

Prevention Strategies for HIV Infection Risk Reduction Among Hispanic/Latino Adolescents

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1. Introduction

Adolescence is defined as a “period of development characterized by biological, cognitive, emotional and social reorganization with the ultimate goal of adapting to the cultural expectations of becoming an adult” (Lerner & Steinberg, 2004, p. 16). It is also a developmental period associated with sexual debut as well as risk taking practices. Adolescents are in a stage of experimentation and exploration, and in a search of their sexual identity. The use of alcohol and other drugs enhances sexual arousal and performance, increments impulsive risk decision making, and may function as a stimulus for sensation seeking. These factors may synergistically increase the probability of unsafe sexual practices and illicit drug use (*National Institute on Alcohol Abuse and Alcoholism* [Robles 2004]). Despite HIV prevention efforts during the past decade, teenagers represent one of the fastest growing groups of newly HIV-infected persons. Sexual transmission accounts for most cases of HIV during adolescence.

The physiological, psychological, and social-cultural changes that take place during the adolescence period places this group of young individuals at higher levels of risk to get infected with HIV. These factors contribute to the increment of the newly acquired HIV infection seen among adolescents in developing and developed countries.

Hispanic/Latino adolescents have presented a high incidence of HIV infection for many years. Several research studies have examined the risk factors and scenarios among this group and have developed HIV prevention strategies to lessen HIV infections. Most of these studies have been evaluated within Hispanic/Latino populations residing in the United States. It is relevant to validate and confirm these observations in other countries around the world. However, it is important to develop and test interventions that are directed to address HIV infections among other Hispanic/Latino countries.

This chapter describes and analyzes the HIV epidemiology, HIV-related risk factors, and prevention strategies for Hispanic/Latino adolescents based on a literature review and our experience with “A Supportive Model for HIV Risk Reduction in Early Adolescent” (ASUMA Project). We will also discuss future implications for the development of strategies to address HIV prevention for Hispanic/Latino adolescents.

2. Epidemiology of HIV infection among Hispanic/Latino adolescents

The Human Immunodeficiency Virus (HIV) is a retrovirus transmitted by contact with blood and other body fluids usually via risky behavioral practices incurred during sexual activities, intravenous drugs use, and in the past with the administration of blood products. In 2008, an estimate of 33.4 million people, in which 2.1 million were children under 15 years old, were living with HIV worldwide (Joint United Nations Programme on HIV/AIDS [UNAIDS] & World Health Organization [WHO] 2009).

Teenagers represent one of the fastest growing groups of newly HIV-infected persons. In 2008, a global estimate of 430,000 new HIV infections occurred among children under the age of 15 (UNAIDS & WHO, 2009). Despite the number and extent of HIV preventive strategies, young people accounted for about 40% of all new adult HIV infections worldwide. (UNAIDS & WHO, 2009). For the vast majority of individuals, sexual relations begin in adolescence, in which the use of illicit drugs and alcohol function as mediators in the adolescents' engagement in sexual risky behaviors.

Until 2008, Latin America occupied the third position in HIV prevalence, accounting for 2 million persons living with HIV/AIDS (UNAIDS & WHO, 2009). UNAIDS and WHO (2009) reported an increase in the number of newly infected children from 6,200 children in 2001 to 6,900 children in 2008. The modes of HIV transmission varied according to the geographic location and the individual's social and cultural backgrounds. Men who have sex with men (MSM) is the predominant transmission mode in North and Latin America, Central and Western Europe, and Oceania; while heterosexual transmission is the highest transmission mode in Africa, Guyana, and in some countries in Central America and the Caribbean (Wilson, Wright, Safrit, & Rudy, 2010).

The Centers for Disease Control and Prevention (CDC, 2008) estimated that 1,106,400 adults and adolescents were living with HIV in the United States at the end of 2006. As of 2009, an approximate of 4.8% (551,455 cases) of the 1,108,611 AIDS cases in the U.S. were adolescents between the ages of 13 and 24 years (CDC, 2009). From 2006 to 2009, an increase in the number of HIV infections among adolescents and young adults living in the U.S. was reported (Centers for Disease Control and Prevention [CDC], 2009). In 2009, most HIV infections and the highest HIV infection rate (36.9 per 100,000 persons) were among persons aged 20 to 24 years (CDC, 2009). For the same year, the incidence rate of HIV infection in the group between 15 and 19 years in the U.S. increased from 9.6 per 100,000 in 2006 to 12.0 per 100,000 (CDC, 2009). Similarly, the incidence rates in the group between 20 and 24 years increased from 28.2 per 100,000 in 2006 to 36.9 per 100,000 in 2009 (CDC, 2009). On the other hand, the rates of adolescents and young adults with AIDS diagnosis increased from 1.9 to 2.2 per 100,000 in the age group between 15 and 19 and from 7.7 to 9.7 per 100,000 in the group 20 to 24 between the years 2006 and 2009 (CDC, 2009).

The CDC Youth Risk Behavior Surveillance System (YRBSS) conducted a survey among junior and high school students from public and private schools in the U.S. mainland and its territories. The 2009 survey results reported that 46.0% of U.S. junior and high school students had sexual intercourse; and among those, 34.2% reported being sexually active during the three months prior to the survey (CDC, 2009). The survey also revealed that twenty-one percent of sexually active students drank alcohol or used illegal drugs before their last sexual intercourse (CDC, 2009).

Furthermore, the number of Hispanic/Latino living with an AIDS diagnosis in the United States and its territories (including PR) increased since 1996 and continued over years until

2008 (CDC, 2008). Hispanic/Latino living in the U.S. had the second highest HIV infection rate in 2008 (CDC, 2008). Specifically, Puerto Rican born females and male adults held the second and third positions of HIV infections in the U.S. respectively. According to the 2009 YRBSS, Hispanic/Latino students, had the second highest prevalence of having sexual intercourse (49.1%), of which 14.2% reported having four or more partners during their lifetime, only preceded by African American students (CDC, 2009).

Until March 2011, the Puerto Rico HIV/AIDS Surveillance Office reported 43,100 cumulative HIV/AIDS cases in Puerto Rico where 50 cases were among adolescents aged 13 to 14 years old and 19,549 (45%) were among adolescents and young adults aged 15-34 years old. This fact indicates that many of these young adults were infected during adolescence since the median incubation between the HIV infection and AIDS diagnosis ranges between 4 to 10 years. In PR, the highest HIV modes of transmission are intravenous drug use (IDU) (46%) followed by heterosexual contact (27%) and men who have sex with men (MSM) (23%) (Puerto Rico HIV/AIDS Surveillance, 2011). Robles et al. (2007) reported an early age of sexual initiation among Puerto Rican adolescents at age 15 (26.8%), where the proportion of sexually active adolescents nearly doubled from elementary to intermediate school and from intermediate to high school.

In general, the adolescent population is a growing vulnerable age group at risk of acquiring the HIV virus. For this reason, future studies with special emphasis on prevention to reduce the HIV/AIDS morbidity and mortality should be conducted.

3. Factors related to HIV infection among Hispanic/Latino adolescents

Several factors related to HIV infection among adolescents have been studied using an ecological approach. In Hispanic/Latino adolescents, few studies had been performed involving the nature of the interplay between individual, family, and social factors in a synergistic manner to decrease HIV infection among them.

3.1 Individual factors

Papalia and Wendkos (1997) define adolescence as a transition period of development between childhood and adulthood. This developmental stage fluctuates between ages 12 and 19 years. Biologically, adolescent's immature reproductive and immune systems make them more vulnerable to infection by various STI pathogens (Cates, & McPheeters, 1997; as cited in Sales, & DiClemente, 2010, p. 2). Offer and Offer (1974) found that one third of adolescents had difficulty facing unexpected events and frequently came back to immature behaviors and were displeased during difficult times. Adolescents frequently use alcohol, cannabis, or tobacco. Recently a new drug known as ecstasy has emerged. Drugs provoke un-inhibited effects in human behavior. Some of the published explanations for the high transmission rates of STI in adolescents include the use of oral contraceptives. That results in unprotected sex, a feeling of invulnerability towards STI, the presence of a non-susceptible belief, and the desire for sensation seeking.

3.2 Sensation seeking

Sensation seeking is a personality factor that could have an important role in HIV risk behavior. Sensation seeking focuses on the need for new and varied experiences through un-inhibited behavior, these include dangerous activities, a non-conventional lifestyle, and a

rejection of monotony (Zuckerman, 1979; Zuckerman 1971). Few studies have demonstrated the relationship between high-risk behavior and sensation seeking among adolescents. Romer & Hennessy (2007) reported that sensation seeking increases adolescent risky behaviors such as the use of alcohol, tobacco, or other drugs. Martin (2002) found that sensation seeking mediates the relationship between pubertal development and drug use in adolescent's males and females. Arnett (1990) found a significant relationship between high sensation seeking scores and sexual relationships without contraception among 145 adolescents in Atlanta. Also, some studies have found a relationship between sensation seeking and alcohol consumption among high school students (Clapper et al., 1994) and first year college students (Johnson & Cropsey, 2010). Erikson (1968) presented a way to understand young people needs in relation to their society. He developed the psychosocial developmental theory, defining seven developmental stages. Adolescence is the stage of identity versus confusion. The most important question in this developmental stage is who am I? Having an identity involves making deliberate decisions related to occupation, sexual orientation, and life philosophy.

Adolescents with high sensation seeking are more receptive to intense or novel stimuli, which make them more likely to engage in HIV risk behaviors (Donohew, Palmgreen, Zimmerman, Harrington, & Lane, 2003; Zucherman, 2007). Zuckerman (2003) affirmed that imparting information alone or using scare tactics are not effective for preventing risky behavior in adolescents with high sensation seeking. Also, Donohew et al. (2003) and Zuckerman (2003) recommended incorporating strategies that enhance self-esteem through cognitive and behavioral interventions to help mediate impulsive decision-making and sensation seeking. These strategies teach adolescents skills to resist peer pressure and to exert self-control (e.g. critical thinking and positive decision making). According to Donohew et al. (2003) and Zuckerman (2003) using sensational messages are effective to capture the attention of adolescents with high sensation seeking; such as messages that are "novel, creative, unusual, complex, emotional, graphic, unconventional, fast paced, and suspenseful, with intense sound, hard-edged music and visual effects" (Zucherman, 2006, p. 216).

3.3 Self-esteem

Self-esteem has proven to be a predictor of risk behaviors (e.g. smoking initiation and alcohol use) in adolescents and adults, which predispose them to poor physical health (Birndorf, Ryan, Auinger, & Aten, 2005 as cited in Figueroa, Miranda, Fernandez, Maysonet, & Ramon, 2010, p. 37). Researchers found that Puerto Rican boys were more likely than girls to report high self-esteem in all grades (8th, 10th and 12th) ($p < 0.001$) (Figueroa, et al., 2010). In grade eighth, 39.2% of boys versus 27.4% of girls reported high self-esteem. Factors common to both - boys and girls- included positive family communication at baseline self-esteem measurement (Figueroa, et al., 2010). An adolescent with low self-esteem can be more exposed to peer pressure than an adolescent with adequate self-esteem. A longitudinal study followed over two years was conducted with seventh grade students, revealed that boys with higher self-esteem were 2.4 times more likely to initiate intercourse, while girls with higher self-esteem were more likely to remain virgin than those with lower self-esteem who were 3 times more likely to initiate intercourse (Sumter, Bokhorst, Steinberg, Westernberg as cited in Figueroa et al., 2010). Low self-esteem, psychological distress, sexual abuse, and depression also place many adolescents at risk to engage in STI/HIV associated

sexual behaviors (DiClemente et al., 2001; Shrier, Harris, Sternberg, & Beardslee, 2001; Shrier, Harris, & Beardslee, 2002; Spencer, Zimet, Aalsma, & Orr, 2002; Parrillo, Freeman, Collier, & Young, 2001; as cited in DiClemente et al., 2008, p. 598).

3.4 Invulnerability

Adolescents believe that they are invincible from disease, accidents, and death (Hochhauser, 1988). Also, adolescents rely more on peer networks and are more concerned with immediate risks than with long term risks. Mason, Olson, and Parish (1988) indicated that adolescent's attitudes towards risk behaviors often include the denial of any chance of contamination and the adoption of the belief that they are invulnerable. Peltzer (2001) found that the behavioral factors that influence HIV risk among high school seniors in South Africa were attitudes towards the use of condom as well as feeling invulnerable to HIV/AIDS. Since many adolescents do not perceive themselves at risk for HIV infection, they engage in sexual and drug use behaviors that put them at risk not only for HIV infection, but also for unwanted pregnancies, and sexually transmitted infections (Kipke et al., 1990). Hingson et al. (1990) consistently found that even though most adolescents have some information about HIV/AIDS; they still engage in risky sexual behavior. Although adolescents typically perceive HIV as a severe disease, a great deal of variability exists regarding individual perception of susceptibility (DiClemente et al., 2008). Studies have suggested that adolescents who perceive that they are at risk for STIs/HIV tend to engage in less risky sexual behavior than those who do not have these perceptions (Boyer, Shafer, Wibbelsman, Seeberg, Teitle, Lovell, 2000; Sieving, Resnick, Bearinger, Remafedi, Taylor, Harmon, 1997; Zimet, Bunch, Anglin, Lazebnik, Williams, Krowchuck, 1992; as cited in DiClemente, Crittenden, Rose, Sales, Wingood, Crosby, Salazar, 2008, p. 598).

3.5 Risky behaviors

Alcohol and drug use have been identified as the most important predictors for STDs and HIV infection among high school students; both have strong effects in the age of sexual debut (Schafer et al., 1991). According to a study by the American Federation of AIDS Research (2001), sexual behavior of young people is highly influenced by the use of alcohol and drugs, which in turn negatively affects their decision-making skills and ultimately their behavior. As previously cited, the CDC (2010) reported that 21.6% of adolescents had drunk alcohol or had used drugs before their last sexual intercourse (YRBS, 2010). Kraft and Rise (1999) found a relationship between alcohol consumption and sexual behavior among adolescents. A recent study showed that young people with substance abuse problems are more likely to engage in risky sexual behaviors during adolescence and continue in risky sexual behaviors while substance problems persist (Tapert et al., 2001). Among adolescents surveyed in New Zealand, alcohol misuse was significantly associated with unprotected intercourse and sexual activity before age 16 (Fergusson & Lynnskey, 1996). Forty-four percent of sexually active teenagers in Massachusetts said they were more likely to have sexual intercourse if they had been drinking and 17 percent said they were less likely to use condoms after drinking (Strunin & Hingson, 1992). Similar results have been found among Hispanic/Latino adolescents. As previously published, HIV risk behavior (e.g. alcohol use, drugs use, and/or sexual intercourse) was measured among Puerto Rican early-adolescents enrolled in the ASUMA project at baseline. Researchers found that none of them reported

illicit drug use, 26.3% and 1.2% reported alcohol use and sexual intercourse at some point in their lives, respectively (Fernandez et al., 2008). Latinas are 2.8 times more exposed than non-Latina whites to give birth at ages 15-19. Overall, Latinas have the highest pregnancy rate and birthrate among all ethnic groups in the U.S.. Although Latina women initiate sexual intercourse at later ages than non-Latinas, they are less likely to use contraceptives once they start having sex (Stoneas cited in Deardorff, Tschann, Flores, & Ozer, 2010, p. 23). Female virginity was positively associated with women's nonuse of condoms, rather than consistent use, during the first month of their current relationship" (Deardorff et al., 2010). In males, "the importance of satisfying sexual needs increased with the numbers of lifetime and recent sexual partners and with inconsistent condom use in the first month of their relationship" (Deardorff et al., 2010).

3.6 Lack of HIV/AIDS knowledge

A lack of HIV/AIDS knowledge and inaccurate information are factors that lead to infection with HIV (Alpabio, Asuzu, Fajemilehin, & Ofi, 2008 as cited in Figueroa et al., 2010). A study among Puerto Rican high school students found low HIV/AIDS knowledge and HIV risk behaviors (Mojorele, Brook, & Kachienga as cited in Figueroa et al., 2010). Another study performed in a sample of 7th grade students from Puerto Rico, found that they did not have enough knowledge about transmission modes and preventive behaviors (Morrison et al., 2007 as cited in Figueroa et al., 2010).

3.7 Family factors

Lescano et al. (2009) identified a set of family cultural factors that have been linked to adolescent risk behavior, these are: acculturation, religiosity, HIV knowledge and sexual communication, gender role and sexual socialization, and parental monitoring practices.

3.8 Communication

Some studies have demonstrated inadequate HIV/AIDS communication between parents and adolescents. In a study conducted in a neighborhood with high HIV seroprevalence, researchers found that parents overestimate how much they talk about HIV with their children (Krauss et al., 1997). Latino youth that talks with their parents about sex, engage in less sexual activity and are less likely to become pregnant (Adolph, Ramos, Linton, & Grimes, 1995; Gilliam et al., 2007). Parent-adolescent communication with adolescent females reduces sexual risk behavior (DiClemente et al., 2001). Open discussion with parents can help postpone sexual activity, protect them from engaging in risky behaviors, and support the healthy sexual socialization of youth (Leland & Barth, 1993). These findings demonstrate the importance of involving parents in HIV prevention efforts directed to adolescents.

As cited by Dancy et al. (2006), mothers often do not have the correct information to assist their daughters in developing risk-reduction behaviors. The same was reported in the qualitative study with African American females performed by Aronowitz et al. (2007) were mothers admitted that it is uncomfortable to talk about sex with their daughters. In another study by Meneses et al. (2006), Latino and Asian mothers demonstrated the highest levels of discomfort and infrequent communication about sex. Lefkowitz (2007) exposed that conversations between parents and adolescents about sexuality are often difficult for both.

This represents a barrier to communicate openly about sexuality and consequently their daughters may receive less prevention information.

DiClemente et al. (as cited in Figueroa et al., 2010) suggested that adolescents that perceived positive family support, family closeness, parental monitoring and parent-adolescent communication are less likely to perform risky sexual behaviors (as cited in Figueroa et al., 2010). Moreover, a study conducted in Puerto Rico by Robles (2007) found that adolescents whose parents reported poor or little communication, monitoring, or control over their children were almost three times more likely to engage in early sexual activity (Robles et al., 2007 as cited in Figueroa et al., 2010).

3.9 Social factors

The trend towards peer linkage is high at this stage. Many adolescents start using drugs by curiosity or by peer pressure. The peer group is critical to an adolescent's emotional development and teenagers prefer each other's company to that of their parents. Risk-taking is seen as a way of coping with normal developmental tasks such as exploration, achieving autonomy (Lavery, Siegel, Cousins, & Rusovits, 1993; Millstein & Igra, 1995) and those difficulties that adolescents face when making decisions (Furby & Beyth-Marom, 1992). Peer pressure can be a negative force in the lives of adolescents, often resulting in their experimentation with tobacco, alcohol, illegal drugs and sexual relations. An adolescent with low self-esteem could be more exposed to negative peer pressure than an adolescent with adequate levels of self-esteem. Peer pressure affects the early onset and prevalence of sexual behaviors (Romer et al., 1994). A national representative phone survey among 510 teens between the ages of 12 to 17 found that 83% of males and 89% of females reported that their peers felt an element of extrinsic pressure when asked on sex and relationships; and 41% of males and 31% of females reported that they personally face pressure when it comes to sex and relationships (SIECUS, 2000).

4. HIV prevention among adolescents

Many studies have identified several risk factors associated with multiple problem behaviors (Biglan, Brennan, Foster & Holder, 2004). Various HIV risk reduction strategies for adolescents have been performed in the United States to mediate biological, cognitive, social, and emotional factors (Biglan et al., 2004). Biglan et al. (2004) stated that effective interventions should address multiple problem behaviors according to the following factors: (1) individual level factors such as mood disorders, anxiety, impulsivity, hyperactivity, attention problems, and early aggression; (2) family level factors such as: absence parental problem solving skills, inconsistent discipline and monitoring, and barriers of parent-adolescents communication; and (3) social level factors such as violence, drug and alcohol use and smoking, social stigma, discrimination, lack of health services and public policy to enhance HIV risk reduction strategies and programs.

4.1 Evidence-based interventions

HIV evidence-based interventions are "behavioral, social, and structural interventions that are relevant to HIV risk reduction have been tested using a methodologically rigorous design, and have been shown to be effective in a research setting" (CDC, 2003). Evidence-based interventions employ several cognitive, social, behavioral, motivational, humanistic

and/or existential psychodynamic theoretical models to address the core components of each intervention. Evidence-based interventions have to be implemented exactly as intended and within a context similar to the original intervention. If they are to be adapted and tailored to a different target population the core elements of the intervention need to be maintained. (Dworkin et al., 2008; McKleory et al., 2006; Rebhook et al., 2006; Rohrbach et al., 2006; Stanton et al., 2005 as cited in Rotheram-Borus et al., 2009). However, some community interventionists reject the replication with fidelity of an evidence-based program because they tend to customize their programs based on the community needs (Rotheram-Borus et al., 2009).

Kim et al. (1997) and Rotheram-Borus et al. (2009) evaluated and recommended a set of common factors that should be included in the design of effective HIV prevention programs for adolescents: (1) using a theoretical framework to address behavioral change; (2) focusing on the community and/or cultural aspects and issues of target population; (3) including coping skills (e.g., cognitive, affective and behavioral skills) training; (4) addressing environmental barriers; (5) providing skills and tools to support positive community healthy actions. Advocates for Youth (2003, 2006) identified several evidence based programs; known as “Programs that Works.” These programs can be accessed through the CDC and the Diffusion of Effective Behavioral Interventions websites (CDC, 2010). Rotheram-Borus et al. (2009, p. 391-394) identified common principles which should be included for effective adolescent HIV prevention interventions program’s goals. These include the following:

1. Develop adolescent positive self-esteem. Positive self-esteem and emotion can enhance the adolescent’s ability to resist negative peer pressure and to promote self-care.
2. Provide accurate facts. Accurate information can increase HIV/AIDS knowledge and helps them understand common myths and faulty assumptions.
3. Evaluate options and consequences. Develop adolescent’s skills by providing them with strategies to make informed decisions.
4. Commitment to change. Reinforce vulnerability recognition by reinforcing personal commitment for acting safely through community active participation.
5. Plan ahead and be prepared. Prepare adolescents with coping skills and avoidance of risky situations by enhancing critical thinking and communication skills.
6. Practice self-control. Enhance self-control skills that will allow the control of self-emotional states and increment the recognition of situations that might trigger the lack of control.
7. Teach exciting alternatives to avoid high-risk sexual activity.
8. Teach them how to negotiate. Provide them with guidance to enhance verbal and non-verbal negotiation skills and express their desires by enhancing self-care, self-esteem, and positive relationships.
9. Focus on their freedom to choose. Interventions should focus on the development of each adolescent’s freedom to choose for themselves, thus providing them with skills to set voluntary limits that will help them protect their health.
10. Act to help others protect themselves. Enhance their responsibility to value and protect their peers.

Several evidence-based interventions were designed and tested among Hispanic/Latino adolescents by using multiple educational strategies (e.g., role play, demonstration, workshops, video/music, projects, simulation, practice, scientific research, assignment,

small groups discussion) and were delivered in school (Villaruel, Jemmott, & Jemmott, 2006) or community settings (McGraw et al., 2002). The majority of these interventions focused on enhancing adolescents HIV knowledge, self-esteem, emotion and motivational factors, problem solving and decision making skills, autonomy, impulse control and self-control, critical thinking, effective communication and negotiation, social responsibility, values and norms (McGraw et al., 2002; Rotheram-Borus et al., 2009; Villaruel et al., 2006). Some of these theoretical constructs were used to design interventions for reducing HIV risk related behavior among Hispanic/Latino adolescents (e.g., risky sexual behaviors) such as intentions: subjective norms, and control beliefs. These interventions resulted in a reduction of sexual activity, a reduction in the number of sex partners, a reduction of unprotected sex, and an increase in condom use s (Gallegos, Villarruel, Loveland-Cherry, Ronis, & Zhou, 2004; Villarruel et al., 2006). Other interventions have constructed its core components on the socioecological theoretical model, which can be used to address individual, family, community, organizational, and societal determinants of HIV risk infection among Hispanic/Latino adolescents (Biglan et al., 2004). The eco-developmental model along with other social and behavioral models was used to design a Hispanic/Latino adolescent's intervention in Mexico (Gallegos et al., 2006). The outcome of the intervention showed a significant intention of condom use among adolescents in the experimental group (Gallegos et al., 2006). Some effective interventions have incorporated and evaluated the effectiveness of parental involvement as a mean to improve HIV risk practices among their children. Recent research has found high intervention attendance and retention rates among parents involved in HIV prevention programs with their children (Wyckoff et al., 2003). Also, Wyckoff et al. (2003) affirmed that parents are interested and willing to participate in activities directed to improve adolescent communication. Perrino et al. (2000) highlighted the significant contribution of families in the prevention of HIV risk behaviors among adolescents. In recent studies among Hispanic/Latino adolescents in the United States and Mexico, parent-adolescent communication was found to reduce sexual risk behaviors among adolescents (Gallegos et al., 2004; Villaruel, et al., 2006). These findings demonstrate the importance of involving parents in HIV prevention efforts directed to this group. However, many viable organizations and programs are not embracing the inclusion of parents in their HIV prevention efforts because they perceive a degree of difficulty to reach parental involvement. Adolescents recognized the importance of parental advice however they need to feel freedom to choose for themselves. Furthermore, adolescents tend to reject the imposition of adults.

According to DiClemente and Crittenden (2008) successful programs are based on theoretical or conceptual frameworks and are specifically tailored to a particular subgroup of a population. DiClemente and Crittenden (2008) affirmed that interventions that focus on the development of self-concept, self-esteem, and social competency skills are also effective to reduce risky sexual behaviors among adolescents. Addressing risky behaviors at earlier ages must be proven to be effective in modifying these behaviors and ultimately in preventing diseases (DiClemente & Crittenden, 2008). The development and implementation of culturally appropriate instruments and interventions are key elements in the prevention of disease for a specific population. Rios-Ellis et al. (2008, p.456) affirmed that designing culturally and linguistically appropriate interventions to reduce HIV/AIDS in Hispanic/Latino adolescent "requires an understanding of the many different perceptions, attitudes, and behaviors that deeply influence the Latino culture and values." Effective

Latino HIV interventions must employ culturally appropriate methods such as the story-based “fotonovelas” and “radionovelas” (Rios-Ellis et al., 2008). Spanish speaking trainers should conduct interventions at schools, community health centers, and community-based organizations in order to positively improve adolescent’s HIV knowledge, which in turn lessens HIV/AIDS risk behaviors among Hispanic/Latino adolescents (Rios-Ellis et al., 2008). Also, program developers must address Hispanic/Latino cultural values such as familialism, “machismo”, “marianismo”, allocentrism, fatalism, power distance, personal space, time orientation, and gender roles” to design interventions that promote Hispanic/Latino parent-adolescent communication as a mean for HIV/AIDS risk reduction strategy among adolescents (Benavides, Bonazzo, & Torres, 2006, p. 92). Villarruel et al. (2006) designed and implemented the “Cuidate!” intervention which addresses Hispanic/Latino cultural factors including familialism and “machismo” to enhance abstinence and condom use in this ethnic group living in United States.

Herbst et al. (2007) examined the overall efficacy of HIV behavioral interventions to reduce HIV/AIDS or STI’s risk behaviors among Hispanics in United States and Puerto Rico. Herbst et al. (2007) meta-analysis documented several effective HIV interventions which increase the likelihood of preventive HIV measures such as increasing condom use, reducing unprotected sex, reducing multiple sex partners, and reducing infection of STI. Table 1 shows a list of evidence-based interventions directed for Hispanic/Latino adolescents. Interventions are gender specific since significant differences were seen when targeted interventions for male or females were done as compared to interventions with both genders. (Herbst et al., 2007). According to Gómez and Marín (1996), Marín (2003), and Marín and Gómez (1997), Hispanic females and males might experience discomfort when discussing sexual matters in the presence of persons of the opposite gender.

4.2 A Supportive Model for HIV Risk Reduction in Early Adolescent (ASUMA): A HIV prevention model for Puerto Rican/Hispanic adolescents

In Puerto Rico we developed, implemented and evaluated an HIV prevention intervention for early adolescents known as “A Supportive Model for HIV Risk Reduction in Early Adolescent” (ASUMA) after a need assessment was performed. ASUMA followed a cohort of 135 Puerto Rican early-adolescents in public and private middle schools (7th to 9th grade). The schools were randomly divided into two groups; interventional and control groups. We developed a theoretical framework that focused on the adolescent’s developmental factors and parental support as a mean to reduce HIV risk behaviors. ASUMA’s theoretical framework is shown in Figure 1. We theorize that an increase in parental support and adolescent’s self-efficacy will lessen HIV risky sexual behaviors. On the other hand, the intervention also focuses on decreasing adolescent’s sensation seeking, on increasing HIV/AIDS knowledge and positive attitudes towards HIV/AIDS; which results from a decrease in the sense of invulnerability. Self-esteem among early-adolescents will increase by a decrease in negative peer pressure” (Fernandez et al., 2008).

The ASUMA curriculum design used pragmatic strategies to facilitate the process of active learning including group discussion, audiovisual aids, debates, brainstorming, patient testimony, reflection, and critical thinking (Fernandez et al., 2009). The intervention was centered on the cultural aspects of the target population and in the development of coping skills strategies. We conducted a total of eight workshops that provided information regarding the developmental and HIV risk related factors. The curriculum also included reinforcement of the knowledge and skills gained (Fernandez et al., 2009; Fernandez et al.,

Program	Middle School	Senior high	Gender	Delay Initiation of Sex	frequency of sex	No. of sex partners	monogamy	Incidence of unprotected sex	use of condoms	use of contraception	used of sexual health care/treat compliance	incidence of STIs	No. or rate of teen pregnancy/birth
1.AIDS prevention ^a		X	Both			X	X		X			X	
2.Get Real about AIDS ^b		X	Both			X			X				
3.Postponing sexual Involvement ^c	X		F	X						X			
4.Reach for Health Community ^d	X		Both	X	X				X	X			
5.Reducing the risk ^e		X	Both	X				X		X			
6.Safer Choices ^f		X	Both	X				X	X	X	X		
7.Teen Outreach Programs ^g		X	Both										X
8.Adolescents Living Safely ^h	X	X	Both		X	X			X				
9.California's Project ⁱ	X	X	Both	X						X			X
10.Carrera Program ^j	X	X	F	X					X	X	X		X
11.;Cuidate! ^k		X	Both		X	X		X	X				
12.Poder Latino! ^l		X	Both	X		X							
13.HIV Risk Reduction ^m	X	X	F			X		X				X	
14.Project Save ⁿ		X	F			X	X	X			X	X	
15.TLC ^o	X	X	Both			X		X			X		

Source: Adapted from Advocates for Youth (2008).

^aAIDS Prevention for Adolescents in School; ^bGet Real about AIDS; ^cPostponing Sexual Involvement: Human Sexuality & Health Screening; ^dReach for Health Community Youth Services; ^eReducing the Risk; ^fSafer Choices; ^gTeen Outreach Program; ^hAdolescents Living Safely: AIDS Awareness Attitudes & Action; ⁱCalifornia's Adolescent Sibling Prevention Project; ^jChildren's Aid Society-Carrera Program; ^kCuidate!; ^lPoder Latino: A Community AIDS Prevention Program for Inner-City Latino Youth; ^mHIV Risk Reduction for African American and Latina Adolescent Women; ⁿProject Save- Sexual Awareness for everyone; ^oTLC: Together Learning Choices

School-Based Program Community -Based Program Clinic-Based Program

Table 1. Effective programs for Hispanic/Latinos in USA: Impact on Adolescents' Risk for Pregnancy, HIV & STI Programs

2008). We also, conducted a workshop for parents of early adolescents from the intervention group. This workshop was adapted from Cornell University's program "Talking with Kids about AIDS: A Program for Parents and Other Adults Who Care" (Fernandez et al., 2009; Fernandez et al., 2008). The parent's workshop focused on developing effective

communication skills with kids and to increase parents HIV knowledge and attitudes. The early adolescents from the control group only received written educational materials about HIV/AIDS prevention (Fernandez et al., 2009; Fernandez et al., 2008). ASUMA was found to decrease HIV risk behaviors among early adolescents at the Puerto Rico school setting (Fernandez et al., 2008).

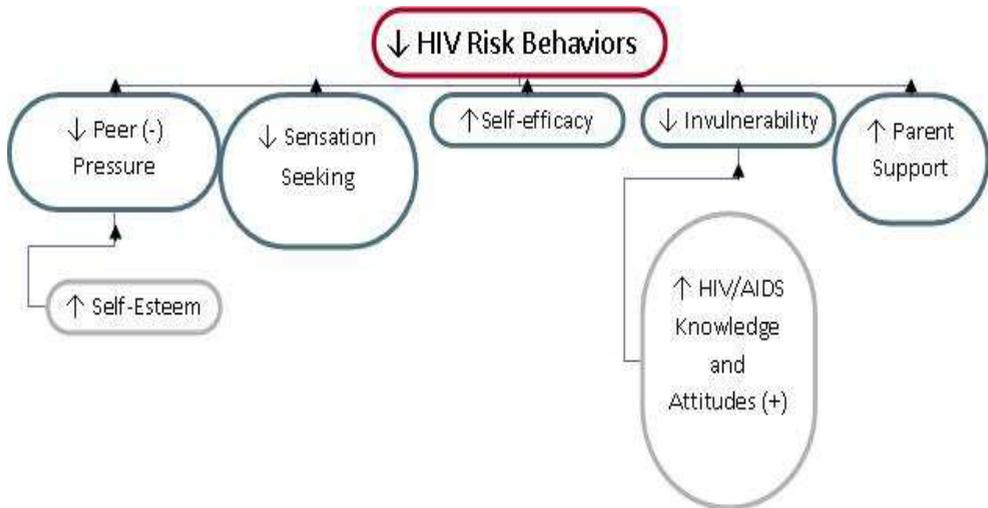


Fig. 1. ASUMA theoretical framework.

5. Barriers for HIV prevention among Latino adolescents

Researchers have identified several barriers that hinder adolescent's modification of HIV/AIDS risk behaviors among Hispanic/Latino adolescents. These barriers have been classified as individual, cultural, and environmental factors.

5.1 Individual factors

Lack of knowledge is the principal individual barrier (Paniagua, O'Boyle, & Wagner, 1997; Sheadlin, Decena, Oliver-Velez, 2005; as cited in CDC, 2010). Many Hispanic/Latino adolescents' risky behaviors are due to the lack of adequate sexual information when making health decisions. Adolescent's misconceptions of HIV/AIDS information hinder their ability to protect themselves (The Henry J. Kaiser Family Foundation, 2002). It is well known that parent-adolescent communication about sexuality correlates with sexual risk taking. Adolescents who receive more sexual information from their parents are less likely to engage in early risky sexual behavior (Benavides, Bonazzo, & Torres, 2006). Hispanic/Latino adolescents feel invulnerable from getting pregnant or getting infected with STIs or HIV (Guttmacher et al., as cited in Benavides et al., 2006). On the other hand, Hispanic mothers do not talk about sex, HIV, or condoms frequently with their children because they considered these topics disrespectful, distasteful, or indicative of promiscuity (Tinsey et al., 2004 as cited in Gomez and Marin, 1996). Other individual factors that should be considered are the invulnerability, the seeking of sensations, self-

esteem, and peer pressure. Vulnerable groups are at risk for HIV infection (Henry J. Kaiser Foundation, 2002). Adolescent girls and young women are prone to have unprotected sex. On the other hand, young men who have sex with men (MSM) perceived stigma and discrimination from others. The intravenous drug users present high invulnerability and sensation seeking. Furthermore, orphaned children of HIV/AIDS parents are at higher risk of abuse and school dropout. Lastly, homeless or sexually exploited children are at risk of prostitution, trafficking, and child pornography (Henry J. Kaiser Foundation, 2002).

5.2 Cultural factors

Other important factors to be considered are cultural barriers such as poverty, values, norms and beliefs, and native tongue. According to the U.S. Census Bureau (2010) most of the Hispanic/Latino in the U.S. and Puerto Rico live in poverty. In U.S. limited literacy in English language and acculturation among immigrants represents a barrier to obtaining HIV prevention information (Organista, Carrillo, & Ayala, 2004; as cited in CDC, 2010, p. 1299).

5.3 Environmental factors

Often adolescents face multiple barriers for seeking and receiving STI and HIV testing and treatment due to lack of health insurance, money to pay, transportation, discomfort with facilities and services designed for adults, and concerns about their confidentiality (CDC, 2004; as cited in Sales, & DiClemente, 2010).

6. HIV prevention strategies for Latino/Hispanic adolescents

By strategies we refer to intended actions for enhancing health behaviors (CDC, 2003, as cited in McKenzie, Neiger, Thackeray, 2009). Interventions directed to adolescents' individual factors should focus on addressing this stressful period, which is characterized by hormonal, physical, emotional, psychological, and cognitive changes (Alloy, Zhu, & Abramson, 2003, p. 171). Alloy, Zhu, and Abramson (2003, p. 171) emphasized the need to discuss identity, self-image, independence, and intimacy issues among adolescents. Another major issue with adolescents is depression. Depression is associated with impairment in school behavior, academic performance, and family and social relationships (Gotlib, Lewinsohn, & Seeley, 1995; as cited in Alloy, Zhu, & Abramson, 2003). Adolescents with depression may display antisocial, histrionic, dependent, and passive-aggressive personality disorders that could increase HIV risk behaviors in early adulthood (Alloy et al., 2003, p.172). The Cognitive Behavioral Therapy is used to prevent depression in a school setting, by using workshops for teaching effective problem solving and encourage positive activity, to reduce stressful environmental skills among adolescents (Alloy et al., 2003). Furthermore, Alloy et al. (2003) explain that the incorporation of parents in this process can provide greater benefits for the adolescents.

6.1 Strategies to address social level factors

Achieving culturally and linguistically appropriate interventions to reduce HIV/AIDS in Hispanic/Latino adolescent requires comprehending many different perceptions, attitudes and behaviors that are deeply influenced by Latino cultures and values (Rios-Ellis, 2008, p.

456). Herbst et al. (2007) recommended that effective interventions to reduce the likelihood of the sexual risk behaviors among Hispanics should include “non-peer deliverers”, should avoid peer outreach method, be at least 4 sessions, address barriers to condom use or sexual abstinence, attempt to change peer norms, include condom use practice skills, and improve problem solving skills.

7. The future of HIV prevention among Hispanic/Latino adolescents

Teenagers represent one of the fastest growing groups of newly HIV-infected persons. Despite HIV prevention efforts during the past decade, the number of HIV-positive persons has increased consistently around the world. Many of these HIV infections occur during adolescence. This developmental stage is often associated with sexual debut as well as risk taking. Adolescents are a high-risk group because: (1) they are in an age of sexual identity exploration; (2) are impulsive and might be influenced by peer group; and (3) do not feel vulnerable and are unable to foresee long-term consequences (McCormic, 1989). In the process of seeking independence, they frequently reject their parent’s authority. They want to know their parents opinion, but insist in making their own decisions. The trend towards peer relationship is higher at this stage. Often they seek peer support due to a lack of parental support, which might lead to risky situations like having sex and/or using alcohol or drugs. Parental support will improve their HIV knowledge and positive attitudes, self-efficacy, and self-esteem while decreasing invulnerability, sensation seeking, and negative peer pressure. Moreover it is highly recommended to study individual, family, and social factors that put adolescents in HIV risk situations according to their cultural scenarios.

Effective programs should include the following aspects: (1) a theoretical/conceptual framework; (2) cultural aspect of the target population; (3) training in coping skills; (4) multiple strategies to impact the diversity of different types of intelligence (5) pragmatic activities to capture adolescents attention; (6) parental participation; (7) the duration of the intervention; (8) principles of community based participatory research methods; (9) the facilitator role; (10) individual or small group sections; (11) measurements of multiple factors based on the theoretical/conceptual framework; (12) an evaluation plan; and (13) a results dissemination plan. On the other hand, successful school based programs should involve pragmatic/experiential classroom and homework activities, such as small group discussions, games or simulations, brainstorming, role-playing, written exercises, verbal feedback and coaching and parental involvement (Kirby, 2002; Fernandez, 2009). Health professionals, parents, teachers, and other relatives could assume the role of facilitators to enhance the adolescent’s interest in inquiring about healthier lifestyles. They should also assist in providing techniques to cope with normal developmental situations.

Programs that provide knowledge and coping skills to avoid negative behaviors should focus on abstinence, condom use, avoidance of alcohol use and illicit drug use in the specific stage of adolescence development. Program evaluation should be performed at all phases of the intervention. This action will advance the development of culturally HIV prevention efforts directed to Hispanic/Latino adolescents. Promoting collaborative efforts between government, private and community-based organizations will maximize the resources directed to enhance individual, family, and community HIV prevention services. These efforts will support the development of public health policies.

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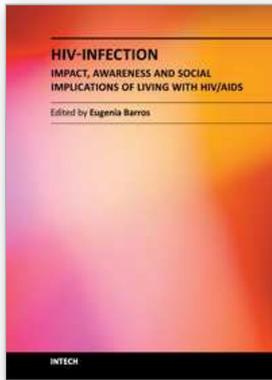
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