNPLANNED PREGNANCY?

By

MING LEI

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the thesis of MING LEI find it satisfactory and recommend that it be accepted.

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Chair

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Abstract

by Ming Lei
Washington State University
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Chair: Stacey J.T. Hust

Teen and unplanned pregnancies are urgent concerns of the U.S. The United States has the highest teen birth rates among all industrialized countries and the rate is currently rising. Meanwhile, unplanned pregnancy among young adults has become another concern because young adults have the highest unplanned pregnancy rate and the rate rose significantly from the past.

Previous research has shown that entertainment media in the U.S is high in sexual content. Further, exposure to such content is associated with risky sexual activities among young people, which may lead to higher teen and unplanned pregnancy rates. Existing literatures, however, also indicate the entertainment media in the U.S can be used as an effective vehicle to promote sexual health. In particular, a communication strategy named entertainment education has shown promising results in promoting health. Further, media research has documented gender differences in media selection and effects.

Therefore, the present study examined whether exposure to entertainment education would affect viewers' attitudes and behavioral intentions related to prevention of teen and

unplanned pregnancy. In addition, the study assessed gender differences as well as the interaction between gender and entertainment education in terms of prevention of teen and unplanned pregnancy.

The study was a posttest only with control group experiment. The participants of the study were 177 undergraduate students. The results of the study suggested that entertainment education had positive effects in prevention of teen and unplanned pregnancy. It stimulated open communication about sexual health issues among young people. The study also revealed gender differences. Female participants in general had higher motivation to avoid pregnancy and lower permissive sexual attitude than male participants.

The study also has practical implications. Media scholars and practitioners can use entertainment education to encourage open communication of sexual health, which is both needed and wanted by young people. Also, media scholars and practitioners should design media messages that are gender specific to better target males and females, respectively.

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Dedication

This thesis is dedicated to my mother, for her inspiration, laughter, and unique way of showing support.

CHAPTER ONE

INTRODUCTION

In 2007, the U.S teen birth rate increased for the first time since 1990 (Hamilton, Martin, & Ventura, 2007). This increase may signify the end of a decade-long decrease in the U.S teen birth rate, which should attract more attention to the problem. Even when teen sexual activity and pregnancy rates were declining, sexual health among youth in the United States was a major concern. Among all industrialized countries, the U.S had and still has the highest rates in teen pregnancy and birth (Hoffman & Saul, 2006). In comparison to France, rates in the U.S are almost four times higher (Teenagers' sexual and reproductive health, 2004). Additionally, 31% of young women become pregnant at least once before they reach age of 20 (The National Campaign to Prevent Teen Pregnancy Analysis of Teen Pregnancy Data, 2006).

Besides teen pregnancy, unplanned pregnancy is another pressing issue. In the United States, half of all pregnancies are unplanned and 54% of these unplanned pregnancies are experienced by women between ages 15 and 24. In fact, 81% of teen pregnancies and 60% of pregnancies among young adults (20 to 24 years old) are unplanned. Further, half of these pregnancies will result in an abortion or a miscarriage (Finer & Henshaw, 2006). Thus, unplanned pregnancy among teens and young adults is a salient issue that needs attention.

Unplanned pregnancy among young people has negative psychological, social, and financial consequences for young parents, their children, and society (Kirby, 1997; 2007). Teen mothers are less likely to complete school (Maynard, 1996). Only one-third of teen mothers receive a high school diploma and only 1.5% will get a college degree by age 30. Teen mothers are also more likely than their peers to have financial problems and more likely to end up on welfare (National Campaign to Prevent Teen Pregnancy, 1997). Teen fathers experience similar

problems. Teen fathers in general receive less education and have less income compared to their peers (Marsiglio, 1995). In addition, some studies have suggested that because teen fathers cannot fulfill the traditional breadwinner role in the household, they feel inadequate and have low self-esteem (Marsiglio, 1995). Some studies also indicated that those feelings of inadequacy and low self-esteem held by young fathers even made them more likely to dissociate themselves from childbearing (Anderson, 1989; Furstenberg, 1991).

Unplanned pregnancies among young people have negative impacts on their children as well. Studies have shown that two-parent households provide a better home environment than single-parent household in a number of ways (Waite & Gallagher, 2000; Parke, 2003). Yet, fewer than 8% of teen mothers marry the baby's father within one year of the childbirth (Child Trends, 2005). Children of teen mothers are more likely to have poor health, low cognitive development, and poor academic performance than other children (Maynard, 1996). Further, children who live apart from their fathers are five times more likely to be poor than the children in two-parent households. Boys and girls without involved fathers are twice as likely to drop out of school, twice as likely to abuse alcohol or drugs, twice as likely to end up in jail, and nearly four times more likely to need help for emotional or behavioral problems compared to children who are with involved fathers (Horn, 1998). In addition, children of teen mothers are exposed to greater risks of abuse and neglect (George & Lee, 1997).

Furthermore, unplanned pregnancies among young people have larger impacts beyond individuals. A study has shown that the sons of teen mothers are 13% more likely to end up in prison while teen daughters are 22% more likely to become teen mothers themselves (Maynard, 1996). These consequences will in turn affect various institutions in society such as health care, foster care, criminal justice, and public assistance. Discussing the impacts on these institutions is

beyond the scope of this study, but from a financial standpoint alone, teen childrearing costs taxpayers at least 9 billion dollars each year in direct costs associated with health care, foster care, criminal justice, and public assistance (Hoffman & Saul, 2006). This estimated cost does not include the loss in tax revenue and other costs that are indirectly associated with teen childrearing. Thus given the undesired consequences of teen and unplanned pregnancy and the possibility that the rate is rising again, it is crucial for individuals and society to invest more efforts to remedy the problem.

Studies have shown that media are related to attitudes about contraception and sexual activity – clearly media use is likely to be associated with pregnancy. A recent content analysis of sex scenes on entertainment television has shown that seven out of ten television programs contained sexual scenes. On average, there were five scenes per hour on entertainment television that involved sex. However, despite prevalent sexual content on television, very little content depicted any risk or consequence of sexual activity (Hust, Brown & L'Engle, 2008; Kunkel, Eyal, Finnerty, Biely & Donnerstein, 2005).

Besides content analyses, a number of studies have shown that exposure to sexually-oriented media have detrimental effects on youth's sexual attitudes and behaviors, which includes promoting permissive attitudes about premarital sex (Aubrey, Harrison, Kramer & Yellin, 2003; Bryant & Rockwell, 1994; Strouse & Buerkel-Rothfuss, 1995), early initiation of sexual intercourse (Brown & Newcomer, 1991; Peterson, Moore & Furstenberg, 1991), and increased probability of engaging in advanced sexual behaviors (Brown, L'Engle, Pardun, Guo, Kenneavy & Jackson 2006; Collins, Elliot, Berry, Kanouse, Kunkel et al., 2004). All these consequences may lead to a higher unplanned pregnancy rate among young people as well as an increased likelihood of young people contracting STDs.

However, entertainment media can also be used as a vehicle that conveys positive messages about sexual health. Although there are few television scenes that contain sexual health messages, a number of relatively recent studies have shown that embedded sexual health messages in entertainment media have positive effects on viewers' sexual attitudes and behaviors. Those positive effects include increased knowledge about condom use and increased interpersonal communication about contraception (Collins, Elliot, Berry, Kanouse & Hunter, 2003) and more positive attitudes toward condom uses (Farrer, 2001). Thus, empirical evidence has shown that incorporating sexual health messages in entertainment media has promising effects.

Additionally, media studies on gender have discovered that young males and females select different media genres and programs (Hust & Brown, 2008), and exposure to different genres and programs may lead to differential effects (Lanis & Covell, 1995; MacKay & Covell, 1997; Strouse & Buerkel-Rothfuss, 1995). Even when young males and females are exposed to the same media content, several studies have suggested there are still differential effects by gender (Aubrey et al., 2003; Ward, 1995, 2002).

Given that teen and unplanned pregnancy are urgent issues in the U.S and the mass media have the potential to convey pro-health messages, it is important for individuals and society to assess whether embedded sexual health messages in entertainment media can affect thoughts and attitudes related to the prevention of teen and unplanned pregnancy. Also, since gender differences exist in media effects, it is meaningful to take gender into account when examining the effectiveness of entertainment education in prevention of unplanned pregnancy.

CHAPTER TWO

LITERATURE REVIEW

Youth and Sexual-oriented Media

Recent studies have shown that on average youth in the United States spend 5 to 6 hours attending to mass media per day. In fact, on average young people spend more than three hours per day watching television alone (Roberts, Foehr & Rideout, 2005). Television viewing has even started gaining popularity among audiences age of 2 to 5 years old. These very young audiences on average spend slightly more than three hours a day watching television. In addition, scholars have suggested that youth are spending more time with television than directly interacting with their parents and teachers (Hofferth & Sandberg, 2001). Given that youth spend such a significant amount of time with television, it is not surprising that health practitioners and scholars have voiced concern about American youth's favorite pastime (AAP, 2006**).**

Besides the large amount of time young people spend with television, the nature of the content they are exposed to is a concern for society as well since television programs contain a large amount of sexual scenes. In fact, television programs include a greater amount of sexual content than almost all other media popular among young people, with the exception of music (Pardun, L'Engle & Brown, 2005). However, young people spend far less time (about 45 minutes per day) with music than they do with television (Roberts et al, 2005). A recent content analysis in 2005 revealed that sexual content was prevalent in prime time television and even more prevalent in shows that were most watched by teenagers (Kunkel et al., 2005). In general, 70% of prime time television shows contained at least one sexual scene and the viewers were exposed to five sexual scenes per hour on average if they were watching prime time television. Additionally, the average sexual scene per hour was even higher (almost seven scenes per hour)

among shows that were most watched by teenagers (Kunkel et al, 2005). Hence, it is no surprise that adolescents consistently refer mass media as important sources for sexual information (Brown, Halpern & L'Engle, 2004; Collins et al., 2004; Kaiser Family Foundation, 2003; Ward, 2003).

The television programs, however, at least present a distorted picture of sexual activities and at best present an incomplete picture of sexual activities. Despite the prevalence of sexual scenes on television programs, the consequences and responsibilities of sexual activities are rarely shown on the shows (Kunkel et al., 2005, Hust et al., 2008). Kunkel and his associates (2005) discovered that only 4% of all sexual scenes on television programs incorporated any message that mentioned consequences or responsibilities associated with sexual activities. In other word, for every one message that mentioned risks and responsibilities of sex there were 25 messages on television that glamorized sex or presented it in a risk-free fashion. Further, among all the television programs that had sexual content only 1% of them emphasized consequences and responsibilities of sexual activity. For all the programs that included sexual intercourses, 0% of them put an emphasis on consequences and responsibilities of sex. That is, literally not one single show that depicted sexual intercourses emphasized the consequences and responsibilities of it (Kunkel et al., 2005).

Despite the fact that the consequences and responsibilities of sexual activities are rarely shown on television programs, how the consequences and responsibilities are portrayed in television programs is another concern. A recent content analysis revealed that for all the messages that mentioned sexual consequences and responsibilities, which were already close to none, a good proportion of the messages were discussed with a humorous or embarrassing tone (Hust et al., 2008). Only half of the 1% messages that mentioned sexual risks and responsibilities

actually portrayed them in a positive and serious light. In addition, the mass media are also sending different messages to boys and girls in terms of sexual risks and responsibilities. They usually portray that boys are obsessed with sex and girls should be responsible for the prevention of pregnancy and STDs (Hust et al., 2008).

Media's Role in Sexualization

Churches, parents, schools, and peers are the traditional ways to learn about sexual attitudes and behaviors for young people. However, in today's society, given that young people spend a significant amount of time with entertainment television and it is filled with sexual content, it is not hard to image that they are getting sexual information, "tips", and "tricks" about romantic relationships from the media (Bachen & Illouz, 1996). Not only have the media become a common source to obtain sexual information for young people, it also has become an important one. The media are generally ranked as one of three most important sources for attaining sexual information, along with peers and schools (Amonker, 1980; Andre, Frevert, & Schuchmann, 1989; Thornburg, 1981). In a relatively recent study, teenagers even ranked media as the most important source for information on sexuality and sexual health (Kaiser Family Foundation & Children Now, 1997).

In addition, scholars have argued that media, television in particular, is now playing a major role in the "sex education" of young people (Brown & Steele, 1995; Huston, Wartella, Donnerstein, 1998; Strasberger, 1995) and is perceived as a "sexual super peer" by young people (Brown et al., 2004). That is, the media serve as a substitute source that they turn to for sexual and romantic information when the information is less accessible and straightforward to them from the traditional sources such as schools, parents, and peers (Ward, 2003). Therefore, media

play an important role in young people's romantic and sexual lives and have the potential to be a "good educator or peer" that convey sexual health messages to youth.

Some studies have shown that entertainment media have great potential to promote awareness of and increase knowledge about health issues. A survey of prime time TV viewers conducted by the Center for Disease Control and Prevention found that 52% of viewers reported that they picked up health information they trusted to be accurate in prime time TV shows. One out of four viewers considered these shows as important sources for health information (CDC, 2000). A vast majority of viewers (90%) reported learning something about a disease or how to prevent a disease from television. Among those viewers, half of them cited that they learned the information from prime time entertainment media (CDC, 2000). Furthermore, almost half (48%) of the regular viewers who heard a health issue on prime time television either relayed the information to others (42%) or suggested others to do something or did something themselves about the health issues (CDC, 2000).

Viewers who watch day time dramas, such as soap operas, have reported similar results. Almost half (48%) of the regular soap opera viewers stated that they have learned something new about a disease from watching soap operas. One-third (34%) of the regular daytime viewers reported that they also took action in their personal life after hearing about a health issue. These actions included telling others about the health issues (25%), telling others to do something to prevent the health problem (13%), visiting a clinic or doctor (7%), or doing something to prevent the problem themselves (6%). More than 40% of the regular soap opera viewers said they had asked their doctors about something they heard or read in the media (CDC, 1999). Not only did the regular viewers learned new information about diseases, more than one-third (38%) of them expressed that they would like to see more health storylines on television (CDC, 1999).

Social Cognitive Theory

Social cognitive theory (Bandura, 1994; 2001) is a well-established theory that provides the theoretical foundation of how individuals learn from the mass media. Social cognitive theory states that there are two basic modes of learning. People can either learn from direct experience or from observing others. However, there are some drawbacks of learning from direct experience. It can be tedious or even dangerous when the errors produce detrimental consequences and sometimes direct experiences are unavailable or less accessible than vicarious learning, such as young people learning about sex or sex related information. Thus, observing successes of and mistakes from others serves as a short cut and/or alternative source of learning from direct experience.

Observational learning can take place in real life, but it also can occur vicariously through mass communication such as watching television or movies. The ubiquity and accessibility of the media make it an excellent vicarious learning environment and it provides models from which viewers can learn and thereby potentially impact viewers' attitudes, beliefs, and behavior (Bandura, 1994; 2001). In addition, studies have suggested that viewers are more likely to pay attention to media models that are similar to themselves. The similarity can be as simple as the media models having the same gender and similar age as the viewers. Also, it is suggested that viewers are more likely to pay attention to the media models that are desirable, such as physically attractive, financially well-off, or powerful models (Bandura, 1994; 2001). Consequentially, by attending more closely to the media models similar to themselves, it increases the likelihood that viewers will retain the information on attitudes expressed or actions performed by the media models. Better retention can then enhance the probability of viewers to adopt those attitudes or behaviors themselves. Further, if the media models are rewarded for their

attitudes and actions, the viewers are more likely to model the attitude and behavior. Conversely, if models are portrayed as being punished by their attitudes and behavior, viewers are less likely to adopt them.

Additionally, observational learning can also enhance self-efficacy. Self-efficacy is a key component in social cognitive theory. It is the belief that one can adequately take certain actions and those actions are capable of producing desired effects. (Bandura, 1997; 2001). Once the self-efficacy is enhanced, individuals are more likely to adopt the attitudes and take the actions. For example, young people are more likely to pay attention to young media models that are similar to themselves. Observing similar media models consistently using condoms and producing rewarding consequences will enhance self-efficacy of young people in terms of using condoms. Consequently, enhanced self-efficacy will increase the confidence that young viewers can take the same action as did the media models, which in turn makes young viewers more likely to adopt the attitude and/or behavior.

Social cognitive theory has been successfully utilized in plenty of entertainment media interventions on a variety of social issues such as health promotion, family planning, gender equality, domestic violence, education growth, and environmental conservation (Singhal & Rogers, 2004). For example, in the *Soul City* media campaign in South Africa, several television episodes were incorporated with scripts about domestic violence based on social cognitive theory to educate people about preventing and stopping domestic violence. One vivid example is when a husband was physically abusing his wife, the neighbors gathered around the house and started banging pots to censure this type of behavior. Amazingly, after being exposed to the episodes, the viewers actually started banging pots collectively as a way to censure abusers in their neigbhorhood, the exact behavior portrayed in the show. In addition, the evaluation of the *Soul*

City campaign reported that people who were exposed to the show were more likely to say that domestic violence is not a private affair and women should not put up with it. Highly exposed audiences were also more likely to disclose abusive experiences and were more likely to reflect on how to stop abusive behaviors. Thirty-six percent of the viewers had stimulated conversations and discussions about domestic violence, and 14% of them did something to stop domestic violence after watching the show (Singhal & Rogers, 2004).

Social cognitive theory has also been used to explain the relationships between media exposure and sexual attitudes and behaviors. In a survey study conducted by Brown and Newcomer (1991), the researchers found that the total amount of television viewing along was not related to the likelihood of having sexual intercourse among adolescents. However, the results indicated that high television exposure in conjunction with exposure to high sexual content television programs were correlated with greater likelihood of having sexual intercourse among adolescents.

A recent longitudinal study revealed similar findings as well (Collins et al., 2004). The study controlled adolescents' sexual experience at the baseline as well as a host of other factors during the study. The results suggested that the viewers who were highly exposed to sexual media content, in which sex was portrayed as risk-free and rewarding, were twice as likely to initiate sexual intercourse as the viewers who had low exposures. Heavy viewers of sexual media content also appeared to be 2 to 3 years older in terms of sexual attitudes and behaviors in comparison to light viewers. Further, the results of the study also indicated that exposure to portrayals of sexual risks in media delayed sexual behaviors among African-American youths.

A recent experimental study revealed similar relationships between exposure to sexual media content and sexual attitude and behaviors as well (Ward & Friedman, 2006). The results

suggested that exposure to specific stereotypes in media increased the endorsement of the corresponding stereotype among the participants. The participants who were exposed to a video clip that portrayed women as sex objects consequentially had stronger endorsement on the statement that women are sex object. The study also demonstrated that greater exposure to sexual prime time television programs was associated with greater support of stereotypical gender roles and of the notion that sex is recreational. In addition, the participants who had stronger connections with the main characters in television shows reported greater frequency of modeling the activities featured in the television shows.

Gender and Media

From a biological standpoint, gender is typically dichotomized as male or female based on differences of chromosomes and genitalia. However, this definition does not include the situations such as when one is born into one sex but wish to live as the opposite sex, or one is biologically female but identifies herself as male more. Thus, gender can also be defined as socially constructed conduct regardless of biological characteristics of individuals (Hust & Brown, 2008). However, the concept of gender in this study is from a biological standpoint, and it is a binary variable categorized as male or female.

A number of media effects studies have taken gender into account. In general, gender effects can be categorized into three types. The first type is that men and women select different media genres and programs. The second one is that men and women are influenced differently by different media genres and programs. The third one is that men and women are influenced differently by the same media programs.

The first type of gender effects suggests that males and females attend to different media genres and programs (Hust & Brown, 2008). For example, a national survey among 8 – 18 years

old revealed that gender was a strong variable on genre selections. Considerably more girls than boys preferred to watch dramas, talk shows and educational programs. In contrast, boys showed more interest than girls did in sports and action-adventure programs (Robert, Foehr & Rideout, 2004). Similarly, another study conducted among early adolescents (12 – 14 year olds) confirmed significant gender differences in program selection. In the study, the researchers listed 150 shows and asked participants to choose the ones they watched on a regular basis, only four shows out of 150 were watched by a sizable proportion of both boys and girls (Brown & Pardun, 2004). Given that males and females select different media genres and programs, one can expect that media will affect males and females differently.

The second type of gender effects suggests males and females are influenced differently by different media genres. Although only a small amount of research has focused on this topic, existing literatures do suggest that different media genres impact males and females differently. For example, a number of studies have suggested that females are more likely than males to be influenced by sexual content on television, such as soap operas and music videos. Females in the studies were more likely than males to accept statements about sex permissiveness, traditional gender roles, and date rape (e.g., Strouse & Buerkel-Rothfuss, 1995; Strouse, Goodwin, & Roscoe, 1994). In contrast, males are more likely to be influenced by sexual content in magazines than females. Several studies have shown that sexual objectifying content of women in magazines led to a stronger acceptance of rape myth and sexual stereotypes among male college students than among their female counterparts (Lanis & Covell, 1995; MacKay & Covell, 1997).

The third type of gender effect is that males and females interpret and react to the same media content differently. That is, gender differences exist even when males and females are

exposed to the exact same media genres and programs. According to the reviews of gender difference in sexuality, men and women tend to hold different internalized sexual beliefs, or different scripts guiding their sexual attitudes or behavior (Gagnon & Simon, 1973; Reiss, 1986a,b; Marsiglio, 1988; Ward, 1995; Ward & Friedman, 2006). For instance, young men are more likely than young women to have causal sexual intercourses and they are more likely than women to have sexual intercourse with someone they do not know well (Cooper, Peirce, & Huselid, 1994; Manlove, Ryan, & Franzetta, 2003) or with a non-romantic partner (Manning, Longmore, & Giordano, 2002). Research also found that young males are more likely than young females to view virginity unfavorably (Spencer & Regan, 1996) and young males think that sexual activity is desirable as early in a relationship as possible, the more sex is better, and no opportunity of having sexual relationships should be wasted (Marsiglio, 1988). Conversely, young females generally are searching emotional bonding in sexual relationships, are more likely to connect sex with negative consequences, and believe that having sex is an opportunity to intimately know a person (Scales & Beckstein, 1982). In addition, the reasons why young males refrain from having sex are different than those of young females. Males are more likely to cite fear of STDs and pregnancy as the top reason to not have sex, but for females, not having strong enough feelings to their partners is the primary reasons to not have sex (Sugland & Driscoll, 1999).

Given that young males and females have different internalized views on sexuality, it is reasonable to think that young men and women will have differentiated interpretations on the same sexual media content. Some scholars (Aubrey et al, 2003; Ward, 1995; 2002) have suggested that television viewers will observe and acquire selective knowledge to develop and model their attitudes and behaviors that are appropriate to their sexual and gender identities

respectively. That is, men and women will have different reactions to media content regarding sexuality because they are trying to be consistent with their internalized, gendered sexual scripts. This may lead to different understandings and interpretations of what is sexually appropriate and desirable to each gender. Thus, some content or programs might work better for young men to promote sexual health and others for young women.

Although relatively little research has been done in this area, a few prior studies have found gender differences when exposed to the same media content. For example, Ward (2002) conducted an experiment among college students, the results suggested that female college students who were exposed to a sexual objectifying television clip were more likely to endorse the statement that women are sex objects than female students who did not watch the clip. To the contrary, this influence did not emerge among male college students. Exposure to the sexual content did not lead to stronger endorsement on objectifying women among college males. Media exposure only affected female college students. In another study conducted by Aubrey and her colleagues (2003), the researchers discovered that exposure to sexually oriented prime time television shows was associated with expecting a variety of sexual activities in a relationship for males but not females. However, exposure to the stimuli was associated with expecting earlier sex in relationships for females but not males. Therefore, some existing empirical evidence supports that there are gender differences when men and women are exposed to the same media content.

Entertainment Education

Entertainment-education is a communication strategy that purposefully integrates educational messages with entertainment content to promote pro-social changes (Singhal & Rogers, 2002). It can be employed to influence audience's knowledge, attitudes, and overt

behaviors regarding certain educational issues (Church & Geller, 1989; Cooper-Chen, 1994; Singhal, Rogers & Brown, 1993; Singhal & Rogers, 1999; Storey, 1998). This strategy has been applied to various media genres such as radio and television shows, popular music, and comic books and has been widely used in developing countries in Asia, Africa and Latin America. For example, entertainment-education has been implemented in countries such as India, Turkey, and Mexico to promote gender equality, family planning, adult literacy, and HIV/AIDS prevention (Kincaid, Yun, Piotrow & Yaser, 1993; Lettenmaier, Krenn, Morgan, Kols & Piotrow, 1993; Nariman, 1993; Piotrow, Kincaid, Rimon & Rinehart, 1997; Rogers, Vaughan & Swalehe,1997; Singhal & Rogers, 1999).

Entertainment-education has been used in the United States as well. In 1990s, the use of entertainment-education to facilitate pro-social changes in health communication started gaining recognition by researchers (Singhal & Rogers, 2004). Increasingly, it was employed in television programming to educate audiences on a variety of public health issues, including smoking cessation, encouraging condom use, and use of designated drivers (Singhal & Rogers, 1999; 2004). However, in the United States, entertainment-education is not used as extensively as in other countries and has not been implemented to the same degree as it has been internationally (Hust, 2006; Sherry, 2002). In the U.S, it is very unlikely to have an entire show or series dedicated to entertainment-education, and the common way to apply entertainment-education is embedding health promotion messages into television scripts in situational comedy, soap operas, and dramas (Tannen, 2003).

Several nonprofit agencies such as Population Communication International (PCI), the National Campaign to Prevent Teen and Unplanned Pregnancy, and the Media Project have collaborated with producers to incorporate health information into entertainment shows. Such

collaboration has produced a number of episodes with embedded health messages in a variety of television series. For example, *General Hospital* had storyline about promoting AIDS awareness; popular medical drama *ER* had episodes embedded with emergency contraception messages, and popular situational comedy *Friends* included pro-condom use messages in its episodes (Keller & Brown, 2002). Additionally, these organizations also provide help and resources for Spanish-language television in the United States and Latin America to develop scripts about sexual health (Kaiser Family Foundation, 2004).

Despite the growing collaboration between health organizations and Hollywood writers and producers about incorporating health messages into entertainment shows, few studies have evaluated the effectiveness of entertainment education TV programs. However, in the few studies that have evaluated the effectiveness of E-E strategy in television programs, most showed promising results. For example, during the 1997 – 2000 TV seasons, the Kaiser Family Foundation surveyed 3,500 regular viewers of the popular NBC drama *ER* after airings of several episodes in which some health messages were purposefully embedded. One episode included a script about emergency contraceptive methods. In the episode, a patient who was a victim of a date rape asked a doctor in the show what she could do to prevent pregnancy. The doctor told her that she could use emergency birth control pills to prevent that. After the airing of the episode, the survey found out that viewers were more likely to be aware that a woman has options for preventing pregnancy even after unprotected sex. The percentage of people who were aware of emergency contraception increased 17 % after viewing the episode (50% - 67%). For those who had already heard of emergency contraception, one in five (20%) said they had learned about it on *ER* (Brodie, Foehr, Rideout et al., 2001).

Similar results were found after another episode on the sexually transmitted disease human papilloma virus (HPV) was aired, the proportion of the viewers who had heard of HPV nearly doubled (from 24% to 47%), and the proportion who could correctly define HPV tripled (from 9% to 28%). For those who had already heard of HPV, one third (32%) stated that they had learned about it from *ER* (Brodie et al., 2001). Additionally, the survey also discovered that in general, slightly more than half of regular viewers obtained important health knowledge while watching *ER* the series (53%) and about the same amount of viewers (51%) said that watching *ER* stimulated interpersonal communication about the issue with their family and friends. Approximately one-third (32%) said the show provided helpful information while making choices about their own family's health care. 23% of the viewers pursued a health topic covered in the show from other sources for more detailed information. And 14% viewers contacted a doctor or other health care providers because of something they saw in the series (Brodie et al., 2001).

Meanwhile, a separate study from the Harvard School of Public Health showed that watching one *ER* episode about smallpox increased the awareness of the need for getting vaccination of diseases. The study compared a sample of regular *ER* viewers interviewed the week before an episode about smallpox prevention with a sample of regular *ER* viewers who saw or heard about the episode. After viewing the episode, more viewers were aware (57% vs.39%) of the need for getting a smallpox vaccination immediately after being exposed to prevent the disease (Kaiser Family Foundation, 2004).

Besides medical dramas, situational comedies have also been used as entertainment education programs. For example, a study assessed the impact of a storyline about an unplanned pregnancy among 12 – 17 year old teenagers who were regular viewers of *Friends* (Collins et al,

2003). The storyline was that a couple in the show faced unplanned pregnancy because condoms are only 97% effective. The survey found out people who watched that specific episode were more likely to recall that condoms are between 95% - 100% effective than people who did not watch that episode six months later (Collins et al, 2003). Some scholars would argue this was not a strict entertainment education program since it was not purposefully designed. However, it did include health promotion messages, though unintentionally, and was perceived to be effective.

Not only was entertainment education applied to different shows and various genres, it was also employed in large multimedia campaigns with television networks. In 1997, youth oriented network MTV partnered with The Kaiser Family Foundation and launched a multimedia campaign *Fight for your Rights: Protect Yourself* to reach youth on sexual health issues. A large part of the campaign was a series of specially designed entertainment programming that aimed to educate youth on issues such as having safer sex, promoting condom use and encouraging being tested for HIV and other STDs (Kaiser Family Foundation & MTV, 2003). In 2003, a campaign evaluation study found that the vast majority of people who were exposed to the campaign believed it had an effect. Among the definite campaign viewers, 93% stated that they agreed the campaign could help change how young people think about sexual health issues, including 44% who "strongly" agreed. Nearly two-thirds (63%) of people who saw the campaign reported that they learned something new from it personally. Specifically, among those who reported having learned something new, half of them learned something new about HIV/AIDS (47%) or other STDs (54%) and four in ten stated that they learned something new about the health risks of oral sex (43%).

In the meantime, people reported that the campaign made them more cautious about sexual intercourse regardless whether they had had sexual intercourse or not. For those who were

not sexually active at the time, two out of three (66%) reported that the campaign made them more likely to wait to have sex. For those who were already sexually active, more than two out of three said that the campaign influenced their attitudes and behaviors toward sexual intercourse. More than 70% of people said that the campaign made them more likely to take their sexual relationships more seriously and about the same percentage of people reported that they had taken some actions about sexual health, such as using condoms, talking to their partners about safer sex (69%), and getting testing for HIV or other STDs (65%). In addition, one in four of viewers reported visiting a doctor or other health providers for further information about a sexual issue because of the campaign and among those under 18, almost one –third (28%) reported having a conversation with a parent or other adult about a sexual health issue as a result of the campaign (Kaiser Family Foundation & MTV, 2003).

Overall, entertainment education has been applied in health communication and is perceived effective. However, little evaluation research, especially experiments on E-E television episodes or movies, has been conducted. Further, as far as the researcher is aware, no experiment study has tested the effectiveness of E-E on teen and unplanned pregnancy by gender. Thus the researcher would like to take both components into account. In the first set of hypotheses, the researcher expects that subjects who are exposed to E-E programming will have more positive attitudes toward teen and unplanned pregnancy prevention. The following hypotheses were proposed:

H1a: Participants who are exposed to E-E programming are more likely than those in the control condition to have enhanced self-efficacy in contraception use.

H1b: Participants who are exposed to E-E programming are more likely than those in the control condition to have increased motivation to avoid pregnancy.

H1c: Participants who are exposed to E-E programming are *less* likely than those in the control condition to hold permissive sexual attitudes.

The connection between the mass media and interpersonal communication has long been an interest to the field (see Southwell & Yzer, 2007). As a matter of fact, interpersonal communication plays an important role in the effects of mass communication. In general, interpersonal communication can be viewed as a direct outcome measure of mass communication, a mediator of mass communication effects, or a moderator of mass communication effects (Southwell & Yzer, 2007).

The present study regarded interpersonal communication as a direct outcome of mass communication (E-E, in this case). Stimulated interpersonal communication has been used to evaluate the effects of campaigns in the field of health communication. For example, Kelly and colleagues (1992) examined the role of interpersonal communication in a mass campaign for HIV prevention. The researchers concluded that interpersonal communication is an important tool of spreading and accepting the information. Similarly, in a campaign effort to curb the spread of HIV/AIDS in Thailand, the researchers found that interpersonal communication played an important in disseminating the information and increasing the credibility of the information (Svenkerud, Singhal, & Papa, 1998). Also, the aforementioned MTV/Kaiser Family Foundation campaign considered stimulated interpersonal communication as one of the outcome measure as well (Kaiser Family Foundation & MTV Networks, 2003).

Given that the importance of interpersonal communication and the fact that open communication has been documented as a protective factor of teen and unplanned pregnancy (Kirby, 2007), the following hypothesis was proposed:

H1d: Participants who are exposed to E-E programming are more likely than those in the control condition to discuss about sexual health.

In the second set of hypotheses, the researcher predicts that the male participants in the E-E condition will have more positive attitudes toward unplanned pregnancy prevention. According to social cognitive theory (Bandura, 2001), similarity between the media models and the viewers will increase viewers' attention, which in turn may increase the likelihood for viewers to model the attitude and behavior portrayed by the media models. Given that the stimulus in E-E condition were primarily focused on the male character and told the story from a male perspective, the male participants should resonate with the media model more than the female participants. Consequentially, it may lead to more positive attitudes toward teen and unplanned pregnancy for the male participants. Also, the researcher predicted that the male participants in the E-E condition would indeed perceive themselves to be more similar with the media model than the female participants. Thus, following hypotheses were proposed:

H2a: Male participants in the E-E condition will more likely have enhanced self-efficacy in contraception than female participants in the E-E condition.

H2b: Male participants in the E-E condition will more likely have an increased motivation to avoid pregnancy than female participants in the E-E condition.

H2c: Male participants in the E-E condition will *less* likely hold permissive sexual attitudes than female participants in the E-E condition.

H2d: Male participants in the E-E condition are more likely to discuss about sexual health than participants in the E-E programming condition.

H2e: Male participants in the E-E condition would perceive to be more similar with the main character than the female participants.

CHAPTER THREE

METHOD

A 2 by 2 (E-E Programming x Gender) post-test only with control group experiment was conducted to assess whether the entertainment education program as well as gender play a role in preventing teen and unplanned pregnancy.

Participants

Participants in the present study were undergraduate students who were enrolled in a large introductory communication class at a large university in the northwest of the U.S. Students participated in the study to earn credit toward fulfilling a research requirement in a class. The researcher first contacted the instructor to obtain permission for recruiting students. After the permission was granted, the researcher made an announcement about the study in the class and informed the students of available time periods for participation. The experiment was originally designed to hold a number of small sessions for five days. Each day there were two sessions available for students to participate. Thus, the students could attend any of ten sessions. However, due to other ongoing research activities in the class, the instructor recommended the researcher to stop recruiting students from the class once the minimum participation of the study was reached. The minimum participation of the study was 160 participants. That is, 40 participants in each cell. The minimum participation was reached on the fourth day. Therefore, the experiment sessions on the fifth day were cancelled. The rest of the students who wished to participate in research activities continued participation in other research activities in class to earn credit.

The sample consisted of 177 undergraduate students. The participants were randomly assigned to either the E-E condition or the control condition. 44.1% of the sample was male and 55.4% of the sample was female. This ratio closely mimics the gender break-down in the United

States. The rest of the sample (0.6%) did not answer the gender question. The average age of the sample is 19.4 years old, ranging from 18 to 28 years old. This fell into the age range identified by other studies as high risk population of unplanned pregnancy (National Campaign to Prevent Teen and Unplanned Pregnancy, 2007). The sample is made up of 57.6% freshmen, 18.1% sophomore, 12.4% junior, and 4.5% senior. The rest of the sample (7.3%) did not identify themselves with any of these grades.

Stimuli Selection

Two video clips that were approximately 45-minutes long were used in the experiment as stimuli. Both video clips were either taken or edited out from the existing television programs or movies.

The stimulus in the E-E condition focused on unplanned pregnancy and the storyline primarily concentrated on the male character. The video clip was edited out from the movie *Unwed Father*. The video clip preserved the entire storyline of the movie but edited out some details. The storyline in the clip is about a male college student who had a one night stand with a girl. A couple of weeks later, the girl found out she was pregnant. She tracked down the guy and asked him what they were going to do. The guy expressed that he could give her money but he was not going to take care of the baby. He also doubted whether the baby was really his since he perceived the girl to be promiscuous given that they had sex the first time they met. However, nine months later, he found his new born baby at his front door and he was forced to take care of the baby because the girl (the mother) has run away. He started taking care of the baby without much support from his family. He experienced hardships of being a single young parent and his life turned upside down. At last he realized that raising a child is a grown-up job and he is not

ready for that as a college student. This clip was selected because it portrayed realistic undesired consequences of unplanned pregnancy and the difficulties of being single young parents.

The stimulus used in the control condition was an entire episode from the television series *Law and Order*. The storyline of the episode focused on the investigation of a murder that involved a police detective and a former member of the Black Panthers in New York City. The detective was killed in the line of duty. All the evidence pointed to a former member of the Black Panthers as the perpetrator. The story became complicated because the Black Panthers was an organization known for promoting police killings in the civil rights movement. Therefore, the episode revolved around racism in its historical and present forms. The reason for selecting this episode was that the researcher wanted to have a stimulus that had minimum connection with sexual content, unplanned pregnancy, and childrearing.

The stimuli were pre-tested to assure that they were appropriate for the E-E condition and control condition, respectively. A small group of undergraduate students (n=14) from an upper division class was recruited for the pretest. The students participated in the pretest to earn extra credit for the class. The participants watched both stimuli in a university class room that was similar to the rooms used for the experiment. After the greetings, the researcher told them the purpose of the study was to share their opinions on the videos they were going to watch. The participants completed a short questionnaire after watching each video. Two sessions were held for the pretest. The first session had 10 participants and the second one had 4 participants.

The participants were asked to answer whether the video they just watched could be used in a sexual health campaign that was related to unplanned pregnancy. Given that sexual health E-E programming is similar in nature to a sexual health campaign, participants should think the E-E programming, *Unwed Father*, is more suitable for the sexual health campaign than the control

video, *Law and Order*. Data analysis for the pretest confirmed this. Paired sample *t*-test revealed that participants thought that *Unwed Father* ($M = 4.36$, $SD = 1.45$) was significantly more suitable as sexual health campaign material than the episode from *Law and Order* ($M = 1.27$, $SD = .26$), $t(13) = 8.55$, $p < .001$.

Participants in the pretest were also asked to answer whether the video they watched primarily focused on the male characters on a seven-point Likert scale. Data analysis also confirmed that the E-E programming in the study was indeed male-focused. One sample *t*-test compared the mean score of E-E programming ($M = 6.5$, $SD = .52$) with the neutral point ($M = 4$) of the item, the result indicated that the E-E programming was perceived to be significantly male focused, $t(13) = 18.02$, $p < .001$.

Procedure

In each session, the participants were randomly assigned to either the E-E condition or the control condition. The participants were first told to wait in one large room. As the participants came into the room, the researcher standing at the entrance of the room gave the participants either a yellow slip or a green slip of paper alternatively. If one participant received a yellow slip, the next participant would receive a green slip. After all the participants arrived, the researcher told them that for those who had a yellow slip, they should follow another researcher to another room for participation. For those who had a green slip, they should stay in the same room for participation. Thus, the students who received the yellow slips would go to the control condition and the students who received the green slip would stay in the E-E condition.

Participants were greeted and given an introduction by different researchers in each condition. Greetings and introduction were guided by the same protocol for all researchers. Consent was obtained after the greetings and introduction. Then the participants watched an

approximately 45-minute long video on a large screen in the room. In the E-E condition participants watched the video clip edited out from the movie *Unwed Father*. In the control condition participants watched an entire episode from the television series *Law and Order*. After watching the video, the corresponding questionnaire was given to the participants and they were asked to complete the questionnaire.

Measures

Motivation to avoid pregnancy: This measure was adapted from items provided by an extensive review on unplanned and teen pregnancy (Kirby, 2007). The review provided items that have been successfully employed in previous studies with sound reliability and validity. The scale included 13 items and asked participants questions on a seven-point Likert scale about perceived consequences of pregnancy and childbearing. Cronbach's α in the present study was calculated as .81.

Contraception self-efficacy: This scale was also adapted from items provided by the aforementioned extensive review on unplanned and teen pregnancy (Kirby, 2007). Similarly, the items provided by the review have been applied by prior research successfully. The scale in the present study included 13 items and asked participants to report on a seven-point Liker scale about self-efficacy related to using condoms or contraception. Cronbach's α in the present was calculated as .85.

Permissive sexual attitude: Sexual attitude was measured by the Hendrick Sexual Attitude Scale (Hendrick & Hendrick, 1987). The Hendrick Sexual Attitude Scale (HSAS) is consisted of four dimensions: permissiveness, sexual practice, communion, and instrumentality. The present study only adapted the scale from the permissiveness dimension. On the initial development, the permissiveness dimension had a Cronbach's α of .94 and has been applied to a

great number of studies since. The adapted scale included 20 items and asked participants questions about sexual attitude. Cronbach's α in the present study was calculated as .93.

Stimulated communication: The present study included three items that ask participants how likely they are going to talk to others about sexual health issues. The items were adapted from or constructed based on questions used in a collaborated campaign by the MTV network and the Kaiser Family Foundation (Kaiser Family Foundation & MTV, 2003). The questions used in the present study were "Please tell us how likely you are going to talk to your friends about a sexual health issue", "Please tell us how likely you are going to talk to your romantic partner about safer sex", and "Please tell us how likely you are going to look for information about a sexual health issue". Cronbach's α in the present study was calculated as .84.

Similarity: Similarity was measured in the present study by the Perceived Similarity Scale (McCroskey, Richmond & Daly, 1975). The scale consisted of four dimensions – attitude, morality, background, and appearance. The present study only adapted measures from one of the dimension: attitude. The scale consisted of four items. It asked the participants to answer questions such as, "X (the name of the character) thinks like me", "X behaves like", "X is similar to me in general", and "X is unlike me in general". Cronbach's α in the present study was calculated as .82.

Manipulation check: Given that the nature of entertainment education is similar to a campaign. The participants should think that the E-E program used in the study can be employed as a sexual health campaign material. The manipulation check asked the participants to answer the question "I think the video clip I just watched is suitable for a sexual health campaign related to unplanned pregnancy". The results of this question indicated that the manipulation check was successful. The participants in the E-E condition (M = 5.55 , SD = 1.56) thought the video clip

was significantly more suitable for a sexual health campaign related to unplanned pregnancy than the participants in the control condition (M = 1.38, SD = .97), t(142.49) = 20.66 , p <. 001.

The second manipulation check was to see whether the E-E program was perceived by the participants as male-focused. The participants were asked to answer the question "this video clip primarily focuses on the male characters". The result indicated that the participants did think the video clip was male-focused. One sample t-test compared the mean score of the participants (M = 5.94, SD = 1.35) on this question to the constant number 4 (the middle point of the item), and the mean score of the participants was significantly higher than the middle point, t(84) = 13.27 , p < .001.

CHAPTER FOUR

RESULTS

Preliminary Analyses

In general, participants in the study reported high motivation to avoid pregnancy (M = 5.51, SD = .97). The participants reported rather high contraception self-efficacy as well (M = 6.04, SD = .90). In the meantime, the participants did not hold a permissive sexual attitude in general (M = 2.60, SD = 1.14). However, they were not eager to discuss sexual health issues neither (M = 3.35, SD = 1.73). At last, the participants in the E-E condition did not perceive themselves very similar with the character in the stimulus (M = 2.56, SD = 1.19).

Data Analyses

The researcher started the data analysis by examining the normality of distribution for the four dependent variables. The result indicated that the distributions of two dependent variables, contraception self-efficacy and permissive sexual attitude, have severely violated the normality assumption to the extent that parametric tests are not appropriate to the data anymore. The distribution of contraception self-efficacy had a skewness value of - 6.49. The distribution of permissive sexual attitude had a skewness value of 3.63. Thus, Mann-Whitney U test was used in the data analysis for these two dependent variables in the first set of hypotheses. Mann-Whitney U test is a non-parametric test which does not assume the normality of distributions and it can be used as an equivalent test of t-test. It has an efficient rating of 97%, which means it is 97% powerful as its parametric equivalent.

The researcher ran zero-order correlation between the remaining two dependent variables, motivation to avoid pregnancy and stimulated communication. The purpose of running the correlation was to determine whether the univariate technique or the multivariate technique

should be used in the data analysis. The results of correlations indicated that the correlation between these two dependent variables were not significant. Thus, univariate General Linear Model (GLM) was employed to each dependent variable in the data analysis separately. Each outcome measure was entered as the dependent variable. Conditions and gender were entered as the fixed factors.

Hypotheses Testing

Hypotheses 1a predicted that participants in the E-E condition would have higher contraception self-efficacy than the participants in the control condition. This hypothesis was not supported. The researcher entered the variable contraception self-efficacy in Mann-Whitney U test as the dependent variable and the variable conditions as the independent variable. The result suggested that the participants in the E-E condition (Mean Rank = 89.67) did not score higher in contraception self-efficacy than the participants in the control condition (Mean Rank = 88.32), $U = 3856.50$, $p > .05$. But what was noteworthy was that the participants in both conditions scored quite high in contraception self-efficacy. The participants in the E-E condition had a very high mean score of 6.06 ($SD = .86$) out of a seven-scale and the participants in the control condition had a similarly high mean score of 6.02 ($SD = .94$). It seemed that the participants had already had high contraception self-efficacy regardless of whether they were exposed to the E-E program in the study or not.

Hypothesis 1b predicted that the participants in the E-E condition were more likely to have an increased motivation to avoid pregnancy than those who were in the control condition. This hypothesis was not supported. Univariate GLM was used to test the hypothesis. The results indicated that the conditions did not have a main effect on the attitude toward pregnancy prevention. That is, the participants in the E-E condition ($M = 5.49$, $SD = .95$) were not more

likely to have an increased motivation to avoid pregnancy than the participants in the control condition ($M = 5.53$, $SD = .99$), $F(1, 170) = .43$, $p > .05$. However, what was interesting was that the researcher once again observed that the participants in both the E-E condition ($M = 5.49$, $SD = .95$) and the control condition ($M = 5.53$, $SD = .99$) had rather high motivation to avoid pregnancy already, no matter whether they were exposed to the E-E program or not.

Hypothesis 1c predicted that the participants in the E-E condition would be less likely to hold permissive sexual attitudes than those who were in the control condition. This hypothesis was not supported. Mann-Whitney U test was used to assess the hypothesis. The researcher entered the variable permissive attitude as the dependent variable and the variable conditions as the independent variable. The result suggested that there was no significant difference between the participants in the E-E condition (Mean Rank = 80.56) and the participants in the control condition (Mean Rank = 89.60) in terms of permissive sexual attitude, $U = 3187.50$, $p > .05$. However, it is good to know that in general, both participants in the E-E condition ($M = 2.51$, $SD = 1.13$) and control condition ($M = 2.69$, $SD = 1.15$) were not sexually permissive as they both scored low on permissive sexual attitude.

Hypothesis 1d predicted that the participants in the E-E condition will more likely to start communication about sexual health than the participants in the control condition. This hypothesis was supported. Univariate GLM was employed to test this hypothesis. The result indicated that the participants in the E-E condition ($M = 3.78$, $SD = 1.60$) were more likely to start communication about sexual health issues than those in the control condition ($M = 2.98$, $SD = 1.80$), $F(1, 171) = 6.98$, $p < .01$.

The second set of hypotheses predicted gender differences within the E-E condition. In particular, the male participants would be affected more than the female participants by the E-E

program. Given that two dependent variables, contraception self-efficacy and permissive sexual attitude, were not normally distributed and non-parametric tests offer limited power for testing interactions, data transformations were applied to the two variables to improve normality for the use of parametric tests.

The square root transformation was applied to the variable permissive sexual attitude. After square root transformation, the value of skewness was reduced to 1.84. The natural logarithmic transformation was applied to the variable contraception self-efficacy. After the transformation, the value of skewness was reduced to 1.91. Both values are now below the conservative critical value of skewness (no greater than a value of 2), which means the parametric tests are applicable to the distributions. The reason why the natural logarithmic transformation was used on the variable contraception self-efficacy was the distribution of the variable was more skewed than that of permissive sexual attitude. Therefore, it required a more powerful transformation technique than the square root transformation.

Hypothesis 2a predicted the male participants in the E-E condition would have higher contraception self-efficacy than the female participants. This hypothesis was not supported. Univariate GLM was applied to test the hypothesis. The researcher entered the transformed variable contraception self-efficacy as the dependent variable and the variable conditions and gender as the fixed factors. The result suggested that there was no interaction between the conditions and gender, $F(1, 172) = .02$, $p > .05$. This indicated that there was no difference between the male participants and female participants within the E-E condition as well as the control condition.

Hypothesis 2b predicted that male participants in the E-E condition would have a higher motivation to avoid pregnancy than the female participants in the E-E condition. This hypothesis

was not supported. Univariate GLM was applied to test the hypothesis. The researcher entered the variable motivation to avoid pregnancy as the dependent variable and the variable conditions and gender as the fixed factors. The result suggested that there was no interaction between the conditions and gender, $F(1, 170) = .10$, $p > .05$. This indicated that there was no difference between the male participants and female participants within the E-E condition as well as the control condition. However, the result revealed that gender had a main effect on the motivation to avoid pregnancy. In general, female participants ($M = 5.72$, $SD = .96$) had a higher motivation to avoid pregnancy than did the male participants ($M = 5.23$, $SD = .91$), $F(1, 170) = 12.02$, $p < .001$, regardless whether they were exposed to the E-E program or not.

Hypothesis 2c predicted that male participants in the E-E condition would less likely to hold permissive sexual attitude than the female participants in the E-E condition. This hypothesis was not supported. Univariate GLM was applied to test the hypothesis. The researcher entered the transformed variable permissive sexual attitude as the dependent variable and the variable conditions and gender as the fixed factors The result suggested that there was no interaction between the conditions and gender, $F(1, 164) = .04$, $p > .05$. This indicated that there was no difference between the male participants and female participants within the E-E condition as well as the control condition. But the results also indicated that gender once again had a main effect. In general, the female participants ($M = 1.43$, $SD = .26$) were less likely to have permissive sexual attitudes than were the male participants ($M = 1.76$, $SD = .36$), $F(1, 164) = 45.21$, $p < .001$, regardless of exposed to the E-E program or not. One should bear in mind that the results were based on the transformed data. The differences between the points on the original scale have been reduced. Thus, the mean difference between males and females on permissive sexual attitude is not only .33 (1.76 minus 1.43) but larger in the original data.

Hypothesis 2d predicted that male participants in the E-E condition would be more likely to start communication than the female participants in the E-E condition. This hypothesis was not supported. Univariate GLM was applied to test the hypothesis. The researcher entered the variable stimulated communication as the dependent variable and the variable conditions and gender as the fixed factors. The result revealed that there was no interaction between the conditions and gender, $F(1, 171) = .16$, $p > .05$. This indicated that the male participants in the E-E condition were not more likely to have stimulated communication about sexual health issues than the female participants in the E-E condition.

Hypothesis 2e predicted that male participants in the E-E condition would perceive to be more similar with the main character than the female participants. This hypothesis was not supported. T-test was used to assess the hypothesis. The researcher entered the variable similarity as the dependent variable and gender as the grouping variable. The results indicated that there was no difference between males and females in terms of perceived similarity. The male participants ($M = 2.52$, $SD = 1.23$) in the E-E condition did not perceive themselves to be more similar with the main character than did the female participants ($M = 2.59$, $SD = 1.16$), $t(86) = -.25$, $p > .05$.

CHAPTER FIVE

DICUSSION

The present study assessed the effectiveness of entertainment education on prevention of unplanned pregnancy among young people. In particular, the study examined whether exposure to entertainment education would increase contraception self-efficacy and motivation to avoid pregnancy, decrease permissive sexual attitudes, and stimulate communication about sexual health among young people. The results of the study suggested that the exposure to the entertainment education program did stimulate communication about sexual health among young people, however, exposing to the E-E program did not increase contraception self-efficacy and motivation to avoid pregnancy nor did it decrease permissive sexual attitude among young people.

Out of four dependent variables, the E-E program only influenced one of them. Readers may tend to think that entertainment education is not effective on preventing unplanned pregnancy. The researcher, however, strongly encourage readers to look at the results from a different perspective. Prevention of unplanned pregnancy is influenced by a host of factors. Of all the factors, high contraception self-efficacy, high motivation to avoid pregnancy, less permissive sexual attitude, and open communication about sexual health have been documented as protective factors (Kirby, 2007). That is, increases in any of these factors would lead to a diminished likelihood of unplanned pregnancy. The exposure to the entertainment education program has increased the open communication about sexual health among young people, which in turn, decreases the likelihood of unplanned pregnancy among them. Hence, entertainment education is indeed effective on prevention of unplanned pregnancy because even the increases

in only one protective factor may spare the hardship of unplanned pregnancy for a great number of young people.

Further, although open communication, whether with a parent, sexual partner, or health care provider, is considerably beneficial to young people's sexual health, many young adults have a difficult time talking about sex and sexual health. A recent study revealed that 27% of young adults from age of 18 – 24 year old believed that condom use is a hard topic to bring up and the percentage is even higher for adolescents (Kaiser Family Foundation, 2003). Further, when young adults do discuss about condom uses, they perceive negative connotations associated with the discussion. Almost half (47%) of young adults believe if someone brings up the topic of condom uses, they will feel that the person is suspicious or worried about their past sexual history. Also, 44% of them believe if someone brings up the topic, they will become suspicious and worried about that person's sexual history (Kaiser Family Foundation, 2003). Therefore, first a good proportion of young adults feel uncomfortable talking about condom use. Second, young adults also perceive undesired consequences of discussing condom use. Given the situation, it is particularly beneficial to young adults that the entertainment education program in the study stimulated communication about sexual health for the population.

In addition, 41% of young adults expressed that they wanted to know more about how to bring up sexual health issues such as birth control and STDs with a partner (Kaiser Family Foundation, 2003). Thus, the entertainment education program had an impact on where is needed as well as wanted. Future entertainment education programs should focus on breaking down the barriers for young adults to talk about sexual health, correct misperceptions associated with the discussion of the topic, and create an atmosphere to facilitate the communication on the topic.

What is noteworthy is that even though participants did not perceive themselves to be similar with the media model, E-E still had an impact on stimulating open communication. This could be that E-E can directly affect participants without going through the variable similarity first. This, however, does not mean that similarity does not matter. Similarity may increase the magnitude of the effects. That is, if participants perceive themselves to be similar with the media models, the effects of E-E may be significantly larger and last longer.

Another explanation why the participants did not perceive themselves to be similar with the media model could be that the media model was portrayed in an abnormal and undesirable context. In another word, the dissimilarity between the participants and the media model was actually the dissimilarity between the participants and the situation in which the media model was portrayed not the media model himself.

The present study also assessed the effectiveness of E-E on contraception self-efficacy and motivation to avoid pregnancy. As far as the researcher is aware, the present study is the only study that employed true experiments to examine the effectiveness of E-E on those two outcomes in the U.S.

The results of the study revealed that exposure to the entertainment education program did not increase contraception self-efficacy and motivation to avoid pregnancy among participants. However, it is too early to conclude that E-E is not effective on changing contraception self-efficacy and motivation to avoid pregnancy. The participants in the study already had rather high contraception self-efficacy and motivation to avoid pregnancy, regardless of whether they were exposed to the E-E program or not. This may be the reason why entertainment education did not induce increases in either of the factors since there was little room to increase.

High contraception self-efficacy and motivation to avoid pregnancy observed in the study may be explained by the formal sex education adolescents received. Since 1988 the United States has gone through a significant expansion on sex education through formal institutions such as schools. In 1995, 97.7% of males from age 15 – 19 have received formal sex education through school and 93.5% of females from the same age range have received formal sex education through school (Lindberg, Ku & Sonenstein, 2000). The topics in sex education included both birth control and STD preventions. In 2002, 82.6% of males from age of 15 – 19 reported having received formal instructions before the age of 18 on "how to say no to sex" and 85.5% of females reported having received the same formal instructions (Abma, Martinez, Mosher & Dawson, 2004). In 2007, 89.5% of 9th to 12th graders reported that they were taught about AIDS and HIV infections in school (CDC, 2007). Therefore, by the age they enter college, they may have learned how to use contraception and they are aware that unplanned pregnancy is undesirable at this stage of their lives.

However, it does not mean that we do not have to worry about contraception use among young adults anymore. Although young adults expressed confidence in using contraception and believed that contraception is important during sexual activity (as observed in the study), the fact is that they do not use contraception consistently, which is the key to prevent unplanned pregnancy. According to the national survey of adolescents and young adults, only 57% of young adults (18 – 24 year olds) use birth control or protection all the time. In addition, 12% of young adults use withdrawal regularly as a form of birth control, which is not an effective contraception method (Kaiser Family Foundation, 2003). Thus, the focus of entertainment education programs to prevent unplanned pregnancy among young adults, such as college students, should shift to a different type of contraception self-efficacy, the self-efficacy that enables consistent

contraception use and correct contraception use rather than the mere confidence of using contraception.

In the mean time, the inconsistent contraception use among young adults may be due to the fact that many of them are not comfortable bringing up the topic of contraception use as well as almost half of the young adults perceived undesirable consequences of bringing up the topic (Kaiser Family Foundation, 2003b). Thus, if entertainment education programs can stimulate communication among young adults about sexual health issues, it may also indirectly increase the likelihood of consistent contraception use among young adults.

The results of the present study also revealed gender differences. In general, the female participants were less likely than the male participants to have permissive sexual attitude, regardless of whether they were exposed to the E-E program or not. The female participants also had higher motivation to avoid pregnancy than did the male participants, no matter whether they were exposed to the E-E program or not. These findings are consistent with the findings from previous studies about gender. However, what interesting here is that the E-E program used in the present study was designed to target at male young adults. The main character, storyline, and narratives all revolved around males. Yet the female participants still had less permissive sexual attitude and higher motivation to avoid pregnancy.

Unplanned pregnancy involves both males and females, so the question becomes how to reach and affect the male viewers. The result of the present study indicated that the male participants did not perceive themselves more similar to the male character than did the female participants. One possible explanation is that similarity is not only about physical appearance. As McCroskey and his colleagues (1975) proposed that similarity is at least consisted of four dimensions - attitude, value, background, and appearance. Perhaps for entertainment education

programs to influence viewers on attitudes and behavioral intentions, the media models have to be similar with the viewers on other dimensions, such as attitudes and values as well. Given that pregnancy is clearly associated with sexual activities and gender differences are salient in sexuality, to target male audiences the entertainment education efforts should be gender specific and focus on gendered sexuality associated with males rather than simply making the main character male. That is, increasing similarity on the dimensions such as attitude and value.

Many lines of research have demonstrated gender differences in sexuality. For example, Males think about sex more often, have more frequent sexual desire, and reported more frequent sex fantasies than females (see Baumeister, Cantanese & Vohs, 2001 for a review). Also, males are more likely than females to have causal sex and multiple partners (Laumann, Gagnon, Michael, & Michaels, 1994; Peplau, 2003). It is assumed by gendered sexuality that males will always want to have sex but it is dependent on females to decide whether a heterosexual couple will have sex or not. That is, the females are the "gatekeepers" to sex (Gagnon & Simon, 1973; Marsiglio, 1988; Reiss, 1986a,b). The notion that females are the only "gatekeeper" to sex transfers the majority of the responsibility (if not all) of sex to females, including unplanned pregnancy. In addition, the traditional gendered views associate females with childrearing primarily. Not only do females physically bear the children during pregnancy, they are also primarily responsible for taking care of the children after the birth (Haggstrom, Kanouse & Morrison, 1986; Hanson, 1994; Hoffman, 1977). Thus, the traditional gendered view about childrearing along with gendered sexuality further removes males from responsibilities of sex, especially for prevention of unplanned pregnancy.

Given the situation, for entertainment education programs to reach and affect males they should first construct messages based on sexual attitudes and behaviors that are prevalent with

males to increase similarity between media models and male audiences. For example, the media models in the entertainment education program can subscribe to "popular" male sexual attitudes and behavior, such as strong sexual desire and causal sex. This will increase similarity between the male viewers and male characters.

Once similarity is established or enhanced, there is an increased possibility to reach the target audiences with the intended messages via the media models. Then the efforts of designing the intended messages should target at gendered sexuality to combat the detrimental sexual attitudes and behaviors associated with males. For example, the intended messages could focus on educating young male adults that females are not the only "gatekeepers" to sex. Sex decisions are made mutually and the responsibility associated with sex should be shared by both males and females. Additionally, the entertainment education efforts should also promote a more egalitarian gender role. In particular, it should challenge the traditional gendered roles that pregnancy and childrearing are largely associated with females. By portraying responsibilities associated with sex as mutual and childrearing as both males and females' responsibility, it may educate males to get more involved with unplanned pregnancy prevention. Consequentially, it can reduce unplanned pregnancy rate as a whole. Thus, the key idea here is to use gendered sexuality to first get viewers attention, and then the messages should target at changing gendered sexuality that are detrimental to the prevention of unplanned pregnancy.

Limitation

Even though the present study has revealed some interesting results, it is not without limitations. First, the two instruments used in the study, contraception self-efficacy and motivation to avoid pregnancy, have been largely applied to adolescents but not young adults, such as college students. However, it is not to say that the instruments were only applicable to

adolescents. Traditionally, the efforts to prevent unplanned pregnancy were directed to the adolescents, and that may be the reason why the instruments rarely have been employed in college population. As the results shown, the participants in the study scored very high on both instruments, one alternative explanation could be that there was a ceiling effect. That is, the instruments were too "easy" for them. The instruments can reflect their self-efficacy rather precisely in contraception and motivation to avoid pregnancy when they were adolescents, but may not be as accurate when they are young adults. Because they have received more sex education and are in a different environment. Hence, the instruments became too general for them and may not reflect their attitudes as precisely as it used to be. Had the instruments been more relevant to young adults, the scores might have painted a different picture. Future studies should employ instruments that are more relevant to young adults.

Second, the variable similarity in the present study was only measured from one dimension, general attitude. The participants did not perceive themselves had the similar attitude as did the media model. Had the researcher measured similarity from physical appearance dimension, the male participants might have perceived themselves to be more similar with the media model than the female participants. However, the researcher doubts the similarity in physical appearance alone, without similarity in attitudes and values, will increase the effectiveness of the E-E program on prevention of unplanned pregnancy. Future studies should explore the relationships of similarity from different dimensions and how difference dimensions of similarity affect media effects.

Third, the present study used similarity to measure participants' responses to media models because of potential similarity within gender and differences between genders. However, similarity is but one of many ways in which audiences react to media models. Future studies

should include other types of responses from audiences to media models, such as identification, to further explore media effects. Unlike similarity, which requires one to compare and judge the media models based on his or her own attitudes, beliefs, and values, identification requires one to loss self-awareness temporarily and imagine being someone else (Cohen, 2001). Although similarity can start the process of identification between audiences and media models, similarity is not necessary for identification. Audiences can start identifying with the media models because of affinity, attachment, or desires of imitation (Cohen, 2001). Thus, it is interesting for future studies to examine how identification plays a role in E-E and how identification interacts with similarity and other types of reactions from audiences to media models.

Conclusion

The present study provided evidence to support that entertainment education is effective on preventing unplanned pregnancy. Exposure to the E-E program in the study stimulated communication about sexual health for the participants. Open communication is a protective factor to prevent unplanned pregnancy and it is beneficial to young people's sexual health. Further, open communication about sexual health is perceived to be difficult by many young people and they want more information on how to facilitate open communication. Thus, entertainment education can be a valuable strategy to help young people to prevent unplanned pregnancy.

In the mean time, the present study also lent support that entertainment education programs should utilize gender specific messages that are based on gendered sexuality males and females subscribe to, respectively. Further, entertainment education should also target changing gendered sexuality that poses risks for unplanned pregnancy prevention, such as males are more likely to have casual sex, females are the "gatekeepers" to sex and primarily responsible for

pregnancy and childrearing. On one hand, entertainment education must design messages based on gendered sexuality so the messages can resonate with the target audiences. On the other hand, it should also portray that some gendered sexuality are rather detrimental to young people's sexual health and aim at changing those attitudes and behaviors.

Further, future research should focus more on unplanned pregnancy among young adults. Historically, the efforts to prevent unplanned pregnancy have been primarily concentrated on the adolescents and teens, but now there are more and more concerns for unplanned pregnancy among young adults (women aged 20 – 24) since they have the highest rate of unplanned pregnancy among all other age groups and the rate raised by 11.1% since 1981 (National Campaign to Prevent Teen and Unplanned Pregnancy, 2007). The National Campaign to Prevent Teen and Unplanned Pregnancy has already started investing more efforts on preventing unplanned pregnancy among you adults and made it one of the missions of the organization. Yet, we need to realize that there are differences between adolescents and young adults. For example, significantly more young adults are sexually active than adolescents. Also, more young adults believe that alcohol and drugs interfere with their sex decision-making than did adolescents (Kaiser Family Foundation, 2003). Thus, when we employ interventions to young adults we should take into account the differences between adolescents and young adults. We should not simply copy the strategies used in adolescents' unplanned pregnancy prevention to young adults' prevention strategy. Future studies should explore and develop strategies that are more specific to the young adults.

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Table 1 Measures

	n	*M*	*SD*	*α*
Motivation to Avoid Pregnancy				.81
I am not emotionally ready to be a parent.	175	5.83	1.85	
I am not financially ready to be a parent.	175	6.58	1.16	
Being a young parent would make it more difficult to finish school.	175	6.82	.59	
Being a young parent would keep me from doing many things I like to do.	175	6.47	1.26	
Being a young parent would really mess up my life.	175	5.73	1.74	
If I got pregnant (or got someone pregnant), I would be very embarrassed.	175	5.05	1.92	
Getting pregnant at this time in my life is one of the worst things that could happen to me.	175	5.45	1.90	
* Having a baby to take care of would make me feel loved and needed.	175	3.44	1.91	
* If I had a baby, for the first time, I would have something that is really mine.	175	2.90	1.97	
* If I had a baby, I would never be lonely.	175	2.57	1.81	
* If I had a baby, my partner would be more committed to me.	175	2.57	1.73	
* If I had a baby, I would feel more like an adult.	175	3.43	2.17	
* If I had a baby, I would feel I had done something meaningful in life.	175	3.29	2.13	
Contraception Self-efficacy				.85
It would not be too hard for me to buy condoms.	177	6.08	1.71	
It would not be too hard for me to carry a condom and have it with me if I needed it.	177	5.98	1.75	
If I decided to have sex with someone, I am sure that I could talk to my partner about using condoms	177	6.26	1.31	
If I decided to have sex with someone, I am sure that I could get my partner to agree to use condoms.	177	6.44	1.09	

If I decided to have sex with someone but did not have a condom, I am sure that I could stop myself from having sex until I got a condom.	177	5.59	1.80	
If my partner refused to use condoms, I could refuse to have sex.	177	5.86	1.62	
If I decided to have sex with someone but did not have any form of contraception, I am sure that I could stop myself from having sex until one of us could get an effective method of contraception.	177	5.88	1.54	
I am sure that I could use a condom correctly.	177	6.49	1.14	
I am sure that I could use a condom correctly even when highly aroused.	177	6.36	1.19	
I am sure that I could use a condom correctly every time I have sex.	177	6.25	1.29	
I am sure that I could use a condom every time even with my girl/boyfriend.	177	6.03	1.58	
I am sure that I could use a condom even if I had drunk alcohol or used drugs.	177	5.28	1.78	
I am sure that I could take contraception consistently and correctly.	177	6.09	1.48	
Permissive Sexual Attitude				.93
I do not need to be committed to a person to have sex with him or her.	169	3.42	2.19	
Casual sex is acceptable.	169	3.36	2.02	
I would like to have sex with many partners.	169	2.57	1.88	
One night stands are sometimes very enjoyable.	169	2.98	2.04	
It is okay to have ongoing sexual relationships with more than one person at time	169	2.08	1.56	
It is okay to manipulate someone into having sex as long as no future promises are made.	169	1.56	1.13	
Sex as a simple exchange of favors is okay if both people agree to it.	169	2.61	1.99	
The best sex is with no string attached.	169	2.15	1.66	
Life would have fewer problems if people could have sex more freely.	169	2.50	1.81	
It is possible to enjoy sex with a person and not like that person very much.	169	2.72	1.85	

It is alright to pressure someone into having sex.	169	1.34	.86	
Unlimited premarital sexual experience is fine.	169	3.16	2.19	
Extramarital affairs are all right as long as one's partner doesn't know about them.	169	1.25	.66	
Sex for its won sake is perfectly all right.	169	3.84	2.29	
I would feel comfortable having intercourse with my partner in the presence of other people.	169	2.03	1.61	
Sex is best when people approach it as good physical release.	169	3.15	1.81	
Sex is more fun with someone you don't love.	169	1.86	1.24	
* Sex without love is meaningless.	169	4.53	2.07	
* People should at least be friends before they have sex.	169	4.90	1.82	
* In order for sex to be good, it should be meaningful.	169	5.22	1.80	
Stimulated Communication				.88
I am going to talk to my friends about sexual health issues.	175	3.17	1.87	
I am going to talk to my partner about safer sex.	175	3.83	2.05	
I am going to look for information about a sexual health issue through other sources.	175	3.05	1.85	
Similarity				.82
The character thinks like me.	177	3.33	1.60	
The character behaves like me.	177	2.65	1.41	
The character is similar to me in general.	177	2.53	1.41	
* The character is unlike me in general.	177	4.67	1.79	

[a] All measures are based on 7-point scales with 1 being strongly disagree and 7 being strongly agree.
[b] Items with an asterisk are reverse-coded.

Table 2 Motivation to Avoid Pregnancy

Descriptive Statistics of Motivation to Avoid Pregnancy

Condition	Gender	Mean	Std. Deviation	n
E-E	Male	5.16	.90	35
	Female	5.71	.92	53
	Total	5.49	.95	88
Control	Male	5.30	.92	41
	Female	5.75	1.01	45
	Total	5.54	.99	86
Total	Male	5.23	.91	76
	Female	5.73	.96	98
	Total	5.51	.97	174

Univariate General Linear Model (GLM) of Motivation to Avoid Pregnancy

Source	df	F	p
		Between Subjects	
Conditions	1	.42	.52
Gender	1	12.02***	.00
Conditions * Gender	1	.10	.75
		Within Subjects	
Error	170		
Total	174		

*p < .05. **p < .01. ***p < .001

Table 3 Contraception Self-efficacy

Descriptive Statistics of Contraception Self-efficacy

Condition	Gender	Mean	Std. Deviation	n
E-E	Male	5.97	.83	35
	Female	6.12	.89	53
	Total	6.06	.86	88
Control	Male	5.92	.94	43
	Female	6.13	.95	45
	Total	6.02	.95	88
Total	Male	5.94	.89	78
	Female	6.13	.91	98
	Total	6.04	.90	176

Table 4 Permissive Sexual Attitude

Descriptive Statistics of Permissive Sexual Attitude

Condition	Gender	Mean	Std. Deviation	n
E-E	Male	3.23	1.26	34
	Female	2.02	.71	51
	Total	2.51	1.13	85
Control	Male	3.20	1.20	40
	Female	2.22	.88	43
	Total	2.70	1.15	83
Total	Male	3.22	1.22	74
	Female	2.11	.79	94
	Total	2.60	1.14	168

Univariate General Linear Model (GLM) of Permissive Sexual Attitude

Source	df	F	p
		Between Subjects	
Conditions	1	.34	.57
Gender	1	45.21***	.00
Conditions * Gender	1	.50	.48
		Within Subjects	
Error	164		
Total	168		

[a] Analysis was based on the transformed data.

*p < .05. **p < .01. ***p < .001

Table 5 Stimulated Communication

Descriptive Statistics of Stimulated Communication

Condition	Gender	Mean	Std. Deviation	n
E-E	Male	3.37	1.59	34
	Female	3.96	1.56	53
	Total	3.73	1.59	87
Control	Male	2.79	1.70	43
	Female	3.17	1.88	45
	Total	2.98	1.80	88
Total	Male	3.05	1.67	77
	Female	3.60	1.75	98
	Total	3.35	1.73	175

Univariate General Linear Model (GLM) of Stimulated Conversation

Source	df	F	p
		Between Subjects	
Conditions	1	6.98**	.01
Gender	1	3.46	.06
Conditions * Gender	1	.16	.69
		Within Subjects	
Error	171		
Total	174		

*p < .05. **p < .01. ***p < .001

Table 6 Similarity

Descriptive Statistics of Similarity in Entertainment Education Condition

Gender	Mean	Std. Deviation	n
Male	2.53	1.23	35
Female	2.59	1.17	53
Total	2.56	1.19	88

The t-test Results of Similarity by Gender in Entertainment Education Condition

Source	n	t	p
Gender	86	-.25	.80