

The prevention of HIV transmission in Hispanic adolescents

Guillermo Prado^{a,*}, Seth J. Schwartz^b, Angela Pattatucci-Aragón^c, Michael Clatts^d,
Hilda Pantin^b, M. Isabel Fernández^e, Barbara Lopez^b, Ervin Briones^b,
Hortensia Amaro^f, José Szapocznik^b

^a Department of Epidemiology and Biostatistics, Stempel School of Public Health, Florida International University,
11200 SW 8th Street HLS-II 597, Miami, FL 33199, USA

^b Center for Family Studies, Department of Psychiatry and Behavioral Sciences, Miller School of Medicine, University of Miami, Miami, FL 33136, USA

^c Center for Evaluation and Sociomedical Research, Graduate School of Public Health, University of Puerto Rico, PR, USA

^d Institute for International Research on Youth at Risk, National Development and Research Institutes Inc., New York, NY 10010, USA

^e Behavior Health Promotion Programs, College of Osteopathic Medicine, Nova Southeastern University, Ft. Lauderdale, FL 33314, USA

^f Institute on Urban Health Research, Bouvé College of Health Sciences, Northeastern University, Boston, MA 02115, USA

Abstract

This article reviews the state of the science in HIV prevention for Hispanic adolescents. The article discusses the importance of preventing HIV in Hispanic adolescents. Literature is reviewed in three broad areas: (1) the prevalence rates of drug and alcohol misuse, sexual practices, and HIV infection; (2) risk and protective factors for drug and alcohol misuse and unprotected sex (in general and specifically for Hispanics); and (3) the state of HIV prevention intervention development and evaluation targeting Hispanic youth. Seven specific recommendations are advanced in areas that have the potential to further the field of HIV prevention for Hispanic adolescents.

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Keywords: Prevention; HIV; Adolescents; Ethnicity

1. Introduction

Hispanics are the largest minority group in the United States, representing 13% of the U.S. population (Marotta and Garcia, 2003). As of 2002, 37.4 million Hispanics resided legally in the United States (Ramirez and de la Cruz, 2003), along with several million undocumented Hispanic immigrants (Bean et al., 2001). Hispanics are also disproportionately affected by HIV/AIDS (CDC, 2004a), and HIV/AIDS is one of the leading causes of death among Hispanics (National Center for Health Statistics, 2004). According to CDC estimates, Hispanics accounted for 19% of new HIV cases and 20% of AIDS cases reported in 2004. The HIV infection rate per 100,000 individuals was 26.8 among Hispanics, nearly four times the rate for non-Hispanic Whites (7.2; CDC, 2004a). Hispanic young men who have sex with men (YMSM) represent one of the largest groups of males aged 18–24 living with HIV/AIDS (CDC, 2002a). The proportion of the MSM-related HIV cases increased by 56% between 1989 and 2001 (CDC, 2002b). For instance, in a study of young MSM

from seven metropolitan areas, Hispanic YMSM were twice as likely as non-Hispanic White YMSM to be HIV-seropositive (Valleroy et al., 2000).

The present article provides a critical review of the existing research on HIV prevention for Hispanic adolescents and identifies gaps in and discusses priority areas for research on this topic. It is divided into three sections. First, we highlight the intertwined relationship of HIV infection, sexual behavior, and use of alcohol and other drugs. We also review prevalence rates of drug and alcohol use and unprotected sexual behavior among Hispanic adolescents. Second, we review risk and protective factors for drug and alcohol misuse and unprotected sexual behavior (both in general and specifically for Hispanics). Finally, we summarize the state of HIV prevention intervention development and evaluation for Hispanic adolescents and provide seven specific recommendations to address research gaps in the areas that have the potential to move forward the field of HIV prevention for Hispanic adolescents. We should note that the term “Hispanic adolescent” is used inclusively to refer to young persons of Spanish-speaking descent, regardless of national origin, sexual orientation, or gender. In general, adolescence refers to the period between puberty and age 18; however, national HIV prevalence rates are often provided only for wider

* Corresponding author. Tel.: +1 305 348 7792; fax: +1 305 348 4901.
E-mail address: Guillermo.Prado@fiu.edu (G. Prado).

age ranges such as 13–24. As a result, when HIV prevalence rates are reported, they can be assumed to refer both to adolescence (puberty to age 18) and to emerging adulthood (ages 18–24).

2. Review of research on HIV prevention for Hispanic adolescents

2.1. Sexual behavior, drug use, and HIV infection

Among the most proximal risk factors for HIV infection is unsafe or unprotected sexual behavior. In turn, the HIV risk from unprotected sex is potentiated by multiple partners and the use of drugs and alcohol. More than 70% of the cumulative number of HIV/AIDS cases among Hispanics is attributable to heterosexual or homosexual sexual contact (CDC, 2004b). In 2003, 8.3% of Hispanics had initiated sexual behavior prior to age 13, compared to 4.2% for non-Hispanic Whites (YRBSS, 2004). Early initiation of sexual activity is linked to sex with multiple partners, which in turn is associated with a higher likelihood of sexually transmitted infections, including HIV (CDC, 2004e).

Drug and alcohol use increases the likelihood for unsafe sexual activity in adolescents and young adults (Cook et al., 2002; Guo et al., 2002). According to recent national statistics, 18% of adolescents experienced their first intercourse while under the influence of alcohol or drugs, and 25% of sexually active adolescents reported engaging in recent sexual behaviors while under the influence of drugs or alcohol (National Center on Addiction and Substance Abuse, 2002). For YMSM, these risks are compounded because of the alarmingly high rates of club drug use, the unsafe sexual activity that frequently accompanies club drug use, and the high HIV prevalence among YMSM (Fernández et al., 2005). Recent data indicate that club drugs may also be injected, which further increases HIV risk (Lankenau and Clatts, 2002). The co-occurring behaviors of drug use and unprotected sexual intercourse have been associated with the rising number of HIV cases among adolescents, especially among YMSM (Bailey et al., 1999; Boyer et al., 1999; Guo et al., 2002).

Given that youth are more likely to have unsafe sex when they are on drugs, early initiation of drug use has been associated with unsafe sexual behavior (National Center on Addiction and Substance Abuse, 2002). The earlier the reported drug use, the greater the probability of early sexual activity (Rosenbaum and Kandel, 1990). Moreover, in both adolescents and adults, injecting drug use is a direct risk for HIV infection. Injecting drug use accounted for nearly 40% of AIDS cases among Puerto Rican adolescents and adults in 2003 (CDC, 2004c). Injecting drug users often share needles with other users, which may expose users to HIV-infected blood.

2.2. Alcohol use, drug use, and unprotected sexual behavior in Hispanic adolescents

Hispanic youth are drinking alcohol and using illicit drugs at higher levels than are adolescents in other ethnic groups (Warner et al., *this issue*). Lifetime alcohol use rates have not declined in Hispanic youth as they have for youth from other eth-

nic groups (Johnston et al., 2004). Moreover, rates of lifetime, annual, and 30-day prevalence of illicit drug use in Hispanic 8th and 10th graders are higher than those in adolescents from other ethnic groups for all drugs except amphetamines. However, surveys indicate that late-adolescent and emerging-adult non-Hispanic Whites have the highest rates of alcohol and drug use (SAMHSA, 2001), followed by Hispanics. Two points suggest that the lower rates of use in late-adolescent and emerging-adult Hispanics may be a reporting artifact. First, Hispanics have the highest high school dropout rate (40%) of American ethnic groups, and dropouts are no longer represented in national studies (Greene and Forster, 2003). If school dropout rates were to be comparable across Hispanics and non-Hispanic Whites, Hispanics would likely continue to have the highest rates of drug use at grade 12. Second, we propose that the higher rates of drug use among Hispanic 8th and 10th graders might represent a new wave of heightened drug use among Hispanics. If so, this trend would be expected to lead in coming years to even higher school dropout rates, higher juvenile justice involvement, and higher sexual risk behaviors among Hispanics.

Moreover, Hispanic youth consistently report higher rates of unprotected sexual behavior than non-Hispanic whites. Because Hispanics are less likely to use condoms than non-Hispanic Whites and African American adolescents (CDC, 2004b), Hispanic adolescents are at increased risk for sexually transmitted diseases (including HIV). Among Hispanic youth who reported recent sexual intercourse, only 57% (compared to 63% of non-Hispanic Whites and 73% of African Americans) used a condom during their last sexual intercourse. These differences in unprotected sex may be somewhat responsible for the elevated rates of HIV contraction in Hispanics.

Although the literature on Hispanic YMSM is quite limited, the available data suggest that alcohol use, drug use, and unsafe sexual behavior are important contributors to HIV infection among Hispanic YMSM (Clatts, Goldsamt, & Yi, 2005a, 2005b). In a probability sample of 3492 YMSM 18–22 years of age recruited from public venues in seven cities (Baltimore, Dallas, Miami, Los Angeles, New York city, San Francisco, and Seattle), 88% of reported using alcohol in the last 6 months and 59% reported using drugs in the same time period (Thiede et al., 2003). Rates of unprotected sex were also high (Valleroy et al., 2000). HIV seroprevalence among Hispanic YMSM was 6% compared to 2% for non-Hispanic Whites. In a sample of Hispanic YMSM recruited from Internet chat rooms in Miami, 54% had engaged in unprotected insertive anal sex, and 50% had engaged in unprotected receptive anal sex (Fernández, 2004). These data point to the public health importance of mounting efforts to reduce drug use and unsafe sexual behavior among both heterosexual and homosexual Hispanics.

2.3. Risk and protective factors for unprotected sexual behavior and drug use and alcohol misuse

The risk and protective factors paradigm (Hawkins et al., 1992) is one of the most widely accepted frameworks for conceptualizing the determinants of drug/alcohol use and unsafe sex among adolescents. Adolescents' interactions with

their social contexts are important in determining whether they will engage in health-compromising or health-enhancing behaviors (Call et al., 2002). Broadly, these risk and protective factors can be categorized into (a) contextual or ecodevelopmental factors (e.g., parental involvement with the adolescent, positive parenting, parent–adolescent communication, parental monitoring) and (b) intrapersonal or social cognitive variables (e.g., attitudes, beliefs, and intentions) about drug use and unsafe sex (Pantin et al., 2005).

Both ecodevelopmental and intrapersonal factors are important in preventing drug/alcohol misuse and unprotected sexual behavior among Hispanic youth (see Pantin et al., 2005, for a review). Ecodevelopmental factors include cultural orientations, parent–adolescent communication about sexuality, and parental monitoring of adolescent peer activities. These specific factors are especially salient in Hispanics because (a) acculturation to American values and practices is associated with drug and alcohol use (Gil et al., 2000) and sexual risk taking (Ford and Norris, 1993) in Hispanic adolescents; (b) Hispanic adolescents report less communication with their parents about sexuality, an important protective mechanism against unsafe sex (Guzmán et al., 2003), than do non-Hispanic adolescents (O’Sullivan et al., 2001); and (c) Hispanic parents come from societies where supervision of adolescents is performed at the community level rather than by individual parents (Coatsworth et al., 2002). Some aspects of Hispanic culture itself pose risks for sexual risk taking and HIV infection. Machismo and Marianismo, for example, represent traditional Hispanic male and female gender roles, respectively. Machismo represents an exaggerated sense of masculinity and male dominance, and it has been linked to multiple sex partners and sexual risk taking (Marin, 2003). Marianismo is associated with sexual submissiveness and a lack of knowledge about sex (Marin, 2003), which also presents risks for HIV contraction.

Intrapersonal factors that have been associated with drug/alcohol use and unprotected sexual behavior include risk-taking intentions, attitudes, and beliefs (Barkin et al., 2002; Jemmott et al., 1998; Kirby et al., 1991). Although the risk and protective factors literature has been widely used to explain drug/alcohol use and unsafe sexual behavior in the general population, comparatively less is known whether or how the risk and protection framework applies to Hispanics and to Hispanic YMSM in particular. Although some studies have examined ecodevelopmental and intrapersonal correlates of HIV risk behaviors in particular subgroups of Hispanics (e.g., Locke et al., 2005), more research is needed to further examine the specific risk and protective factors associated with HIV risk behavior in diverse subgroups of Hispanics, and to determine whether these factors differ by sexual orientation. However, because the extant literature has not focused on sexual orientation, in the following section we consider the risk and protective factors literature as it has been applied to the general population.

2.4. Theoretical perspectives on risk and protective factors

Theoretical perspectives have been introduced to synthesize and integrate the respective literatures on ecodevelopmental and

intrapersonal processes. Examples of such theories are ecodevelopmental theory (Locke et al., 2005; Pantin et al., 2003a,b; Szapocznik and Coatsworth, 1999) and the theory of reasoned action (Ajzen and Fishbein, 1980). We review each of these theories separately below.

2.4.1. Ecodevelopmental theory. Ecodevelopmental theory consists of three interrelated components: (a) a social-contextual perspective on risk and protection, drawn from Brofenbrenner’s (1979) ecological theory; (b) a developmental perspective; and (c) an emphasis on social-interactions. The social-contextual, developmental, and interactional components of ecodevelopmental theory have features similar to those proposed by other multisystemic approaches (e.g., Dodge and Pettit, 2003; Gorman-Smith et al., 2000; Pinderhughes et al., 2001).

Regarding the social-contextual perspective, ecodevelopmental theory draws on Brofenbrenner’s (1979) focus on context. Various aspects of the social environment, such as parents, peers, and school, are assumed to affect the extent to which adolescents engage in health promoting or health compromising behaviors. Studies using data from these surveys (e.g., Guilamo-Ramos et al., 2005; Guilamo-Ramos et al., 2004, as well as from sexual risk research conducted on multi-city samples of YMSM (e.g., Valleroy et al., 2000), have begun to shed light on HIV risk behaviors and HIV prevalence. Many of the risk and protective factors discussed in this article, and in the literature generally, are embedded within these contexts.

The developmental component considers the changing nature of both individuals and their environments over time. Therefore, adolescent substance use and unsafe sexual behavior are viewed as the consequence not only of the adolescent’s current ecodevelopmental context (e.g., family functioning, school bonding and performance), but also of the past ecodevelopmental context (e.g., family functioning in childhood). This suggests that the trajectory of ecodevelopmental processes over time may determine the course of an individual’s development. Lerner et al. (2003) adopt a similar perspective within the positive youth development framework, arguing that developmental plasticity allows changes in the social environment to change the youth’s developmental trajectory.

The social-interactional component of ecodevelopmental theory states that development is shaped by social transactions (a) between adolescents and their social environments and (b) between various components of the adolescent’s social environment. For example, in ecodevelopmental theory the focus is placed on dynamic social interactional processes, such as parent–adolescent communication, involvement, and support, that can be restructured and modified through intervention. Many of these protective social-interactional processes have also been identified as “developmental assets” within the positive youth development literature (Scales et al., 2000).

2.4.2. Theory of planned behavior. The theory of planned behavior and its predecessor, the theory of reasoned action, have been used as theoretical bases for a number of intrapersonally oriented HIV prevention interventions for minority adolescents (e.g., Jemmott et al., 1998; Villarruel et al., 2003). Briefly, the

theory of reasoned action incorporates four aspects of decision making and behavior—intentions, attitudes, beliefs, and control (e.g., Ajzen and Fishbein, 1980). Intentions to engage in specific behaviors are taken to be the most salient determinants of the behaviors in question. Specifically, intentions to engage in the behavior are taken to strongly predict such engagement (Doll and Ajzen, 1992). In turn, behavioral intentions are determined by attitudes regarding the behavior, perceived social norms regarding the behavior, and perceived control over the behavior. Favorable attitudes and perceived social norms regarding a behavior (e.g., condom use) are assumed to predict intentions to engage in that behavior. For example, if adolescents believe that their peers are engaging in sexual behavior without using condoms, and if they believe that sex is more pleasurable without a condom, they may be more likely to plan to engage in unprotected sexual behavior (Bachanas et al., 2002). Moreover, adolescents who believe that using condoms is “unnatural” and that using condoms diminishes the pleasure of sex are less likely to protect themselves during sex (Jemmott et al., 1998).

2.5. *Ecodevelopmental intervention programs*

Ecodevelopmental interventions are those that focus on changing aspects of the adolescent’s social context that can impact their developmental trajectories and can therefore reduce risk for, and increase protection against, drug/alcohol use and unsafe sexual behavior. We focus here on three types of ecodevelopmental interventions: parent-centered interventions, school-based interventions, and policy interventions. It should be noted that many ecodevelopmental interventions also contain intrapersonal elements (e.g., Hawkins et al., 2001). However, we designate as ecodevelopmental any intervention that intervenes in the adolescent’s context (e.g., family, peers, school), regardless of whether intrapersonally based activities are also included.

Parent-centered preventive interventions work directly with parents and place them in the role of primary change agent by strengthening their sense of responsibility and control over the lives of their adolescents. These types of interventions may be more efficacious than interventions aimed directly toward adolescents (Tobler et al., 2000) and may be particularly well suited for preventing and reducing risk behaviors for drug and alcohol use (Pantin et al., 2003a,b; Tolan et al., 2004) and HIV/AIDS (Krauss et al., 2000; Pantin et al., 2004). School-based interventions (e.g., Hawkins et al., 2001) are designed to increase bonding to school, tend to focus on social-cognitive mediators, and teach resistance skills to youth. Such interventions tend to focus on various aspects of schooling, including promoting skills in teachers (e.g., teacher training, interactive teaching, cooperative learning), developing social skills in children and adolescents (e.g., negotiation and refusal skills), and engaging parents into the schooling process (Hawkins et al., 2001). Finally, policy interventions (e.g., Gottfredson and Exum, 2002; Wagenaar et al., 2000), which have also been referred to as “structural” interventions, work to limit youth access to alcohol and drugs through increased enforcement of drinking age laws, implementation of drug-specific courts, and working with alcohol merchants to change and more strictly enforce policies and practices regarding

alcohol sales to minors. Hence, parent-centered interventions attempt to impact the adolescent’s development by improving parenting skills and family conditions; school-based interventions target school adjustment and avoidance of negative peers while creating prosocial norms; and policy interventions work at the community level to, among other things, limit access to drugs and alcohol and more strictly enforce anti-drug laws.

A search of the PsycInfo literature database from January 1985 through May 2005, using the terms “adolescent,” “Hispanic/Latino/Latina,” “HIV,” and “prevent,” and omitting any studies with adult samples¹, yielded no published efficacy studies of ecodevelopmental interventions to prevent drug/alcohol misuse or unsafe sexual behavior specifically in Hispanic adolescents. A limited number of interventions (e.g., Martinez and Eddy, 2005; Pantin et al., 2003a,b) have demonstrated reductions in risks for and increases in protection against drug/alcohol use and sexual risk taking but have not used drug or alcohol use as an outcome variable. Moreover, Pantin et al. (2004) are currently testing the efficacy of Familias Unidas, a culturally-specific, family-based preventive intervention. Nonetheless, the need remains for demonstrating the efficacy of other ecodevelopmental intervention modalities (e.g., school-based, policy-based) for Hispanic adolescents.

2.6. *Intrapersonal intervention programs*

A number of intrapersonal preventive interventions have been introduced that focus on reducing HIV risk in minority adolescents (e.g., Jemmott et al., 1998; Villarruel et al., 2003). Although intrapersonal interventions from a number of theoretical perspectives have been developed and evaluated to prevent drug and alcohol use (see Botvin and Griffin, 2004), intrapersonally oriented HIV prevention interventions tend to be grounded in the theory of planned behavior (Ajzen and Fishbein, 1980). The PsycInfo search described above yielded four studies of intrapersonal interventions to prevent HIV in Hispanic adolescents. One quasi-experimental study (Sellers et al., 1994) decreased unsafe sexual activity by conducting workshops and discussion groups and making condoms available to youth. Hovell et al. (1998) randomized non-Hispanic White and Hispanic adolescents to social skills training, didactic lessons, or a no-contact control condition. They found that the social skills training condition increased sex resistance skills in Hispanics but not in non-Hispanic Whites. Workman et al. (1996) found that a cognitive-behavioral preventive intervention increased AIDS-related knowledge, but not HIV-preventive behaviors or sexual decision making, in inner-city African American and Hispanic girls. Guzmán et al. (2003) found that, among a largely Mexican American sample of teens, a teen theater program increased intentions to delay sexual intercourse and to use condoms.

To our knowledge, however, there are no published randomized controlled trials evaluating the efficacy of intrapersonal HIV prevention programs developed *specifically* for Hispanic

¹ Studies that included Hispanics and other ethnic groups but did not report separate results for Hispanics were also omitted from this review.

adolescents. Such interventions are important because they address specific cultural issues and values relevant to Hispanics (Villarruel et al., 2005). In addition to developing interventions specifically for Hispanics, it is possible to adapt programs originally developed for other ethnic groups. When adapting an existing intervention, there are a number of important issues to consider. First, it is critically important that the essence and core elements of the intervention be preserved during the adaptation process (Castro et al., 2004; Gandelman and Reitmeijer, 2004). Second, modifications should be made specifically to incorporate aspects of Hispanic culture relevant to HIV risk and protection (e.g., machismo, respeto; Villarruel et al., 2005). Villarruel et al. experimentally testing a version of Be Proud! Be Responsible! (Jemmott et al., 1998) specifically adapted for Hispanic adolescents (Villarruel et al., 2003). In this study, adolescents were randomized to receive the adapted intervention or a health promotion control intervention. The intervention focuses on developing knowledge, skills, attitudes, and beliefs to support behaviors aimed at reducing risks for unprotected sexual behavior.

3. Priority areas and recommendations for HIV prevention in Hispanic adolescents

We offer a number of recommendations to (a) to improve the health of the U.S. Hispanic adolescents and (b) reduce HIV-related health disparities between Hispanics and other ethnic groups. Our recommendations fall into seven areas as follows:

3.1. Need for analyses of nationally representative datasets

Much of what is known about risk and protective factors for drug/alcohol use and unprotected sexual behavior in Hispanics has been derived from analyses of convenience samples. Those studies that have used random samples have generally sampled only in a specific city, state, or region. Because different Hispanic nationalities tend to be concentrated in different parts of the United States (e.g., Mexican Americans in the Southwest and West, Puerto Ricans in the Northeast, and Cubans in the Southeast), inclusion of all these groups in a single analysis – which would more completely represent the U.S. Hispanic population – would require a nationwide probability sample. A number of such epidemiological datasets exist, such as the National Longitudinal Study of Adolescent Health (Add Health, 2003), the National Study of Households and Families (Sweet et al., 1988), and the National Longitudinal Study of Youth (U.S. Department of Labor, 2005). Studies using data from these surveys (e.g., Guilamo-Ramos et al., 2004; Guilamo-Ramos et al., 2005), as well as from sexual risk research conducted on multi-city samples of YMSM (e.g., Clatts et al., 2005a; Valleroy et al., 2000), have begun to shed light on HIV risk behaviors and HIV prevalence. However, little research has examined a wider array of ecodevelopmental and intrapersonal predictors of drug/alcohol use, unsafe sexual behavior, and other HIV-related risks among nationally representative samples of Hispanic heterosexual adolescents and YMSM. Such research is urgently needed to ascertain the extent to which the predictors identified in local or convenience samples generalize across national

origins, sexual orientation, socioeconomic brackets, degrees of Hispanic population concentration, and regions of the country.

3.2. Explaining variation in drug and alcohol use and unprotected sexual behavior among Hispanics

Although Hispanic adolescents are at increased risk for drug/alcohol use, unsafe sexual behavior, and HIV infection as a group, there are considerable individual differences in the degrees to which Hispanic adolescents are at risk for these outcomes. Two primary sources of this variation, nativity and country of familial origin, have been commonly used in the literature to explain these differences (Canino et al., 2002). For example, epidemiological data suggest that Cuban adolescents have significantly higher rates of past-year illicit drug use than do Mexican American or Puerto Rican adolescents (Wallace et al., 2003). Epidemiological data also suggest that U.S.-born Hispanic adolescents report higher rates of drug use than do their foreign-born counterparts (Vega et al., 2002). Similar patterns have emerged with regard to unprotected sexual behavior. Despite male-to-male sexual contact being the primary route of infection for Hispanics with the exception of Puerto Ricans, few studies have included sexual orientation to help explain differences in the variation of risk in drug use and unprotected sex among Hispanics.

Although the most common method of subgrouping Hispanics is based on demographic characteristics, there may be alternative theoretically or empirically based ways of subgrouping Hispanic adolescents that may be more appropriate for development of preventive interventions. It is likely that differences in levels of risk and protective factors may account for national-origin and nativity differences in risk behaviors. For instance, Gil et al. (1998) found that differences in drug and alcohol use between U.S. born and immigrant Hispanics may be accounted for by differences in acculturation and family functioning. Pantin et al. (2005) have argued that risk and protective factors provide a stronger and more intervention-friendly method of subgrouping Hispanics. Studies that examine risk and protective factors and their association with HIV risk among the wide spectrum of Hispanic adolescents are urgently needed. In particular, research is needed on risk and protection in Hispanic adolescent subgroups that may be especially vulnerable, such as undocumented immigrants, migrant workers, and YMSM.

3.3. Need for flexible interventions

There is evidence that individuals often respond differentially to the same intervention modules (e.g., Szapocznik et al., 2004). That is, even though the intervention is designed for a particular population or group, specific participant characteristics or needs often create differences in the degree to which the intervention is helpful or beneficial. For example, a parenting intervention may be extremely beneficial for one subgroup of families, only mildly helpful for a second group, and ineffective (or even harmful) for a third group. Similarly, a preventive intervention targeting the social networks of Hispanic YMSM may work well for youth who are highly attached to the gay community, but such inter-

ventions might be less effective for Hispanic YMSM who are not attached to the gay community.

This issue is particularly salient for Hispanics, who, despite being classified under a single ethnic heading, are quite diverse in their characteristics. Whether Hispanic subgroups are defined by demographic characteristics, sexual orientation, or by risk and protective profiles, it seems implausible that a single intervention modality would be equally effective for all individuals grouped under the heading “Hispanic.” Therefore, it is important to develop flexible modalities that can be adapted or tailored for specific Hispanic adolescent subgroups. Although the technicalities of designing and testing such flexible interventions are described elsewhere (Pantin et al., 2005), we believe it is appropriate to discuss here the conceptual importance and need for flexible and adaptive interventions for Hispanic adolescents.

At present, the majority of preventive interventions evaluated in the published literature are “fixed” interventions. Fixed interventions are “one size fits all” in that they provide the same dosage and content regardless of the specific needs or characteristics of each participant (Collins et al., 2004). Fixed interventions are designed based on the risk and protective profile that generally characterizes a group of individuals. For example, interventions for Hispanic adolescents may focus on parent–adolescent acculturation discrepancies and on parent–adolescent communication about drugs and sex, both of which are related to drug/alcohol use and unprotected sexual behavior (Felix-Ortiz et al., 1998; Guzmán et al., 2003). However, fixed preventive interventions attempt to deliver the same dosage and content to each participant, and as a result, there is a practical limit on the number of modules that can be included.

Because the efficacy or effectiveness of fixed interventions often varies across subgroups of participants (e.g., Szapocznik et al., 2004), fixed interventions may not be optimal for preventing drug use and HIV among all Hispanic adolescents. In particular, efforts to disseminate and implement interventions on a national level would be undermined by the inability of an intervention to meet the needs of various Hispanic subgroups and of youth from different sexual orientations. It may therefore be necessary to adapt intervention programs so that the content, sequence, and dosage of ingredients is tailored according to the youths’ risk and protection profiles. Although such “adaptive” interventions have begun to appear in the literature (see Collins et al., 2004, for a review), we know of no such adaptive interventions designed or tailored specifically for Hispanic adolescents.

3.4. Need for studies on ethnic and cultural identity development processes in Hispanics

Identity is a key intrapersonal process with regard to drug/alcohol use and HIV risk behavior in Hispanics (cf. Schwartz, 2005). In particular, ethnic and cultural identity have been found to be related to drug and alcohol use (e.g., Marsiglia et al., 2001; Ramirez et al., 2004) and unprotected sexual behavior (e.g., Belgrave et al., 2000). Moreover, sexual identity development may also be associated with risk taking behaviors.

However, the literature on identity and HIV prevention may be limited in at least two ways. First, studies investigating the

role of ethnic and cultural identity in adolescent drug/alcohol use and unprotected sexual behavior have not analyzed Hispanics separately. Second, ethnic and cultural identity are not always differentiated in ways that would allow these two dimensions of identity to make complementary contributions to the study and prevention of drug/alcohol misuse and unprotected sexual behavior. *Ethnic identity* refers to two related dimensions (Phinney, 1992; Roberts et al., 1999): (a) the search for and consolidation of a set of beliefs about the meaning of one’s ethnicity, and (b) the affective valence that one assigns to one’s ethnic group. *Cultural identity*, on the other hand, refers to a broader set of culturally grounded ideals such as familism, collectivism, and interdependence (Jensen, 2003; Schwartz et al., 2006). Other than a small number of studies examining familism as a predictor of drug and alcohol use (Gil et al., 2000; Ramirez et al., 2004), research on cultural identity as a predictor of drug/alcohol misuse and unprotected sexual behavior in Hispanics has been scarce. This is an important area of research, given that “less acculturated” Hispanics tend to report lower levels of drug and alcohol use (Ebin et al., 2001; Guilamo-Ramos et al., 2004) and less unprotected sexual behavior (Ford and Norris, 1993) than do “more acculturated” Hispanics. It is possible that the effects of acculturation, which in the cited studies was operationalized primarily as language use (English versus Spanish), operate through cultural identity processes that change as individuals acculturate to American values, ideals, and practices (cf. Schwartz et al., 2006). More specifically, Hispanics who primarily speak Spanish are likely to have lived in the United States for shorter periods of time and to maintain a Hispanic-based cultural identity (e.g., higher degrees of familism, collectivism, and interdependence; Gomez, 2003; Rodriguez and Kosloski, 1998). As a result, aspects of cultural identity may be the underlying predictors of drug and alcohol use and of unprotected sexual behavior in Hispanic adolescents. Aspects of cultural identity (e.g., endorsement of Hispanic and American cultural values and practices) can be changed through intervention, and these changes in cultural identity may be associated with reduced risk for substance misuse and unprotected sexual behavior (Szapocznik et al., 1986).

To the extent that cultural identity represents the underlying mechanism behind acculturation-related changes and their effects on adolescent risk taking, and to the extent that ethnic identity is uniquely associated with drug/alcohol misuse and unprotected sexual behavior in Hispanics, interventions to prevent drug/alcohol misuse and unprotected sexual behavior in Hispanic adolescents may need to incorporate modules to promote Hispanic ethnic and cultural identity. Such interventions might take the form of group participatory workshops, parent–adolescent interactional exercises, or community-based efforts to “reintroduce” Hispanic adolescents to protective aspects of and values from their cultures of origin.

3.5. Need to examine the role of gender

There is evidence that the nature and predictive power of risk and protective factors for drug/alcohol misuse may differ by

adolescent gender (Dakof, 2000), and that Hispanic girls may be more likely than girls from other ethnic groups to have older boyfriends who predispose them to early sexual activity (Marin et al., 2000). Perhaps as a result, there have been calls for the design and implementation of separate preventive interventions for adolescent boys and girls (e.g., Amaro et al., 2001; Blake et al., 2001). Our PsycInfo search revealed one randomized study evaluating a gender-specific HIV prevention program for Hispanic girls (Project CHARM; Koniak-Griffin et al., 2003). This program, designed for pregnant teenagers, emphasized intrapersonal attitudes such as accountability and responsibility. Relative to a control condition, Project CHARM was found to reduce number of sexual partners and to increase AIDS knowledge and intentions to use condoms. Moreover, in prevention work with African American girls, DiClemente et al. (2004) emphasize that tailoring intervention components toward relationship dynamics such as power differential and relatedness is critical in maximizing the efficacy of gender-specific interventions.

3.6. Comorbidity

Psychiatric comorbidity has been associated with both drug and alcohol misuse (Rohde et al., 1996) and unprotected sexual behavior (Newcomb, 1997). In particular, externalizing behaviors such as delinquency and aggression increase the likelihood that an adolescent will misuse drugs and alcohol (Rowe et al., 2001). In samples of drug and alcohol abusing adolescents, Jainchill et al. (1997) and Robbins et al. (2002) found that Hispanics were more likely to present with comorbid externalizing problems than were African Americans. In addition, Ortega et al. (2000) found that increased acculturation among Hispanics is associated with greater likelihood of psychiatric disorders and comorbidity.

Moreover, in studies of adolescent treatment processes and outcomes, psychiatric comorbidity (particularly externalizing problems) has been shown to interfere with treatment. For example, adolescents with comorbid externalizing problems may be less likely to engage into treatment (Claus and Kindleberger, 2002) and more likely to drop out (Issakidis and Andrews, 2004). Further, compared to their non-comorbid counterparts, adolescents with comorbid disorders who complete treatment are likely to evidence worse outcomes (e.g., Rowe et al., 2004) and to relapse following termination (Latimer et al., 2004).

Thus far, nearly all of the research on the effects of comorbidity has been conducted on populations undergoing treatment. A search of the PsycInfo literature database from January 1972 through May 2005 did not yield any studies examining the effects of comorbidity on prevention outcomes or on sexual risk behavior. Given the importance of prevention vis-à-vis drug/alcohol misuse and unprotected sexual behavior (e.g., Pantin et al., 2003b; Pantin et al., 2004), this is an important research direction. First, given the heightened rates of comorbidity in Hispanics and the relationship between acculturation and comorbidity in this population, it stands to reason that comorbidity should be addressed in prevention research with Hispanics. Second, given that comorbidity is associated with increased likelihood and severity of drug and alcohol use (Rowe et al., 2001), and

given that drug/alcohol misuse and unprotected sexual behavior are closely interrelated (Bailey et al., 1999; Guo et al., 2002), comorbidity is likely related to unprotected sexual behavior. Third, given that adolescents with comorbid psychiatric disorders evidence worse outcomes in treatment studies (Rowe et al., 2004), it is important to ascertain the extent to which these patterns generalize to prevention programs. It is possible that adapted versions of preventive interventions may be required for adolescents presenting with comorbid psychopathology. This would be especially true if comorbidity were related to prevalence and severity of both drug/alcohol misuse and unsafe sexual behavior.

3.7. Injecting drug use

The use of injection as a mode of drug administration accounts for a large percentage of new HIV infections among Puerto Ricans (CDC, 2004b). Unfortunately, few studies have focused exclusively on Hispanic adolescent injecting drug users. We therefore augment our review of existing findings with evidence from broader samples of injecting drug users, some of which have included Hispanic participants, to emphasize the urgent need to acquire a better understanding of the way in which Hispanic adolescents and emerging adults may become involved in injecting drug use.

Although heroin is the primary drug administered through injection, there is considerable evidence documenting the prevalence of injection as a mode of administration for different types of drugs among Hispanics. Injecting drug users are especially vulnerable to HIV infection through using infected needles, especially in the beginning of their injection careers (Pattattucci-Aragon et al., 2003). Although needle exchange programs are vitally important in preventing HIV infection, there is evidence that Hispanic adolescents, particularly girls, are least likely to participate in needle exchange programs (Robles et al., 1998). Robles et al. (1998) suggest that Hispanic girls and young women may participate less in needle exchange programs because they may be reluctant to exchange needles in a public setting. Robles et al. speculate that such reluctance may be related to Hispanic culture, in that acknowledgment of drug use and other unsanitary behaviors in Hispanic women is frowned upon. Moreover, given the increasing inclusion of middle class individuals in the population of injecting drug users, research is needed on the characteristics, use patterns, and service needs of Hispanic injecting drug users from different socioeconomic and regional (or national) backgrounds, as well as on their social contexts and risk and protective factor profiles.

Another issue to consider is that among new injectors, women and Hispanics are likely to occupy subordinate roles in the injection process by virtue of diminished capacity for acquiring drugs and paraphernalia. Those in subordinate roles are likely to inject last during an event and may be dependent upon discarded paraphernalia as an important source for drugs (particularly heroin; Colón et al., 2001; Clatts et al., 1999; Clatts et al., 1994). Such a subordinate role may thereby exponentially increase the individual's risk for HIV infection.

In light of the issues reviewed above, we offer five recommendations for further research. First, studies should be designed to address the social context of needle exchange program access for Hispanics, with the aim of understanding motivational factors for using needle exchange program services, as well as barriers to access, especially for young Hispanic injecting drug users. Second, gender differences affecting access to needle exchange program services should be explored with the aim of modifying existing services to attract more female Hispanic injecting drug users, developing new modalities for reaching them, or both. Third, studies should focus on the sexual relationships of young injectors and the potential for these relationships to serve as bridges for transmission of HIV to non-injecting populations. Fourth, studies should examine the social context of drug injection and its relationship to risk and opportunities for prevention efforts aimed at Hispanics. Fifth, ways should be explored to intervene with drug using Hispanic youth living in high-risk environments in which they face challenges of low socioeconomic power and do not have access to family or community support.

4. Conclusions

The present article has reviewed existing research on HIV prevention for Hispanic adolescents, has identified gaps in this research literature, and has offered recommendations for future basic and intervention research on this topic. Given the health disparities in substance use, unsafe sexual behavior, and HIV infection between Hispanic adolescents and their non-Hispanic White counterparts, as well as the progressive growth of the U.S. Hispanic population, the health of Hispanic adolescents (both heterosexual and homosexual) has become a progressively greater national public health priority. Little basic and intervention research has been conducted on HIV prevention in Hispanic adolescents, with even less attention given to Hispanic YMSM. There are a number of areas in which further knowledge development and scientific advancement are needed. The seven areas identified in this review were (a) the need for analyses of nationwide epidemiological data examining risk and protective factors for substance use and unsafe sexual behavior for heterosexual and homosexual youth; (b) explaining variations in drug/alcohol use, unsafe sexual behavior, and HIV infection among Hispanic subgroups; (c) need for adaptive preventive interventions for Hispanic subgroups with varying risk and protection profiles; (d) incorporation of ethnic, cultural, and sexual identity into prevention programs for Hispanic adolescents; (e) examination of the role of gender in preventive interventions for Hispanic adolescents; (f) research on the effects of psychiatric comorbidity on drug/alcohol use and unsafe sex and on the efficacy of prevention programs; and (g) increased focus on intravenous drug use as a mode of HIV infection among Hispanics, particularly Puerto Ricans. Research addressing these research needs has the potential to facilitate progress toward achieving the two primary objectives of Healthy People 2010—improving the quality of life for all Americans and reducing health disparities between and among segments of the U.S. population.

Acknowledgement

This work was partially supported by NIDA grant DA19101 awarded to Dr. Guillermo Prado.

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