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Testing the Efficacy of a Computer-Based Parent-Adolescent Sexual Communication Intervention for Latino Parents

Antonia M. Villarruel, PhD, FAAN*,
University of Michigan, School of Nursing

Carol J. Loveland-Cherry, PhD, RN, FAAN**, and
University of Michigan, School of Nursing

David L. Ronis, PhD***
Department of Veterans Affairs, Ann Arbor, Michigan

Abstract

The efficacy of a computer-based intervention to increase parent-adolescent communication among Latino parents and adolescents was tested in a randomized controlled trial. Parents assigned to receive the 2-session intervention reported greater general communication, sexual communication, and comfort with communication at 3 month follow-up than did parents assigned to the wait-list control condition. Adolescents, whose parents received the intervention, reported higher sexual communication than did adolescents whose parents were in the wait-list control condition. Results provide support for the efficacy of brief parent interventions designed to maximize adolescent support systems. The acceptability of the computer-based format for an underserved population provides an important venue for the delivery and use of health information.

Keywords

Adolescents; Computer; Latino; Parents; Sexual Communication

Parents play a critical role in the lives of adolescents by guiding and shaping adolescent norms, attitudes, and behaviors related to sex and thus directly and indirectly affecting their adolescents' health. Parent-adolescent communication is a major factor that has been shown to influence adolescent sexual risk behaviors (DiIorio et al., 2006; Guzman et al., 2003; Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003; Kirby et al., 2004; McBride et al., 2005; Wu et al., 2003) and is especially relevant for Latino families. Latino youth are adversely affected by the consequences of early and unprotected sex. Studies have shown that Latino adolescents have higher teen birthrates than non-Hispanic Whites or Blacks, and higher rates of HIV/AIDS as compared with non-Hispanic Whites (Centers for Disease Control and Prevention [CDC], 2009; MacKay & Duran, 2007).

Correspondence concerning this article should be addressed to Antonia M. Villarruel, PhD, FAAN Associate Dean for Research and Scholarship, University of Michigan School of Nursing 400 N. Ingalls, Suite 4320, Ann Arbor, MI 48109-0482 (avillarr@umich.edu).

*University of Michigan, School of Nursing 400 North Ingalls, Suite 4320 Ann Arbor, Michigan 48109-0482 734-615-9696
734-647-0351 (fax) avillarr@umich.edu

**University of Michigan, School of Nursing 400 North Ingalls, #3347 Ann Arbor, Michigan 48109-0482 734-615-8209
734-647-0351(Fax) loveland@umich.edu

***University of Michigan, School of Nursing 400 North Ingalls, #4247 Ann Arbor, Michigan 48109-0482 734 764 9555
dronis@umich.edu

Despite the importance of parent-adolescent communication, studies consistently show that Latino parents rarely talk to their children about sexual topics, and when they do, the discussions are often initiated after sexual activity has begun (Hutchinson, 2002; Kaiser Family Foundation [KFF], 2006; Zambrana, Cornelius, Boykin, & Lopez, 2004). Although parent programs and interventions hold promise in reducing adolescent sexual risk behavior, only a few interventions have been designed or tested with Latino parents (e.g., Kirby et al., 2004; O'Donnell et al., 2005; Prado et al., 2007). The paucity of intervention studies targeting Latino parents, coupled with the vulnerability of Latino youth, indicates that a high priority should be afforded to the development of interventions to reduce sexual risk behavior for this significant population.

Recently, we conducted a randomized controlled trial in Monterrey, Nuevo Leon Mexico to examine the efficacy of a 6 hour intervention to increase parent-adolescent sexual risk communication among parents ($n = 791$) with adolescents between the ages of 13 and 17 years of age (Villarruel, Loveland-Cherry, Gallegos, Ronis, & Zhou, 2008). Results indicated that parents randomly assigned to the HIV risk-reduction intervention reported significantly more general communication ($p < 0.005$), more sexual risk communication ($p < 0.001$), and more comfort with communication ($p < 0.001$) than parents randomly assigned to a structurally similar health promotion wait-list control intervention.

In response to the overwhelming positive feedback from Mexican parents, as well as the supporting outcomes from this and other parent-adolescent communication intervention studies, we decided to modify our effective small group intervention to a computer-based format. Although the group intervention was efficacious, we wondered about the long term sustainability of implementing the intervention in clinical and community-based settings in the U.S., as well as throughout Mexico and Latin America. Because parents are an important source of support for adolescents, we wondered about the effectiveness, acceptability, and feasibility of a brief computer-based intervention for Latino parents. The purpose of this study was to examine the efficacy of a parent computer-based intervention, conducted in a community setting, with Latino parents to increase the general communication, sexual communication, and comfort communicating with their adolescents.

Computer-based Interventions for Latinos

Computer-based interventions designed to improve health hold many advantages. These interventions are cost-effective; help maintain confidentiality; decrease embarrassment about sensitive topics; and can be tailored to users' race/ethnicity, gender, and age (Rhodes, Fishbein, & Reis, 1997). In general, people have been found to have an overall positive attitude toward computer-based instruction (Evans, Edmundson-Drane, & Harris, 2000). Conversely, there is growing attention regarding the growth of health information via the computer and the Internet and the inequalities for minority and disadvantaged communities to access the information. For example, one study reports that among all ethnic groups, Latino families were the group least likely to own a computer and were less likely than Caucasian families to have Internet access at home (Calvert, Rideout, Woolard, Burr, & Strouse, 2005). Hispanics, more than any other racial/ethnic group, were also found to have never used a computer and were less than half as likely to have access to a computer at work (Cohall, Cohall, Dye, Dini, & Vaughan, 2004; McNeill, Puelo, Bennett, & Emmons, 2007). Other findings, however have shown computer ownership to be only a small factor contributing to computer access and use (McNeill et. al.) and, of those who do not own a computer, many are beginning to connect online and gain a basic understanding of computers through cell phones (Fox & Livingston, 2007).

Only a few studies have tested computer-based health education programs with Latino adults (Franko & George, 2008; Jantz, Anderson, & Gould, 2002; Jibaja et al., 2000; Ramirez & Mondragón, 2002). These studies have demonstrated the efficacy and acceptability of programs related to breast cancer (Jibaja et al.), coping with cancer (Ramirez & Mondragón), nutrition (Jantz et al.), and eating disorders (Franko & George); however, none were found that addressed HIV/AIDS or parent/adolescent sexual communication. More research is needed to examine the efficacy and acceptability of computer-based interventions with Latinos to increase access to efficacious health information.

Theoretical Framework

We used the ecodevelopmental theory (Szapocznik & Coatsworth, 1999) as an organizing framework to incorporate the individual, family, and cultural interrelationships addressed in the intervention. Ecodevelopmental theory (Perrino, Gonzalez-Soldevilla, Pantin, & Szapocznik, 2000) proposes that the family is the most fundamental system influencing human development and is an ideal system for influencing adolescent risk and protective behaviors. Parental interventions to build skills, improve self-efficacy, acquire information, and gain positive parenting practices provide the readiness needed for families to work effectively with adolescents in building healthy sexual behaviors and skills to prevent HIV/AIDS (Hutchinson & Wood, 2007; O'Donnell et al., 2005; Pequegnant & Szapocznik, 2000). Prado et al. (2007) found that parent and family interventions guided by the ecodevelopmental theory were efficacious and moderately efficacious in prevention of adolescent engagement in several risky behaviors, including unsafe sexual behavior. Prado et al. (2010) suggested further potential benefits for using this approach in the development of future adolescent HIV risk reduction interventions, including parent and family interventions.

Similar to the group-based intervention, strengthening parent-adolescent communication was the strategy selected as a focus for the computer-based intervention. The intervention used principles of the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and its extension, the Theory of Planned Behavior (Ajzen, 1985, 1991; Madden, Ellen, & Ajzen, 1992). In applying the Theory of Planned Behavior to parent-adolescent communication, the theory would imply that parents who intend to communicate with their adolescents do so because they have favorable attitudes toward talking with their adolescents about sexual issues, believe that significant referents would approve of them doing so, and believe they have the ability to communicate effectively with their adolescents (Villarruel et al., 2008). Parent-adolescent communication may in turn act as external influences that lead to changes in adolescents' sexual-risk-related beliefs, intentions, and behaviors (Hutchinson & Wood, 2007).

Consistent with findings from other studies (Guilamo-Ramos, Jaccard, Dittus, & Collins, 2008), the theoretical relationships between parental attitudes, beliefs, norms and parent-adolescent communication were supported in our original study evaluating the efficacy of a parent-adolescent communication group intervention among parents (Villarruel et al., 2008). Specifically, analysis to identify variables that mediated intervention effects revealed that communication self-efficacy and parent perception of adolescent approval had strong mediation effects for all communication outcomes (general communication, sexual risk communication, and comfort with communication), reducing the effects of the intervention on outcomes by 18–73% when they were statistically controlled. Prevention beliefs also had a strong mediation effect (63% reduction of effect of the intervention on the outcome of comfort with communication). Parent perception of adolescent approval had the strongest mediation effect of all normative beliefs across all communication outcomes. These findings

informed the development of the computer-based intervention developed and tested in this study.

Methods

Setting

The study was conducted with the Detroit Community-Academic Urban Research Center (URC), a collaborative partnership between the University of Michigan Schools of Public Health, Nursing, and Social Work and communities in East and Southwest Detroit. Specifically, we conducted the computer based program at a Latino community based agency in the area. The study was conducted in Southwest Detroit, an area with the largest concentration of Latinos in the state of Michigan. The majority (57%) of Detroit Latinos speak Spanish as their dominant language (U.S. Census Bureau, 2004). We posted fliers around the community and had an advertisement in the bilingual newspaper explaining the program and providing a toll-free number to contact the study team if they were interested in participating. Parents and adolescents were also recruited via personal contact and presentations made at schools; community-based programs, such as English as Second Language (ESL) courses; and health promotion courses.

Intervention

Prior to developing the computer-based version of the intervention, we developed a community advisory board (CAB) and conducted a focus group with Latino parents to identify issues that would affect the cultural appropriateness, content, feasibility, and acceptability of the program. Findings from the CAB and focus group revealed concerns about communicating with adolescents. For example, CAB and focus group members identified benefits (e.g., prevention of STDs, prevention of unwanted pregnancies, parents would feel closer to their adolescents) and concerns (e.g., fear that their adolescents would want to have sex) regarding sexual communication. Parents wanted correct information about sex and wanted to learn how exactly they should talk to their adolescents about sex.

Parents expressed concern about the computer format because they felt many Latino parents did not have extensive experience with computers. This confirmed our initial concerns with a computer based format and affirmed the need to both simplify the program and to provide support for parents during the program. We agreed that having parents come to a community center versus accessing the program on the internet or on a home computer would be more feasible. Further, it would provide the research team with an opportunity to observe and document difficulties with the program.

We obtained support and advice for aspects of the format (e.g., audio, parent-adolescent scenarios, visuals, type of characters and backgrounds to use) in order to make it culturally appropriate, appealing, and relevant to Latino parents. We also discussed recruitment strategies with the CAB and focus group members. Parents suggested we call the program *Cuidalos* – to distinguish it from the separate, but corresponding adolescent HIV/AIDS prevention education program, *¡Cuidate!* (Villarruel, Jemmott, & Jemmott, 2006).

The activities in the computer-based *Cuidalos* intervention are listed in Table 1. The parental intervention consisted of a 60 - minute intervention delivered via computer in two sessions (40 minutes and 20 minutes each), one per week. The computer-based intervention was similar to the original group-based parent intervention developed for Mexican parents, apart from being organized into 2 days. Guided by results of the previous efficacy study, we focused on activities that would build communication self-efficacy, including providing a strong baseline knowledge of pregnancy, STDs, and HIV/AIDS; opportunities for skills practice; as well as supporting normative beliefs that adolescents wanted and would approve

of communication with their parents about sexual topics. We also integrated results of focus groups and input from our CAB to guide the development of specific activities including case scenarios.

All content (including videos) in the two sessions was delivered via the computer. We used a number pad, versus a key board to further simplify computer use. The computer-based educational program was developed in Spanish, but at the request of participants during the study, we also offered the program in English.

First session. In the first session, parents were provided with an introduction about the program. Parents then viewed a video, a component of our corresponding program for Latino adolescents *¡Cuidate!*, which provides basic knowledge about HIV/AIDS, STDs, and unintended pregnancy, as well as issues regarding risky sexual behavior from the perspective of adolescents. The information was reinforced in an informational question and answer ‘radio show’ format in a later activity. We emphasized the importance of the family among Latinos and how communication about sexual issues assisted the development of adolescent values, attitudes, and behaviors, especially sexual behaviors. Challenges confronted by adolescents, including decisions regarding sexual behavior were presented. Finally, parents were provided with a mnemonic – based on the Spanish word *¡Cuidate!*, which means take care of yourself -to outline information that their adolescents need to know in order to make healthy decisions (e.g., C = communicate your values; U = strategies to resist sexual pressure, I = information about pregnancy, STDs, and HIV).

We presented suggestions on how to provide opportunities for parents to communicate with their adolescents. Parents were guided to identify ways to overcome barriers to communication (e.g., discomfort, unfavorable reactions from adolescents) by developing effective strategies to overcome communication barriers. Parents then utilized these strategies in the activity “what would you do?” by selecting responses that were a part of interactive, digitized case studies developed specifically for the program. Finally, parents were given “homework” to complete with their adolescents as a means of applying what they learned. The homework (i.e., printed instructions) included the assignments of discussing respective dreams and goals of parents and adolescents for their adolescents’ future, reviewing and discussing information about HIV/AIDS, and providing case scenarios to facilitate communication about adolescent concerns and parental values regarding sexual behaviors.

Second session—We planned for the second session to occur about one week after the first session. This allowed parents time to complete their ‘homework’ assignment. This second session built on general communication skills introduced in the first session and focused on developing and strengthening specific skills related to communication about sexual issues. Using computer-generated dialogs, parents reviewed myths and facts about the consequences of talking or not talking with their adolescents about sex. A mnemonic for effective communication, “DIRAS,” (e.g., be D =be Direct; R = give Reasons; A = provide Alternatives; S = Say how you’re feeling) was presented. Parents then viewed digital scenarios to evaluate if and how this technique was used to support effective communication. Finally, parents were provided with a list of potential resources that they could use to support themselves and their adolescents.

Procedure

Parents were invited to participate in *Cuidalos* – (take care of them), a program designed to help parents reduce health risks of adolescents, including unintended pregnancy and STDs, especially HIV/AIDS. In order to participate, parents needed to bring one of their adolescents, between the ages of 13 and 18 years, who were willing to complete pre- and 3-

month questionnaires. The program was designed for parents, to indirectly help all adolescents in their family, however only one adolescent per family as determined by the family, were administered the questionnaires. Interested parents and adolescents came to the community based agency and trained project assistants reviewed the consent and assent forms separately with parents and adolescents. The study was approved by the Human Subjects Committee at the University of Michigan.

Once consent and assent forms were signed, parents and adolescents were placed at separate computers at opposite ends of a dedicated room. Computers were placed to maximize privacy and to ensure screens would not be visible to others. Parents were able to select on the computer their language of preference (Spanish or English) for the questionnaires and program. In addition, parents were able to select for the questionnaire component, whether they wanted audio and visual or only the visual component.

After parents completed the pre-assessment questionnaire, they were randomly assigned by the computer to receive the *Cuidalos* program that day or a wait-list control condition wherein they would receive the *Cuidalos* intervention in 3 months. All parents were invited to return in 3 months to take a follow-up questionnaire and parents who were assigned to the wait-list control condition were able to view the *Cuidalos* program. All adolescents completed a pre-assessment questionnaire that was provided in only a visual format and only in English. Research assistants were available during questionnaire administration as well as throughout the program to provide assistance or address questions from parents or adolescents. Parents received compensation up to \$60; \$20 each for the pretest, 1 week, and 3 month follow-up assessments. Adolescents received up to \$40; \$20 for pretest and \$20 for the 3 month follow-up assessments.

Participants

A total of 130 parents and 130 adolescents participated in the study. The majority of parents were female (83%, $n = 107$); of Mexican origin (82%; $n = 106$); had a high school education or less (70%; $n = 84$); had a mean age of 39.26 years ($SD = 7.10$); and lived in the U.S. an average of 19.37 years ($SD = 12.38$). The majority of parents (61%; $n = 80$) reported Spanish was their dominant language with 78.3% ($n = 101$) of parents reporting speaking Spanish all or nearly all the time at home. The majority of parents (89%; $n = 115$) viewed the Spanish version of the program. In relation to adolescent participants, there was a slight majority of female adolescents (54%, $n = 70$) with a mean age of the 14 years ($SD = 1.5$). Only 6% ($n = 8$) of adolescents reported ever having sex (i.e., vaginal sex).

Parent and adolescent demographics for the experimental and wait-list control groups are presented in Table 2 and 3, respectively. Results of t-tests and chi-square analysis indicated there were no significant differences in demographic variables between the experimental and wait-list control group for either parents or adolescents ($p > .05$). The vast majority (i.e., 60% of experimental group; 68% of wait-list control group) were between 13–14 years. Retention at the 3-month follow-up was 93% ($n = 120$) for parents and 99% ($n = 129$) for adolescents. Similarly, there were no significant differences ($p > .05$) in retention for parents or adolescents between the intervention and wait-list control group.

Measures

The primary outcome measures for this study were general parent-adolescent communication, parent-adolescent sexual risk communication, and comfort with communication. Similar scales were used with parents and adolescents to measure general communication, sexual risk communication, and comfort with communication. Items were measured with 4 or 5-point Likert-type scales, with higher scores indicating more

communication or comfort when talking about sexual topics. These measures were previously translated, back translated, pilot tested, and modified in Spanish and were used in our previous studies with Mexican parents (Villarruel et al., 2008).

There were 10 questions regarding general communication between parents and adolescents (Barnes & Olson, 1982, 1985) (e.g., My mother/father tries to understand my point of view; I don't think I can tell my mother/father how I really feel about some things), eight related to parent-adolescent communication on sexual topics (Hutchinson, 1999; Hutchinson, 2002; Hutchinson & Cooney, 1998) (e.g., How much information has your parents shared with you about how they feel about your sexual conduct, how to avoid pregnancy, about STDs, about HIV/AIDS?) and nine about how comfortable parents or adolescents feel when talking about sexual topics (DiIorio, Kelley, & Hockenberry-Eaton, 1999) (e.g., How comfortable do you feel when you talk to your parents about how you should behave sexually, how to prevent pregnancy, STDs, HIV/AIDS?). Slight modifications were made in the scales in order to assess communication in the last 3 months. Reliabilities for the parent and adolescent versions of the instrument ranged from moderate ($\alpha = .67$ and $.87$ for parent and adolescent version of the general communication scale) to excellent ($\alpha = .93 - .96$) for all other scales. Parent and adolescent reports of general communication and sexual communication were significantly correlated ($p < .05$), although the correlation coefficients were low (general communication = $.36$; sexual communication = $.35$). Parent and adolescent reports of comfort with communication were not significantly correlated.

Statistical Analyses

To examine differences in general communication, sexual risk communication, and comfort with communication between the computer condition and wait-list control condition at the 3 month follow-up, we used Analysis of Covariance (ANCOVA) with pretest scores used as covariates (Taylor & Innocenti, 1993). We conducted separate analyses to assess adolescent and parent perspectives.

Results

Effect of the Intervention on Parental Communication: Parent Perspective

Results indicate that for parents who used the computer-based intervention, all three forms of communication (i.e., general communication [$F(1, 116) = 4.48; p < .05$], sexual risk communication [$F(1, 116) = 22.03; p < .0001$], and comfort with communication [$F(1, 116) = 4.86; p < .05$] were significantly higher compared with the wait-list control group (see Table 4). Further, examination of means within groups indicates that general communication, sexual risk communication, and general communication significantly increased [$t(58) = 3.29, p < .01$, $t(58) = 7.53, p < .0001$, $t(58) = 3.89, p < .0001$, respectively] from pretest to 3 month follow-up in the computer intervention group.

Effect of the Intervention on Parental Communication: Adolescent Perspectives

As seen in Table 5, results indicate that for adolescents whose parents used the computer-based intervention, adolescents' perception of sexual risk communication [$F(1, 117) = 4.65; p < .05$] was significantly higher as compared with the wait-list control group. Further, examination of means within groups indicates that sexual risk communication significantly increased [$t(59) = .463, p < .001$] from pretest to 3 month follow-up in the computer intervention group. There were no significant differences in adolescents' perspective of general communication or comfort with communication between the groups at 3 months. Similarly, there were no significant differences between pretest and 3 month follow up scores on comfort with communication and general communication in the computer intervention group.

Discussion

Results of this randomized control trial provide evidence of the efficacy of a brief computer- and theory-based intervention designed to increase the quality and quantity of general, sexual risk communication, and comfort with communication between Latino parents and their adolescent children. In particular, participation in the *Cuidalos* parental communication intervention resulted in increases in the frequency of general communication, sexual risk communication, and comfort with communication as compared with those parents assigned to the wait-list control group. Further, adolescents of parents who participated in the *Cuidalos* program reported increases in the frequency of sexual communication as compared with adolescents whose parents were assigned to the wait-list control intervention. These results were significant at 3 months post-intervention.

Results of this study are important for several reasons. First, this study is the first randomized controlled trial of a brief parent sexual risk program developed specifically for Latino parents. It is only one of few interventions that have demonstrated efficacy with this underserved population. Second, results of this study are interesting in that both parents and adolescents perceived increases in sexual risk communication as a result of the intervention. In the original efficacy trial conducted with Mexican parents and adolescents, increases in the quality and quantity of parent – adolescent communication were significant only from the perspective of the parents (Villarruel et al., 2008). The fact that both parents and adolescents reported increased sexual communication indicates that the communication may have had a strong impact in the engagement of both parents and adolescents in the discussion.

Measures of general and sexual risk communication between parents and adolescents were low, but significantly correlated, and there was no correlation with comfort with communication. Not surprisingly, parents and adolescents did differ in their perceptions of increased general communication and comfort with communication. The findings are consistent with extant literature examining concordance in adolescent and parent results (Davis et al., 2007; Guilamo-Ramos et al., 2007), which have reported low correlations between parents and adolescents reports of similar communication. The discordant results often reflect different perspectives of the same behavior, and for those reasons, the use of parent and adolescents reports should be used. As applied to findings for this study, for example, parents might have felt more comfortable talking to their adolescents about sexual topics after completing the intervention. Adolescents may have perceived that their parents were uncomfortable with sexual risk discussions perhaps owing in part to the adolescents' discomfort with the topic.

Third, results of this study support the generalizability of results from the original efficacy trial (Villarruel et al., 2008). Although this intervention was significantly reduced in time, the concentrated time on core theoretical elements including knowledge about pregnancy, STDs, and HIV/AIDS; communication skill building; and supporting positive beliefs about sexual communication, resulted in similar increases in sexual communication between parents and adolescents. Finally, the acceptability and feasibility of using a computer-based format, even with those Latino parents who had very little prior computer use, holds promise for the use of this important technology not only for parent-adolescent communication, but also for a variety of health related and sensitive topics. Future research and dissemination efforts must take into account the accessibility of computers as well as internet access in private settings (i.e., home) as well as public settings (e.g., schools, clinics, libraries) in order to determine how computers can be a viable health supportive tool for Latino parents and adolescents.

Findings from this study should be considered in the context of several limitations. First, the effects of increased parent-adolescent communication on adolescent sexual behavior were not examined because the majority of adolescents were not sexually active. However, results from other studies support the effects of parent-adolescent communication in reducing adolescent sexual risk behaviors (e.g., DiIorio et al., 2006; Guzman et al., 2003; Hutchinson et al., 2003; Hutchinson & Wood, 2007). Second, the follow-up period from the time of the intervention was only 3 months. Consistent with studies examining similar intervention outcomes (DiIorio et al., 2006; Villarruel et al., 2008; Wu et al., 2003), a longer follow-up period (i.e., 12 months or longer) would be useful to determine the sustained effects of the intervention on parent-adolescent communication and sexual risk behavior, as well as areas that were not sustained and intervention components that would benefit from modification and further enhancement. Third, participants in this study were from a convenience community based sample and thus results may not be generalizable to other Latino parents. Future studies are needed with a more diverse sample of Latino parents. The effects of the intervention should be examined according to parent age and gender, adolescent age and gender, Latino ethnicity, acculturation level, different settings, as well as prior motivation and attitudes about talking with their adolescents about sex.

Despite these limitations, results of this study are an important contribution in developing ways to support parents in their efforts to reduce adolescent sexual risk behaviors. The feasibility and acceptability of a computer-based program opens many possibilities for delivering information and developing skills in a culturally and linguistically competent format and in a manner that is convenient for the parent. Although computer and internet access is a barrier for many Latino families, efforts are needed to both develop culturally effective programs using this format as well as to increase accessibility to this important communication tool. Finally, this program serves as a means to maximize one the most important support systems for adolescents – parents as – they deal with sexual decision-making.

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Table 1**Cuidalos Computer Based Curriculum**

Day	Activities	Focus
1	A. Welcome and program overview (Cuidate video)	Introduction/Knowledge
	B. Where do adolescents get information about sex?	Knowledge/Beliefs
	C. Teens today and why talking to parents is important for adolescents	Knowledge/Beliefs
	D. Challenges confronted by adolescents? (Characteristics Chart)	Attitudes/ Knowledge
	E. Why teenagers have sex	Beliefs
	F. Consequences of having sex. (Review and Video)	Knowledge/Beliefs
	G. Information about HIV/AIDS, STDs and Pregnancy (Radio Show)	Knowledge
	H. What your adolescent needs to know about sex ; <i>Cuidate!</i>	Skill building
	I. Strategies for effective communication with your adolescent	Skill building/Beliefs
	J. Overcoming obstacles to talking with your adolescents	Skill building
	K. What would you do?	Skill building
	L. Program review and overview of homework to be completed with your adolescent	Skill building
2	A. Welcome Back and brief review of Day 1.	Introduction
	B. Why parents don't talk to their adolescents (myths/facts)	Beliefs
	C. Using the DIRAS as a guide for effective communication	Skill building
	D. Using DIRAS (case studies)	Skill Building
	E. What's next? (resources)	Knowledge

Table 2

Parent Demographics at Pretest

Variable	Wait-list (Control) (n = 130)	Computer (Experimental) (n = 130)
	Mean (SD), %	Mean (SD), %
Gender		
Female	54 (83%)	54 (83%)
Male	11 (17%)	11 (17%)
Education		
< = HS	37 (57%)	47 (72%)
> HS	28 (43%)	18 (28%)
Primary Language		
Spanish	58 (89%)	55 (85%)
English	7 (11%)	10 (15%)
Years in the U.S.	18.53 (11.90)	20.23 (12.91)
Age	40.2.2 (7.22)	38.57 (7.0)

Note. Results of t-test and chi-square analysis comparing differences between experimental and wait-list control group = $p > .05$

Table 3

Adolescent Demographics at Pretest

	Wait-list (Control) (n =65)	Computer (Experimental) (n = 65)
Variable	Mean (SD), N(%)	Mean (SD), N(%)
Gender		
Female	38 (59%)	32 (49%)
Male	27 (41%)	33 (51%)
Ever Had Sex		
No	60 (92%)	62 (95%)
Yes	5 (8%)	3 (5%)
Age	13.9 (1.5)	14.2 (1.5)

Note. Results of t-test and chi-square analysis comparing differences between experimental and wait-list control group = $p > .05$

Table 4

Means and Standard Deviation of Communication Outcomes at Pretest and 3 Month Follow-up for Parents

	Wait-list (Control)	Computer (Experimental)
	M (SD)	M (SD)
Outcomes		
General Communication ^a		
Pretest	3.5 (0.62)	3.7 (0.55)
3 month follow-up	3.7 (0.54)	3.9 (0.60)
Sexual Risk Communication ^b		
Pretest	2.6 (1.15)	2.7 (1.18)
3 month follow-up	3.0 (1.11)	3.8 (0.86)
Comfort with Communication ^c		
Pretest	2.8 (0.86)	3.0 (0.89)
3 month follow-up	3.1 (0.76)	3.5 (0.65)

Note. Total Sample size (pre-test) for each group = 65; Total Sample Size (post-test) for each group = 60

^a Scale responses: 1 = disagree completely – 5 = agree completely

^b Scale responses: 1 = None - 5 = A lot

^c Scale responses: 1 = Very uncomfortable – 4 = Very Comfortable

Table 5

Means and Standard Deviation of Communication Outcomes at Pretest and 3 Month Follow-up for Adolescents

	Wait-list (Control)	Computer (Experimental)
	M (SD)	M (SD)
Outcomes		
General Communication ^a		
Pretest	3.2 (0.81)	3.6 (0.69)
3 month follow-up	3.2 (0.77)	3.6 (0.79)
Sexual Risk Communication ^b		
Pretest	2.4 (1.26)	2.7 (1.17)
3 month follow-up	2.6 (1.11)	3.1 (1.18)
Comfort with Communication ^c		
Pretest	2.2 (0.97)	2.7 (0.89)
3 month follow-up	2.3 (0.87)	2.9 (0.82)

Note. Total Sample size (pre-test) for each group = 65; Total Sample size (post-test) for each group = 60

^a 1 = *Completely disagree* – 5 = *Completely agree*

^b 1 = *None* - 5 = *A lot*

^c 1 = *Very uncomfortable* – 4 = *Very Comfortable*