

**TESTING THE EFFECTIVENESS OF  
AN ENTERTAINMENT-EDUCATION  
HEALTH-FOCUSED SOAP OPERA:  
EXPOSURE AND POST-DISCUSSION IN  
COLOMBIAN YOUNG ADULTS**

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## ABSTRACT

Entertainment-Education interventions were evaluated using quantitative and qualitative methodologies to assess what specific variables may make communication strategy more effective. Variables including length of the Entertainment-Education serial drama and the post-viewing discussion sessions in their relation to cognitive, attitudinal and behavioral intentional outcomes were examined using experimental design and focus group discussions. It was concluded that the length of the Education-Entertainment serial drama did not produce significant change in the overall efficacy of the intervention. Overall the goal of this paper is to extend the research on a promising form of health intervention that has the potential to make the difference in our society.

**KEY WORDS:** Entertainment-Education, health focus soap opera, telenovela, communications strategy.

## RESUMEN

El proyecto de investigación evaluó vía estudio experimental y grupos focales de discusión diferentes intervenciones en Educación-Entretenimiento (Edu-Entretenimiento) para establecer qué variables específicas eran más efectivas en mejorar la estrategia de comunicación. En particular se exploró la variable extensión de la serie o telenovela utilizada y la incorporación de grupos de post-discusión después de la telenovela y su relación con las dimensiones cognitivas, actitudinal y de intención de comportamiento. El estudio halló soporte para la segunda asección: cuando se incorporaron sesiones de post-discusión a la serie de Edu-Entretenimiento se encontraron cambios significativos a nivel cognitivo, actitudinal y de intención de comportamiento. El objetivo de este artículo es extender la investigación sobre esta prometedora forma de intervención en salud que puede tener un impacto positivo en nuestra sociedad.

**PALABRAS CLAVE:** Educación - Entretenimiento, intervención en salud, telenovela, comunicación estratégica.

In recent years, mass media have become world wide popular sources of entertainment as well as health information, due in part to advances in technology and media penetration. Various studies have shown that people are exposed more often to health information through the mass media than they are to other traditional sources of information, such as physicians or health facilities (Signorielli, 1990, 1993; Wahl, 1995). However, health information provided by the media is not always accurate or educational. Research on health related-issues in the media has found that information is not only deceiving (Frost, Frank, & Maiback, 1997; Heeter, Perlstadt & Greeberg, 1984), inaccurate (Signorielli, 1993), and outdated (Turow & Coe, 1985) but it can also lead audiences to create false perceptions about different health-related topics (Rothblum, 1999; Vargas & DePyssler, 1999).

Among the public health-related topics that are inaccurately portrayed in the media, sexually activity has not only consistently increased in the mainstream media in the last three decades (Greenberg, Fernandez-Collado, Graef, Korzenny & Atkin, 1979; Kunkel *et al.*, 1999; Kunkel, Eyal, Finnerty, Biely, & Donnerstein, 2005), but it has also been misrepresented (Brown, 2002; Greenberg *et al.*, 1987; Keller & Brown, 2002; Kunkel, Cope-Farrar, Biely, Farinola, & Donnerstein, 2001; Larson, 1991). A content analysis conducted among American mainstream media found that the percentage of shows containing sexual intercourse had increased significantly in recent years: "Today 14% or one in seven shows have at least one scene in which intercourse is depicted or strongly implied, up from 10% two years ago and 7% four years ago" (Kunkel *et al.*, 2005)

Young people as media consumers learn a great deal about health issues from the media. The average American adolescent will view nearly 14,000 sexual references per year; yet only 165 of these references deal with birth control, self-control, abstinence or the risk of pregnancy or Sexually Transmitted Diseases (STDs) (Strasburger & Donnerstein, 1999). Ward (1995) argues that media messages suggest that sex is consequence-free, rarely planned, and

more a matter of lust than love. In a recent study, Kunkel et al., (2005) found that teens are more likely to watch sex on television than any other population of television viewers. Furthermore, Yankelovich Partners (1993) reported that adolescents rank the mass media third, behind friends and parents, as the source from which they learn about sex. This is particularly worrisome in regard to health education, as the media send mixed messages to youth that are more likely to compound risky sexual behavior rather than to teach safe sex practices.

Although mass media potentially could be a tool to educate young people about sexuality and safe sex because it can deliver health-related messages using language with which teens are familiar (Brown, 2002), they are not always used. Most analysts concur that the main goals of the mass media are to inform, educate, and entertain. However, due to its commercial nature, mass media tend to emphasize entertainment, often to the detriment of quality information and education. And although unsafe sex, unplanned pregnancy, and HIV/AIDS and STDs remain serious public health problems among youth worldwide, mainstream media are not fulfilling their role to educate and help to ameliorate this problem. As Signorelli (1993) cautioned,

Prime-time television, however, has not helped our young people by providing the information in terms of imaginary and characterization (role models) they need to develop the attitudes that will help them to protect themselves against unwanted pregnancy and/or sexually transmitted diseases (p. 54).

There are abundant empirical studies that suggest mass media could be used to influence audiences positively (Abdulla, 2004; Brown & Singhal, 1999; Kincaid, Yun, Piotrow, & Yaser, 1993; Storey, Boulay, Karki, Heckert & Karmacharya, 1999; Valente, Kim, Lettenmaier, Glass & Dibba, 1994; Vaughan & Rogers, 2000, Yaser, 2004). While television producers, film directors, and commercial networks rely heavily on *entertainment-*

*degradation*, which is the tendency to use crime, sex, and antisocial behaviors to increase audience ratings and generate greater profit, it is possible to include educational topics in entertainment programming without sacrificing commercial interest. In fact, evidence suggests that entertainment programs have been used successfully to promote family planning and sexual responsibility among young adults (Bankole, 1999; Coleman & Meyer, 1990; Rimon, 1990; Rogers *et al.*, 1999; Vaughan & Rogers, 2000).

Education-Entertainment (E-E), the process of purposely designing and implementing a media message both to entertain and educate in order to increase the audience's knowledge about an issue, to create a favorable attitude, and to change overt behavior (Singhal & Rogers 1999, p.9), has become an important communication strategy that could be used to address a variety of social and health issues. Currently, more than 50 countries around the world, including the United States, are using Education-Entertainment as a communication strategy to achieve various health or prosocial goals (Coleman & Mayer, 1990; Singhal & Rogers, 2002).

Although there is abundant research that suggests E-E could be an effective tool for promoting different social and health goals in different social contexts, there is still the need for more research that could help improve the quality of E-E interventions (Murphy & Cody, 2003; Rodriguez, 2005; Salmon, 2001; Singhal *et al.*, 2004). Two recent panels of experts sponsored by the Centers for Disease Control and Prevention (CDC) (Murphy & Cody 2003; Salmon, 2001), extensive scholarly publications (Greenberg, Salmon, Patel, Beck & Cole, 2004; Sherry, 1997; Slater & Rouner, 2002), government officials, health institutions, NGOs working on development (Kennedy, O'Leary, Beck, Pollard & Simpson, 2004; Piotrow *et al.*, 1997), and practitioners all have remarked on the importance of refining the research around this communication strategy in order to improve its efficacy.

The goal of this paper is to investigate what specific variables may be more effective in an E-E health-focus intervention. This

study investigates and documents how the length in terms of hours of a health-focused soap opera and the incorporation of a post-viewing discussion section might affect knowledge, attitudes, and behaviors among young adults in an E-E intervention that promotes sexual responsibility. The intervention is based on *Andrea: Time for Love*, an Entertainment-Education *telenovela* or television miniseries that was produced by John Hopkins University Center for Communication Program (JHU/CCP), in association with Iguana Production, a Peruvian television producer, the Ministry of Health of Peru, and the United States Aid International Development Agency (USAID). The entertainment-education *Andrea: Time for Love* focused on the prevention of teen pregnancy and modeling assertiveness for girls who encounter pressure from their partners to initiate sex. This research project addresses specific issues that have been highlighted as high-priority topics in the E-E research agenda advanced by an expert panel and leading researchers in this field (Salmon, 2001; Singhal & Rogers, 2002).

#### Entertainment-Education as communication strategy

The first mass media radio drama program that conveyed educational messages began in the mid 1940s. *The Lawson* in Australia and *The Archers* in England are considered the first radio serials that combined entertainment with education to promote agricultural innovations. Then in the 1960s in Mexico, Miguel Sabido started the first formal conceptualization of the Entertainment-Education strategy. Since then, the numbers of interventions and the scholarly and practical interest in E-E have grown tremendously. Today E-E is recognized as an important communication strategy that was initially assembled in a Latin America country, but is applied all over the world.

Education –Entertainment– is not a theory but a strategy to maximize the reach and effectiveness of health and prosocial messages through the combination of entertainment and education (Waisbord, 2001; Singhal and Rogers 1999). Although radio and television have been used in different ways as vehicles to carry educative messages, the E-E strategy differs from such an approach

in the sense that it appeals to the different entertainment forms such as narrative, music, humor, and performance to include educational messages. As Kincaid et al., (1992) clarifies, E-E strategy, “maximizes the exposure, liking, and recall of messages in a way that cannot be achieved by a straightforward didactic approach” (p. 5).

Entertainment-Education (E-E) was first applied in developing countries in radio and television soap operas dealing with health-related issues, where donors’ support was often provided, and where societies were not media saturated (Singhal & Rogers, 1999, p. 8). However, today E-E strategies have been used successfully all over the world (Kincaid, Rimon, Piotrow & Coleman, 1992; Piotrow, 1994; Brown & Singhal, 1999; Valente *et al.*, 1994). International organizations such as The Center for Communication Program at John Hopkins University (CCP/JHU), UNICEF, the BBC World Service, the Population Service International (PSI), and the Centers for Disease Control and Prevention (CDC) use this strategy as a part of their projects and interventions. CCP/JHU alone has conducted more than 125 E-E programs for public health interventions between 1986 and 2002 in over 40 countries (Piotrow & Fossard, 2004).

This research project has as its main theoretical tenet Bandura’s social cognitive theory. As a matter of fact, the serial drama or *telenovela* that was used in the intervention (*Andrea: Time for Love*) was written and produced based on social cognitive theory (JHU/CCP). The *telenovela* or miniseries used the theoretical elements of an Entertainment-Education soap opera, and, in particular, social cognitive theory (Bandura, 1997, 2004) to promote educational themes such as safer sex, delay of sexual intercourse, increase knowledge about fertility, and gender equality. In particular, the soap opera emphasizes social modeling through the main characters within the context of drama and entertaining plots and subplots.

John Hopkins University Center for Communication Program (JHU/CCP) and Iguana Production originally produced a five-episode *telenovela* or television miniseries. A condensed one-

hour version of the television series that focus on the main points of the story also was produced. Both the five-hour and the one-hour versions are used to promote educational themes through an entertainment series. Although both develop the same plot, the length of the series is the main difference.

This research project uses both versions of the entertainment miniseries *Andrea: Time for Love* to determine if the length of the E-E health focus soap opera may play a role in the overall efficacy of an E-E intervention. Similarly, this research project incorporates a post-viewing discussion session after the E-E health-focus soap opera for some groups and not others to determine if interpersonal communication when combined with mass media communication also affects the effectiveness of the intervention. Thus, the length of the miniseries and the incorporation of a post-discussion session are the two main variables that this study explores. The following sections explore conceptually the two specific independent variables in which this research project focuses on.

## POST-VIEWING DISCUSSION

The debate about whether mass media or interpersonal communication is more influential has been important in the history of communication research. The first conceptualization about the influence of mass media posited that they were powerful enough to achieve behavioral change and influence the masses' mind. *The Hypodermic Needle* or the *Magic Bullet theory*, as this first theoretical approach was called, marked the initial conceptualization of the mass media in the 20s and the 30s (Severin & Tankard, 2002; West & Turner, 2005). Events such as propaganda theory, the use of radio and film by the Nazis, and the impact of the radio program *The War of the Worlds*, directed by Orson Welles, helped to consolidate the notion of powerful media effects.

In the 40s a new mass media paradigm emerged. Lazarsfeld and his associates conducted the study aimed at investigating how influential was the media on people's political decisions. What



he found had enormous repercussion to communication research. First, Lazarsfeld and his associates found that mass media were not as influential as most people thought. Second, interpersonal communication was more important than mass media with regards to the decision to vote. Based on their findings, they advanced the Two-Step Flow Theory. Accordingly, opinion leaders use the mass media for information more than opinion followers do, and then the leaders pass on their opinions to the followers. Mass media messages reach masses in two steps: from media to opinion leaders and from them to the masses. Thus, interpersonal communication was considered more influential than mass-mediated messages.

Since the development of the Two-Step Flow Theory, scholars have highlighted the importance of incorporating interpersonal communication in health campaigns to achieve new knowledge, change attitudes, or adopt new behavior. Researchers such as Lazarfeld, Berelson and Gaudet (1968) considered that a combination of mass media and interpersonal communication were essential to achieve behavioral change. For them, media need the interpersonal channel in order to be really influential at a behavior level.

E-E interventions have included a combination of mass media and interpersonal communication as the best way to achieve cognitive, attitudinal, and behavioral change. As a matter of fact, some interventions have proposed to trigger interaction among the audience to achieve attitudinal and behavior change (Valente, Poppe & Payne-Meritt, 1996).

Today, the debate still continues. Some scholars have argued that mass media are effective at disseminating information and creating awareness about any issue, but that interpersonal communication is necessary for behavior change (Chaffe, 1982; Hornik, 1989). Nonetheless, different scholars pointed out that a well-designed mass media message could be enough to achieve behavior change (Hornik, 1989; Wallack, 1990). Different interventions have showed that media campaigns are more influential than interpersonal communication campaigns (Lettenmaier *et al.*, 1993; McDavitt *et al.*, 1997; Zimicki *et al.*, 1994).

This debate concerning the effectiveness of interpersonal versus mass media communication in health campaigns, also reaches the field of E-E research. Experts of the panel that were called together by the Academics and Non-Governmental Organizations who assembled the *Research Agenda for Entertainment Education* include as a high priority research question: *What effect does post viewing discussion have on the adoption of prosocial practice?* (Salmon, 2001). Therefore, the first hypothesis of this study is that exposure to an E-E soap opera plus post-discussion will produce a greater increase in knowledge, positive attitude, and intended behavior about sexual responsibility than exposure to E-E soap opera alone.

## EXTENSION

In their analysis of the research agenda for E-E, Greenberg et al., (2004) highlight five problems of E-E characteristics that require a sounder conceptual and empirical base. These are: 1) *The diet issue*, which refers to the portion of Education and Entertainment necessary in an E-E intervention. 2) *The amount issue*, which refers to the amount of health topic in the E-E program. 3) *The order of presentation issue*, which refers to whether it should start with the entertainment or the educative part of the E-E program. 4) *The repetition issue*, which refers to the repetition of the message while avoiding tedium or rejection. And 5) *The spread issue*, which refers to whether small or large doses of education are, preferable over short or long periods of time.

This research project is related to the second and fifth issues that Greenberg et al., (2004) highlight in the research agenda of E-E. *The amount issue* is a topic that requires scholarly attention. While there are entertainment programs that incorporate a few lines, or a secondary character that deals with the health or pro-social message of the E-E series (*Anita no Te Rajes*), there are entire Television shows or films exclusively devoted to a specific health or pro-social issue (*Soul City*). Greenberg et al., (2004) pointed out

that, “When change agents have control of message—as is not with commercial television shows—they must decide how big a message should be constructed. The tendency is to want as much as (or as big as) we can get, has yet to be validate in outcome measure” (p. 197).

On the other hand, whether to provide small or short doses of education over short or long periods of time is an issue that required scholarly attention. “If the writer had condensed this E-E material into a couple of episodes, then perhaps the audience would not be emotionally or cognitively involved. Spreading the issue over time, as in real life, sustained the storyline’s realism” (Greenberg *et al.*, 2004, p. 198).

Emphasizing the effects of social cognitive theory, the more the viewers are exposed to positive and rewarded prosocial behaviors the more likely they are to learn and enact that behavior. The more the audience is exposed to observing learning, the more social modeling could occur. Repeated exposure can have a reinforcing effect. Viewers who see behavior enacted often are more likely to learn from it.

E-E interventions have been applied in different formats (radio, theater, talk shows, and series) and lengths (one-minute PSA, long radio dramas, and short television series). The effectiveness of such interventions has been mixed. There have been effective short interventions (Singhal & Rogers, 1999). On the other hand, one can find many ineffective long interventions (Greenberg *et al.*, 2004; Singhal *et al.*, 2004). Although there is enough literature that reports on the effectiveness of such interventions, there are no studies that compare these two forms of interventions. Although it is possible to think that E-E intervention that uses a longer television serial could be more effective, empirical studies are needed to establish if the length of an E-E *telenovela* could play a role in the efficacy of the intervention. Thus, the second hypothesis is exposure to a longer E-E soap opera will produce a greater increase in knowledge, positive attitude, and intended behavior about sexual responsibility than exposure to a shorter soap opera.

This research project valued four E-E interventions via experimental design. Group A received a five-hour soap opera plus a post-discussion session. Group B received a five-hour soap opera alone. Group C received a one-hour soap opera session plus a post-discussion session. Finally, group D received a one-hour soap opera alone. Group E was the control group (See Table 2, p. 245). When the post-viewing discussion is held constant in both forms of intervention (Group A five-hour soap opera and Group C one hour-soap opera), it is reasonable to expect that the longer version (Group A) will be more effective than the shorter version (Group C). As was previously stated, when participants are exposed to the longer serial drama, they have more time to familiarize themselves with the positive role model. Likewise, they may have more time to develop the specific health problems. In addition, the post-viewing session may be more helpful for the participants to relate to the main points of the health issues that the *telenovela* dealt with. Thus, the hypothesis that is derived of this is: exposure to a longer E-E soap opera plus post-discussion will produce greater increase in knowledge, positive attitude and intended behavior about sexual responsibility than exposure to a shorter E-E soap opera plus post-discussion.

The two variables explored in this study regarding E-E interventions are the length of the E-E *telenovela* and the incorporation of a post-viewing discussion. While the length of the intervention and the incorporation of interpersonal communication may play a role in making a more effective E-E intervention, it is expected that the combination of both will result in a more effective intervention. Therefore, the final hypothesis is: exposure to longer E-E soap opera plus post-discussion will be the most effective intervention group with regard to knowledge, positive attitudes, and intended behavior about sexual responsibility.

## METHOD

### Experimental Design

The quantitative part of the project tested whether the length of an E-E health-focused soap opera and the implementation of a post-discussion session after the E-E soap opera have a better impact in influencing knowledge, attitudes, and intended behavior about sexual responsibility and reproductive health than any other form of intervention. A 2x2 factorial experiment was used to evaluate the E-E intervention. The independent variables were the length of the soap opera and the post-discussion session. Each independent variable had two conditions. With regard to the length of the intervention, there was a five-hour version of the soap opera and a condensed one-hour version. A post-viewing discussion session after the E-E *telenovela* was the other independent variable. A control group also was used in the study. Tables 1 and 2 show the factorial experiment design. The dependent outcomes were knowledge, attitude, and behavioral intention. The study had three phases: (1) pre-test (designated by a pre-test survey); (2) intervention (designated by viewing the Television miniseries or *telenovela Andrea: Time for Love* and in some cases for participating in post-discussion sessions); and (3) post-test (designated by a post-test survey). In addition, some participants did participate in focus group discussions.

**Table 1**  
Two factors (2x2) factorial design

GROUP	STIMULUS		
R	O1	X1A	O2
R	O3	X1B	O4
R	O5	X2A	O6
R	O7	X2B	O8
R	O9		O10

X1a = five-hour Entertainment Education soap opera

X1b = one-hour Entertainment Education soap opera

X2a = five-hour Entertainment Education soap opera plus post-discussion

X2b = one-hour Entertainment Education soap opera plus post-discussion

**Table 2**  
**Study design**

	POST – DISCUSSION	NO POST-DISCUSSION
5-HOUR SOAP OPERA	GROUP A	GROUP B
ONE-HOUR SOAP OPERA	GROUP C	GROUP D

**Control Group**

GROUP E
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### Participants

Four-hundred and four undergraduate students (n=404) were recruited from communication courses at two different universities, one in Colombia and one in the United States. One hundred and fifty students participated in the pilot study. The instrument was initially tested in English. One-hundred-fifty participants at a large Southeastern university took part in the pretest section. Two hundred fifty four participants took part in the actual experimental study.

### Stimulus Materials

The stimulus used in the intervention is a television drama series or *telenovela* produced by John Hopkins University Center for Communication Program (JHU/CCP) and Iguana Production in Peru that focused on the prevention of teen pregnancy and modeling assertiveness for girls who encounter pressure from their partners to initiate sex. The five-episode television miniseries *Andrea: Time for love* (*Andrea: Tiempo de Amar*, Spanish original) was produced in Spanish in Peru in a project supported by the Ministry of Health and USAID in 1997. A condensed one-hour version of the television series that focus on the main points of the story also was produced.

## Instrument and measures

Three scales were created to assess the impact of the intervention on knowledge, attitude, and behavioral intention. The same scales were applied during the first phase (pretest) and third phase (post-test) in all five groups (Group A, B, C, D and E, control group). *Knowledge*, A 10 item knowledge scale was used to measure the respondents' knowledge about fertility and sexual responsibility. This knowledge scale was constructed from the messages derived from the goals and the major themes of the *telenovela Andrea: Time for Love*. Seven of the 10 original questions were retained for the study. The knowledge scale used in the study was reliable ( $\alpha=.79$ ). *Attitude*, based on the goals of the miniseries *Andrea: Time for love*. Three types of attitudes measures were constructed: Attitudes toward condom's use (Cronbach alpha .74), attitude toward importance of birth control (Cronbach alpha .87) and attitude toward sexuality (Cronbach alpha .70). *Behavioral Intention*:, a six item behavioral intention scale was constructed to measure the behavioral intention of the respondent toward reproductive health and sexual responsibility issues (Cronbach alpha .84).

## Focus Groups

As the focus of this investigation is to gain a broader understanding of the elements that make more effective an E-E health focus soap opera, focus groups are the method chosen to triangulate the information gathered via experimental design. Eight focus groups were conducted with participants of all four types of interventions (Group A, Group B, Group C and Group D). There were two focus groups divided according to gender for each form of the intervention. The male-gender focus groups were conducted by a male expert in health communication with wide experience in group discussion. The female-gender focus groups were conducted by a female expert in health communication with wide experience in focus groups. The eight focus group discussions were taped and transcribed in entirety, and served as the focus of analysis.

## RESULTS

This section reports qualitative data gathered in the participant's focus groups and the statistical analysis of each of the four hypotheses as a way to offer a holistic perspective of the object of study. Initial analysis of the focus groups' discussion revealed that participants like E-E *telenovela* as a format that conveys educational themes, especially in regard to sexuality. When focus groups' participants were asked about the main message of the *Andrea, time for love*, they answered:

I like that this was an interesting way to learn. We were involved in the story but the story was providing elements from which we can learn. It is much better than hear from "an expert" how we should behave (Female, Group C).

The story is very interesting. It deals with a topic that is close to us, young people. The characters use a language that is like our language and it deals with sexuality from our own perspective (Male, Group B).

Hypothesis one predicted that Exposure to E-E soap opera plus post-discussion would be more effective with regard to knowledge, positive attitude, and intended behavior about sexual responsibility than exposure to E-E soap opera alone. This hypothesis was supported (See Table 3). One-way analysis of variance revealed the mean of knowledge ( $\underline{M} = .68$ ,  $\underline{SD} = 1.27$ ), the mean of attitude toward sexuality ( $\underline{M} = .68$ ,  $\underline{SD} = 1.31$ ) and the mean toward intended behavior ( $\underline{M} = .85$ ,  $\underline{SD} = 1.62$ ) for group A (5-hours miniseries plus post-discussion) and for group C (1-hour miniseries plus post-discussion) was significantly greater than the mean of knowledge ( $\underline{M} = .22$ ,  $\underline{SD} = .74$ ),  $p < .05$ , the mean for attitude toward sexuality ( $\underline{M} = .03$ ,  $\underline{SD} = .67$ ),  $p < .01$ , and the mean for intended behavior ( $\underline{M} = .15$ ,  $\underline{SD} .88$ ),  $p < .01$  for groups B (5-hours miniseries only) and D. Thus, E-E interventions that incorporate post-viewing session discussion increase the level of knowledge, attitude toward sexuality, and intended behavior to a significant level.



**Table 3**  
One-Way Analysis of Variance for Post-Discussion Variable

	POST DISCUSSION (GROUPS A & C)		NO POST DISCUSSION (GROUPS B & D)		F	SIG.
	MEAN	STDEV	MEAN	STDEV		
MEAN DIFFERENCE KNOWLEDGE	.68	1.27	.22	.74	9.213	.003*
MEAN DIFFERENCE ATTITUDE	.68	1.31	.03	.67	14.592	.000**
MEAN DIFFERENCE INTENDED BEHAVIOR	.85	1.62	.15	.88	19.243	.000**
* $p < .05$ . ** $p < .01$ .						

The importance of the post discussion was emphasized by members of both groups A (five-hour miniseries plus post-discussion) and C (one-hour miniseries plus post-discussion) in the qualitative data. The following quotes by group participants demonstrate the importance of the post-discussion session in the context of the interventions.

I think that it was a very good idea to have a post-discussion session after the TV show. This helped us to clarify some points that I think were not totally clear from the *telenovela* (Female, Group A).

According to some participants, the post discussion session reinforced cognitive elements presented in the intervention.

I saw in the story that the counselor told Andrea and Renzo that the unfertile day to avoid pregnancy are X number of days before and after the period. However, when we talked about it after the *telenovela*, it was clearer. Now I remember that they are 8 days (Female, Group A).

Hypothesis two predicted that exposure to a longer E-E soap opera with no post-discussion would be more effective with regard to knowledge, positive attitude and intended behavior about sexual responsibility than exposure to a shorter E-E soap opera with no post-discussion. This hypothesis was partially supported, but not

in the expected direction (see Table 4). The results revealed that the mean of knowledge ( $M = .26$ ,  $SD = .55$ ), and the mean of attitude ( $M = .15$ ,  $SD = .52$ ) for group B were not significantly different than the mean of knowledge ( $M = .19$ ,  $SD = .91$ ) and the mean of attitude ( $M = -.08$ ,  $SD = .80$ ) for group D (one-hour video alone). However, there was a significant change in the mean for attitude toward intended behavior ( $M = -.13$ ,  $SD = .78$ ), for group B and the mean for intended behavior ( $M = .43$ ,  $SD = .90$ ), for group D, however, not in the expected direction. Thus, hypothesis two was not supported. The longer E-E *telenovela*, in particular the five-hour serial drama, did not achieve more effective result at cognitive, attitudinal and behavioral intentional level than the shorter serial drama, in particular the one-hour television show.

Analysis of the focus groups discussion revealed that participants' description of the characters and the situations of the story were more elaborated in the groups that watched the five-hour episode.

**Table 4**  
 One-Way Analysis of Variance for Length Variable

	5 HRS – NO POST DISC (GROUP B)		1 HR – NO POST DISC (GROUP D)		F	SIG.
	MEAN	STDEV	MEAN	STDEV		
MEAN DIFFERENCE KNOWLEDGE	.26	.55	.19	.91	0.176	.676
MEAN DIFFERENCE ATTITUDE	.15	.52	-.08	.80	10.791	.099
MEAN DIFFERENCE INTENDED BEHAVIOR	-.13	.78	.43	.90	2.779	.001*
* $p < .05$ , ** $p < .01$ .						

In the first three episodes, we observed that Andrea is always happy and everything is going well with her. After her pregnancy, she starts facing problem after problem. It is like her pregnancy divided her life in two, according to the story. (Female, Group B)

If I have to evaluate Renzo, I would say that he is insecure. He is the typically spoiled boy. His mother is overprotective. He

never contradicts her whether he agrees or disagrees with what she says or does. When his mother argues with Andrea about the son's baptism, he supported his mother's decision, although Andrea was against it. (Male, Group B)

Although participants in the eight focus groups describe the most important characters, participants of groups A (five-hour miniseries plus post-discussion) and B (five-hour video, no post-discussion) make a more detailed description of secondary characters.

Daniel looks like the nerd who wants to impress his girlfriend. He poses like an intellectual. He is always talking about maturity, adulthood and stuff like that, but he is insecure. He only wants to have sex with Lily. (Female, Group A)

Renzo's father should be a stronger man. Renzo's mother is so dominant and he seems to be ok with that. He lets his wife take all the important decisions in their house. Renzo's mother dominates both Renzo and Renzo's father. (Male, Group B)

The longer *telenovela* version leads participants to identify specific characteristics of principal and secondary characters of the story. Likewise, they were more aware of the plots and subplots of the story. However, statistical analysis revealed there were no significant changes regarding knowledge, attitude and intentional behavior in sexual responsibility between both forms of interventions.

Hypothesis three predicted that exposure to a longer E-E soap opera plus post-discussion will be more effective with regard to knowledge, positive attitude, and intended behavior about sexual responsibility than exposure to a shorter soap opera plus post-discussion. This hypothesis was partially supported (see Table 5). Results revealed that the mean of knowledge ( $M = .1.0$ ,  $SD = .1.19$ )  $p < .05$  for group A (five-hour video plus post-discussion) was significantly greater than the mean of knowledge ( $M = .34$ ,  $SD = 1.28$ )  $p < .05$  for group C (one-hour video plus post-discussion.). However there were not significant differences between the means of attitude toward sexuality and intended behavior for groups A

and C. Therefore, when both groups have post-discussion session the length of the intervention may have significant change to a cognitive level.

Analysis of the focus groups discussion revealed that participants in group A (five-hour miniseries plus post-discussion) and C (one-hour miniseries plus post-discussion) mentioned that they learn from the television miniseries.

**Table 5**  
 One-Way analysis of Variance Length plus Post-Discussion Variable

	5 HRS – WITH POST DISC (GROUP A)		1 HR –WITH POST DISC (GROUP C)		F	SIG.
	MEAN	STDEV	MEAN	STDEV		
MEAN DIFFERENCE KNOWLEDGE	1.00	1.19	.34	1.28	7.297	.008*
MEAN DIFFERENCE ATTITUDE	.90	1.45	.46	1.32	3.027	.085
MEAN DIFFERENCE INTENDED BEHAVIOR	-.87	2.01	.83	1.13	0.015	.904
*p<.05. **p<.01.						

I did not know that a virgin would get pregnant. I also ignored that it could be problematic for a couple to negotiate the condom. Maybe for some I am an ignorant, but those who are not exposed to this kind of information, a television series like this one could be illuminating (Female, Group C)

Hypothesis four predicted that exposure to a longer E-E soap opera plus post-discussion will be the most effective intervention group with regard to knowledge, positive attitudes, and intended behavior about sexual responsibility. This hypothesis was supported (see Tables 6 and 7). Results revealed that the mean of knowledge for group A (five-hour miniseries plus post-discussion) ( $\underline{M}$  = 1.00,  $\underline{SD}$  = 1.19),  $p < .05$  was significantly greater than mean of knowledge for group B (five-hour-miniseries only) ( $\underline{M}$  = .26,  $\underline{SD}$  = .55),  $p < .05$ , for group C (one-hour miniseries plus post-discussion) ( $\underline{M}$  = .34,  $\underline{SD}$  = 1.28),  $p < .05$ ; for group D (one-hour miniseries

only) ( $M = .19, SD = .91$ )  $p < .05$  and for group E (control) ( $M = .20, SD = 1.5$ )  $p < .05$ .

Mean of attitude toward sexuality for group A (five-hour miniseries plus post-discussion) ( $M = .90, SD = 1.45$ ) was significantly greater than mean for attitude toward sexuality for group B (five-hour-miniseries only) ( $M = .15, SD = .52$ ),  $p < .01$ , D (1-hour only) ( $M = -.08, SD = .80$ ),  $p < .01$ , and group E (control) ( $M = .11, SD = 1.93$ ),  $p < .01$ . However, there was no significant difference in attitudes toward sexuality between Groups A (five-hour miniseries plus post-discussion) and C (one-hour miniseries plus post-discussion).

**Table 6**  
Two-Way Analysis of Variance Results

SOURCE OF VARIATION	D.F.	MEAN SQUARE	F	SIG. OF F
LENGTH	1	6.528	.6194	.014
POST-DISCUSSION	1	9.885	9.380	.003
LENGTH X POST-DISCUSSION	1	4.441	4.214	.041
ERROR	19	1.054		
TOTAL	199			

Note.  $R^2 = .094$  (Adjusted  $R^2 = .80$ ).

**Table 7**  
Mean Scores and Standard Deviations for Measures of Knowledge, Attitude, and Intended Behavior as a Function of Length of the Mini-Series and Post-Discussion Sessions

GROUP	KNOWLEDGE		ATTITUDE		INTENDED BEHAVIOR	
	M	SD	M	SD	M	SD
5-HOUR MINI-SERIES						
POST-DISCUSSION (GROUP A)	1.0	1.2	.90	1.4	.87	2.0
NO POST-DISCUSSION (GROUP B)	.26	.55	.15	.52	-.13	.78
1-HOUR MINI-SERIES						
POST-DISCUSSION (GROUP C)	.34	1.2	.46	1.3	.83	1.1
NO POST-DISCUSSION (GROUP D)	.19	.91	-.08	.80	.43	.90

Mean toward intended behavior for group A (five-hour miniseries plus post-discussion) ( $M = .87$ ,  $SD = 2.01$ )  $p < 0.5$  was significantly greater than mean toward intended behavior for Group B (five-hour-miniseries only) ( $M = -.13$ ,  $SD .78$ ),  $p < .05$ . However, Tuckey post-hoc comparison failed to find significant differences between the mean of intended behavior for groups C (one-hour miniseries plus post-discussion), D (one-hour miniseries only), and control E (control). Therefore, the longer E-E *telenovela* that incorporates post-viewing discussion is more likely to produce a significant increase in level of knowledge and attitude compared with all other forms of intervention. However, there was no significant change to a behavioral intentional level except in the no post-discussion five-hour *telenovela* group (group B). Thus, the hypothesis holds consistently for the outcomes of knowledge and attitude, but it is less stable for the behavioral outcome.

Participants in group A provide detailed description of what they learned from the characters.

I think that this is a good *telenovela* for young people. You learn from them without being bored. The characters are credible and play a role in the development of the story. And the post-viewing discussion allows us to remember key points of the story. (Female, Group A).

## DISCUSSION

The goal of this study was to investigate whether the length of an Entertainment-Education health-focused soap opera and the incorporation of a post-viewing discussion session played a role in the overall efficacy of an Entertainment-Education intervention. The effects of the Entertainment-education interventions were evaluated via pre and post surveys in an experimental design, as well as focus group discussions. A number of general findings were revealed. First of all, the length of the E-E dramatic *telenovela* did

not produce significant changes by itself in regards to knowledge, attitude or intended behavior. Second, the post-viewing discussion, when incorporated to an E-E intervention, did play a role in changing knowledge, attitude and intended behavior. Third, there is a length-post discussion interaction effect, but only for knowledge, and for attitude in some cases, but not for behavioral intent. In other words, the length of an E-E dramatic television show may produce effects at a cognitive level and in most of the cases at the attitudinal level when combined with post-viewing discussion. However, such an effect was not held constant in the behavioral outcomes. They were not effective in modifying behavioral intention of the participants.

Hypothesis one explores the role of post-viewing discussion in the context of the E-E intervention. This hypothesis, derived from previous literature, to test the notion that while mediated communication may produce cognitive change, interpersonal communication is necessary to achieve attitudinal and behavioral change. The findings seem to support such assertion. Data analysis gathered from the intervention indicated that the post-viewing discussion, when combined with the entertainment-education television serial drama, produced significant changes regarding the level of knowledge, attitude toward sexuality and intended behavior in both forms of interventions: the longer version (five-hour *telenovela*) and the shorter version (one-hour *telenovela*). Therefore, the E-E interventions were more effective when using post-viewing discussion. This is one of the most important findings of this study. The post-viewing discussion session played a role in the overall efficacy of an Education- Entertainment intervention.

Qualitative analysis confirms the importance of the post-viewing discussion. Participants in the focus group discussions mentioned that the post-viewing discussion sessions helped them clarify issues that were portrayed in the *telenovela* at a cognitive, attitudinal and behavioral level. As participants mentioned:

When we discussed all the issues of the *telenovela*, everything was clearer...The discussion leads me to have a better idea about

the issues that were being portrayed in the *telenovela* (Group A, Female).

I learned that I should be aware of what I am planning to do with my girlfriend... I don't want to have such bad luck as Renzo... I am now clear about the risk that we are exposed to when we don't do anything about it. I think that the conversation that we held at the end of the *telenovela* (Post-viewing discussion session) helped me realize that (Group C, Male).

In the debate on mass media communication versus interpersonal communication, the findings tended to show that a combination of both bring about much better results in health communication campaigns. While different literature support the notion that a mediated message could be enough on its own to achieve results in a health campaign (McDivitt *et al.*, 1997; Zimicki *et al.*, 1994), our data support the fact that when mass media are combined with interpersonal communication the intervention is much more successful.

However, it is important to contextualize this finding with regard to the practical aspects of any health intervention. For instance, this research project is based on a laboratory experiment study. One of the main criticisms of this method is its artificiality. Hornik (1989) questions whether the channel that has greater effects in the laboratory may not be the most effective in the field (p. 313). Hornik insists that the planner must focus on practical problems when organizing a health campaign intervention.

Although implementing interpersonal communication in the form of post-viewing discussion or face-to-face interaction with a health expert is desirable, it is not always up to the planners or the people who implement the intervention to make such a decision. Research in the field of agriculture extension suggests that 50 to 100 families per agent is an effective maximum ratio. Likewise, the field of nutrition/health communication may require a health facilitator for each 100 families to be effective. However, as Hornik (1989) clearly points out, "There are few countries that would be able to satisfy even one-tenth of these requirements" (p. 313).



Hypothesis two explores the length of the health-focused soap opera as a factor in the overall intervention. Results suggest that the length of the *telenovela* is not an aspect that makes an E-E intervention more effective. This hypothesis was not supported, indicating that the five-hour *telenovela* did not produce a higher effect in regards to knowledge, attitude and intended behavior than the one-hour *telenovela* in the context of an E-E soap opera intervention. However, it is important to underscore that the difference in length of time of the *telenovela* being compared in the interventions was from five hours in the longer intervention to one hour in the shorter one. Thus, this finding is related to this *specific* amount of time. This study did not explore what would happen to an intervention with a health-focus soap opera that would last longer than the five hours. There are E-E interventions that have run for decades; others have had more than 200 episodes.

Hypothesis three explores the fact that the length of the *telenovela* plays a role when both forms of interventions (five hour versus one hour) are using post-viewing discussion sessions. The hypothesis only found support regarding the cognitive level, but not at the attitudinal and the behavioral intentional levels. Therefore, when the post-viewing session is held constant in both forms of interventions (Group A five-hour mini-series and Group C one-hour mini-series), the length of the *telenovela* appears to produce a change in the cognitive level.

Hypothesis four predicted that among all forms of interventions the study was testing, the longer version that included the post-viewing discussion would be the most effective. The results showed that overall, this was the most effective form of intervention. The group that was exposed to the five-hour plus post-viewing discussion session (group A) produced significant changes with regard to knowledge and attitude toward sexuality compared to all other forms of intervention (group B, D, E), except for the one hour plus post-viewing discussion group (Group C).

Overall, this research project has as its principal finding the role of post-viewing discussions in an E-E intervention. When compared with the interventions that only used television drama,

the interventions that incorporated the post-viewing discussions produced significant change at cognitive, attitudinal and behavioral intentional levels. Thus, post-viewing discussions could be an essential component of an E-E intervention. Therefore, future E-E interventions may incorporate a post-discussion session in the form of interaction with outreach workers or health experts in order to improve their efficacy. Health communication campaigns that used the Education-Entertainment strategy may identify places such as schools, churches and clubs to incorporate discussion sessions. These facilitators may concentrate in highlighting the key issues of the mediated message and answer any questions that participants may have.

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