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The Sexual Behavior of Latino Adolescents:
The role of Ethnic Identity and Self-Efficacy

by

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B.S. (University of California, Los Angeles) 2001
M.P.H (University of California, Berkeley) 2003

A thesis submitted in partial satisfaction of the

requirements for the degree of

Master of Science
in

Health and Medical Sciences

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA, BERKELEY

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Fall 2004

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_____   26 April 2004
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University of California, Berkeley

Fall 2004

**The Sexual Behavior of Latino Adolescents:
The role of Ethnic Identity and Self-Efficacy**

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by

Azadeh Khatibi

This work is dedicated to

Nicholas James Garrity,

Who stands by my side

Steadfast in heart, mind and action.

I love you.

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Acknowledgements

I am grateful for the intellectual and emotional support of those who given their time to my academic development. Foremost among them is Kristine Penner, who urged me to use her dataset, provided me with great articles, and was always an email or phone call away. Without her, this thesis would not exist. Dr. Maureen Lahiff gave me her time and intense attention, nurturing independent work while providing me with pearls of wisdom that took me far in my analysis. Her 142B class was exquisitely taught, helped me a great deal on my thesis, and will continue to be an asset to me in my future medical reading. Dr. Harvey Weinstein encouraged me to be thorough and think twice about everything. His level of critical analysis is one that I will strive to emulate in my future work. Dr. Sylvia Guendelman supported me and encouraged me to revaluate the framework and area of focus for my papers. I thank them all for their thoughtfulness, flexibility and time.

Rebecca Gordon, my JMP sister, provided me with amazing academic and social support and helped me plan out my strategy for completing this project. Dr. Ann Stevens and Jessea Greenman pushed me to focus during various stages in my thesis. I give many thanks to the support of the JMP staff, students and faculty. The JMP is a special place.

Nick Garrity provided steadfast support in both the domestic and academic realms. He has a keen eye in design, golden advice on presentation, and a great intellect. He helped me create the tables and charts, picked up and renewed library books for me, and read my paper and provided valuable comments. He also urged me to read up on my subjects, applauded my achievement and made me confident by expressing his

confidence in me. Nick also created a fun, warm and loving home environment so that I could focus on this work. For all this, and so much more, I am eternally grateful.

My best friend, Angela Gomez provided unflailing support, childcare, inspiring emails and Endnote (!) Thanks for making me laugh throughout all this.

Daryle Garrity (Mom) visited us every month and provided much-needed childcare, nurturing and great conversation. I am so grateful for her help and time, without which, I would be flailing. Wendy Patterson and Matthew Garrity—the dynamic duo—provided childcare so that I could write. The way the lead their life serves as inspiration to me.

My parents, Hayedeh (Maman joon) and Ali Khatibi (Baba joon), and my sister, Bahareh Khatibi, gave me a great of support. I lived for the loving warmth of their motivating phone calls. They created a 'writer's retreat' for me—room, board, child-care and plenty of tea and hugs—so that I could write. The majority of the papers and analysis were written in Encino. And, of course, I am grateful to my grandmother, Maliheh Shahkoohi (Madar joon) for her great advice and sense of humor that always makes my day.

Thank you.

Chapter 1

The Sexual Health Behaviors of Latino Adolescents:

Ethnic Identity and Self-Efficacy in Sexual Health Behavior

CONSEQUENCES OF LATINO ADOLESCENT SEXUAL INTERCOURSE

Sexual intercourse has profound physical and psychological health consequences for the adolescent.[*] Adolescents who engage in sexual activity are at risk for unintended pregnancy and sexually transmitted diseases. In addition to physical health consequences, the adolescent must also deal with emotional risks arising from sexual intercourse. Moreover, the earlier intercourse is initiated, the greater the overall risk to the individual.

Sexually transmitted infections (STIs) pose a risk to fertility and may even cause death. Approximately one-fourth of reported STIs occur in adolescents. Negative outcomes for females include cervical cancer and pelvic inflammatory disease with its associated chronic pelvic pain, infertility and ectopic pregnancy. Negative outcomes for both females and males include genital cancers and HIV infection and AIDS.[1] These risks are greater the earlier intercourse is initiated due to greater opportunities for exposure.

Adolescent pregnancy poses socio-economic and health risks to adolescent parents, particularly adolescent mothers and their children. "…younger teens are less equipped developmentally and emotionally to make and act on protective and healthy decisions related to their sexual lives," [2] and thus they are more at risk for negative consequences Adolescent mothers are less likely to complete high school or have steady employment. They are more likely to be on public assistance at some point in their lives. Children of adolescent mothers are more likely to be premature, have lower birthweights,

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[*] This paper focuses on sexual intercourse, which is only one type of reproductive or sexual activity. Although adolescents engage in sexual activities beyond intercourse and are at risk of negative consequences arising from them, this paper focuses on sexual intercourse because it is primarily responsible for sexually transmitted infections (STIs) and for pregnancy.

a higher mortality rate, and poorer cognitive functioning and school performance.[1, 3] Although most teenage pregnancies are low risk, a 1.2-2.7 times higher risk of prematurity is associated with age younger than 16 years.[3] In fact, the prominence of adverse effects of teenage pregnancy in younger teenagers may be masked in studies that group teenagers too broadly.[3]

In addition to the direct effects on the individual adolescent, the negative outcomes of adolescent reproductive activity affect the economic and social stability of families, communities, and counties all the way to the national level. Unintended pregnancies create hardship for teenage parents. These difficulties, such as maintaining steady employment, lower income due to lack of education and increased use of public assistance create increased economic costs for counties, states and the country. In addition to parental hardships, the hardships and negative outcomes experienced by children of teenage parents can result in an intergenerational process of negative health and socio-economic consequences. STI infection also has negative socio-economic consequences. Treating STIs increases medical care expenditures, ranging from medicine to treat gonorrhea to end-of-life care for AIDS patients. Growing rates of STI infections also puts the rest of the population at risk for infection, further compounding the problem.

Compared to the general adolescent population, Latino[†] adolescents are at greater risk of negative consequences from sexual activity. This is due to more sexual experience and greater susceptibility to STIs and pregnancy. The health concerns of the Latino population are of import because they are the largest minority group in the United States, totaling 35.3 million and comprising 12.5% of the total population in the year 2000. More than one-third of this population is under the age of eighteen, representing 15.6% of the adolescent population aged ten through nineteen years.[1, 4] Compared to other ethnic groups, this population is growing rapidly, in part due to high immigration and fertility rates. Projections indicate that by the year 2020, the Latino adolescent population will increase by 50% to comprise 22.5% of the adolescent population.[1] Thus, what happens to this population will affect the greater population as a whole, and therein lies a great part of the importance of studying this population.

In terms of sexual experience, slightly more Latino male adolescents report sexual experience at an earlier age compared to the general adolescent population, while Latino females have reported rates similar to the general population. In 2001, 40.5% of boys

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[†] There is an inherent problem with the terms "Hispanic" and Latino." As defined and understood in the United States, Latinos may be of any race, and "Latino" is defined by the Census Bureau to be an ethnicity.[4] Variation exists with regard to the definitions of race and ethnicity. However, solely using these terms to group individuals masks the significant differences between sub-populations. These terms actually include many groups of people, including those originating from Mexico, Puerto Rico, Cuba, Chile and the Dominican Republic. The nationalities in the United States of America represented by the terms "Latino" and "Hispanic" include a wide variety of cultures, social statuses, behaviors, beliefs, traditions, and values. Different sub-populations within the Latino population differ from each other in such factors as educational attainment, socioeconomic status, acculturation, generation status, immigration status and religion. These factors interplay to affect health, health behaviors and health outcomes. Thus, these two labels homogenize populations that in actuality may be quite heterogenous. Differences among Latino populations have been found for reproductive behaviors among adolescents. For example, although positive associations have been identified for acculturation with self-esteem and with perceived social support in pregnant Hispanic teens compared to non-pregnant teens, an exploratory study of primigravida Puerto Rican teenagers found no association between mainland acculturation and self-efficacy or perceived social support.[5] These different subgroups may also exhibit different behaviors and beliefs, so it is important to use caution in generalizing findings to all Latinos.

and 29.1% of girls in the ninth grade reported engaging in sexual activity.[1] In comparison, among Latino male and female 9th graders, 46.7% and 30.0%, respectively, report sexual intercourse experience.[1] Latino adolescents tend to be more sexually experienced by the end of adolescence as well: by their senior year of high school, 64.3% of Latino boys and 61.3% of girls report having had sexual intercourse, which is slightly greater than the 61.0% and 60.1% of boys and girls, respectively, in the general adolescent population,[1] although the difference is probably not significantly different for girls. In addition, greater numbers of both male and female Latino adolescents report more than four partners in their lifetime.[6] Consequently, Latino adolescents are at risk for unintended pregnancy and STIs from an earlier age compared to the rest of the population and are at a higher risk than other adolescents of the same age. In addition, since Latino adolescent males engage in sexual intercourse at younger ages compared to Latinas and to the overall population and are also more likely to be sexually active at any given time, sexually active Latino males are more vulnerable to negative outcomes, such as STIs and unplanned pregnancy, from a younger age.

Latino adolescents are at risk for negative outcomes from sexually transmitted infections. Latino students report lower rates of condom use compared to the general student population (53.3% versus 57.9%). They also report lower rates of exposure to knowledge building about AIDS or HIV in school.[6] Among all age groups of females, adolescents have the highest rates of gonorrhea. Although Latinos, both boys and girls, have lower rates of reported chlamydia and gonorrhea infections compared to the overall infection rate,[1] the numbers indicate relatively low rates due to a tremendous number of Blacks infected. In fact, the rate of infection for chlamydia and gonorrhea among Latinos

is still more than double that of Whites. Combined, these data indicate that Latino adolescents are at risk for catching STIs with potentially fatal results, such as HIV/AIDS or cervical cancer due to exposure to Human Papilloma Virus.

Pregnancy also disproportionately occurs in Latino adolescent populations.[‡] Latinos have the highest teen fertility rate among all ethnic groups at 92 births per 1000.[7] Pregnancy rates for Latinos tend to be two to three times that of Whites, and rates among adolescent Latinos are declining much more slowly than for Black and White adolescents. This is in part due to Latinos' lower rates of contraceptive use. In 1995, adolescent females reported lower rates of contraceptive use at last intercourse compared to adolescent males (70.7% compared to 81.2%).[1] Compared to the general adolescent student population in grades nine through twelve, Latinos report a lower rate of condom use and a significantly lower rate of birth control pill utilization at last intercourse (18.2% versus 9.6%). They also report getting pregnant or getting someone else pregnant at greater rates than the general adolescent student population, a significant difference when compared to White students.[6] Latinas are also less likely to have induced abortions.[8] Compared to Black and White adolescents, more Latinas tend to drop out of school due to parenthood from unplanned pregnancy, so they face educational disadvantages.[9]

[‡] Unlike other ethnic minorities, Latina adolescent mothers are not at risk for having low birth-weight babies despite withstanding the same socio-economic hardships faced by other minority ethnicities. Latina mothers tend to have infants with birthweights similar to White women when adjusting for maternal age, education, birthplace, marital status, parity, tobacco use, use of prenatal care, infant sex, and gestational age.[6] Reasons for this paradox may lie in behavioral and socio-cultural dynamics, including acculturation, diet and weight gain. By studying the reasons for this difference compared to other ethnic groups, more specific intervention programs can be created. These programs would not only change the background and behaviors associated with negative outcomes, but they would also aim to strengthen the variables associated with positive outcomes. Their utilization might also prove useful in making changes on variables associated with negative outcomes. Consequently, more research should be done on the positive outcomes associated with the sexual health of adolescents.

THE POTENTIAL ROLE OF ETHNIC IDENTITY AND SELF-EFFICACY IN ADOLESCENT SEXUAL BEHAVIOR

Numerous behavioral and socio-cultural dynamics are associated with patterns of reproductive activity among adolescents in the U.S. For example, variables that have been shown to be associated with delayed sexual intercourse among adolescents include female gender, higher SES, positive family atmosphere, dual-parent families, positive attitude regarding delaying sex, perceived social norms promoting delaying sex, higher school performance, parental communication, concerns about community, higher religiosity, and lack of older boyfriend or girlfriend.[10-13] The sheer number and complex interplay of these variables creates difficulty in elucidating relationships and making causal inferences. Here, I focus on two variables: ethnic identity, a relatively new variable in studying sexual activity, and self-efficacy as potential variables for describing associations with patterns of sexual activity among Latino adolescents. I will suggest that these two concepts will be helpful in accounting for considerable variation in sexual health behaviors among Latino individuals.

Ethnic Identity

Ethnic identity and identity development are areas of debate. In the following section, I discuss ethnic identity in the context of how it has been contextualized in past research and in discussing Phinney and the Multi-Ethnic Identity Measure (MEIM),[14] the scale that measures ethnic identity in the dataset that is used in the study in Chapter 2. Although there is no universally agreed-upon definition of ethnic identity, the definition

used here is a consolidation of ones put forth by Tajfel, Phinney and Yancey. This conceptualization is similar to ones used in contemporary health research on youth.[14-17]

Ethnic identity is different from ethnicity. The term ethnicity assigns individuals membership in a group sharing the same socio-cultural and historical background. Often, this designation is made based upon phenotypic characteristics, social constructs[16] and legal definitions. Research often differentiates between ethnic groups to allow for differences in exposures and outcomes between groups. Within each ethnic group, however, there may be considerable variation among individuals with regard to perception of ethnicity and the importance of membership in that ethnic group.[16, 18] Consequently, there are potentially considerable differences in exposures and outcomes between individuals in an ethnic group. Ethnic identity as a concept has evolved to describe part of one's social identity derived from one's "sense of belonging to an ethnic group and the part of one's thinking, perceptions, feelings and behaviors that is due to ethnic group membership."[19] Thus, ethnic identity is useful in determining if and how ethnicity contributes to different outcomes by qualifying and quantifying if and how group members perceive their own ethnicity.

With regard to health research, ethnic identity is important to study because one's orientation to the dominant society has important health implications. How one feels about his cultural heritage, his membership in that group, and both his and the group's relationship with the dominant culture, may play a role in health beliefs, behaviors and outcomes. This is important for minority groups and, most especially, adolescent minority groups.

Ethnic identity is valuable for application purposes. It is a better variable to bring about change in health outcomes compared to other distal determinants of behavior, such as SES or level of education, because it is much more readily "malleable and amenable to intervention," through, for example, programs that promote ethnic identity or homogenization, or those that target education programs to individuals with a certain level of ethnic identity. Moreover, unlike ethnicity, ethnic identity appears to be for the most part independent of socioeconomic status and gender, so these variables are less likely to be a confounder of differences.[14, 16]

Although some studies neither define nor provide a theoretical framework for ethnic identity, most studies are based on one of three conceptual frameworks: social identity theory, acculturation, and ethnic identity formation.[15]

According to social identity theory, individuals need to firmly identify with a group in order to maintain a sense of well-being. In addition to this well-being, however, minority groups require additional consideration: members of a low-status ethnic group with a high sense of ethnic identity may potentially experience negative self-regard.[15] This can lead to negative health consequences due to a decreased sense of well-being.

In the acculturation conceptual framework, ethnic identity can be thought of as one aspect of acculturation, a term with which ethnic identity has been confused. Acculturation is the process by which immigrants "adopt, internalize and exhibit the behaviors of the host society".[20] It is concerned with changes and adaptation in cultural attitudes, values, behaviors,[15] ideas and beliefs resulting from the dynamics between two distinct cultures. These changes then guide behavior and decision-making. Phinney states that "the level of concern [when exploring acculturation] is generally the group

rather than the individual, and the focus is on how minority or immigrant groups relate to the dominant or host society." When exploring ethnic identity, the level of concern is the individual and how she relates to her own ethnic group.[15] However, current research on Latino adolescent reproductive health outcomes uses the same terms as the acculturation conceptual framework, but defines them differently. This research has sought to determine how acculturation on the individual level is associated with pregnancy. This debatable measurement of acculturation involves characterization and use of language, whereas ethnic identity, as explained below, is measured quite differently.

There are two models to characterize both acculturation and ethnic identity: a linear bipolar model and a two-dimensional model. In the linear model a weak relationship with one's ethnic group implies a strong relationship with the dominant culture, and acculturation weakens ethnic identity (see Figure I.1). In the two-dimensional model (see Figure I.2), ethnic identity and acculturation are independent from one another; an individual "can have strong or weak identification with both their own and the mainstream cultures, and a strong ethnic identity does not necessarily imply a weak relationship or low involvement with the dominant culture".[15]

Figure I.1   Linear, Bipolar Model of Ethnicity
(Adapted from Phinney, 1990)

Strong Ethnic Ties   Strong Mainstream Ties

Figure I.2   Two-dimensional model for Acculturation and Ethnic Identity
(Adapted from Phinney, 1990)

Identification With majority group	Identification with ethnic group	
	Strong	Weak
Strong	Bicultural	Assimilated
Weak	Ethnically identified	Marginalized

The ethnic identity formation conceptual framework is based on the theory of ego identity formation. This framework describes ethnic identity as an individual's developmental process characterized by exploration and experimentation to determine the role of ethnicity in his life. Ethnic identity "captures the incorporation of ethnicity into self-perception of minority status."[16] It is a dynamic quality that develops and changes temporally through social interaction with individuals within and outside of the ethnic group.[16, 21] The media probably plays a role in the development of ethnic identity as well.

Phinney explains the development of ethnic identity "as a three-stage progression from an unexamined ethnic identity through a period of exploration to an achieved or committed ethnic identity."[15] As shown in Figure I.3, young minority adolescents and adults who have not previously examined ethnicity issues for themselves are in the first stage. They may enter the second stage, which involves publicly and privately exploring their own ethnicity through such activities as reading, or attending or participating in cultural activities, and perhaps even rejecting the tenets of mainstream culture. In the third stage, they come to better understand and appreciate their ethnicity. They also have

to resolve issues surrounding the differences between the ethnic group and mainstream cultures, and, if applicable, the lower status of their ethnic group.

Figure I.3   Proposed Stages of Ethnic Identity
(Adapted from Phinney, 1990)

Stage 1   **Stage 2**   **Stage 3**

Unexamined ethnic identity-----Ethnic Identity Search/Examination-----Achieved Ethnic Identity
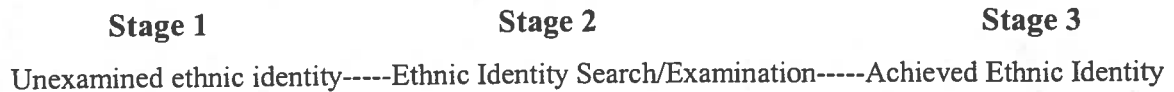
In her analysis, Phinney states that achieving an ethnic identity does not imply ethnic involvement. She presumes that one can be "clear about and confident of one's ethnicity without wanting to maintain one's ethnic language or customs". Since acculturation scales commonly employ language use as a measure, such an individual would be highly acculturated to mainstream culture, and have a strong ethnic identity.

For a scale of ethnic identity to be useful for more than one ethnicity, it must use as measures items common to all ethnicities. This would allow the scale to be used to study a wide range of populations, from across ethnicities to the smallest sub-group of an ethnic group. Phinney created the MEIM to make comparisons in ethnic identity across many ethnic groups or in groups of unknown ethnicity. Her scale can also be used to measure the extent to which individuals within an ethnicity identify with their ethnic group.

The MEIM measures the four components of ethnic identity: self-identification and ethnicity, ethnic behaviors and practices, affirmations and belongings, and ethnic identity achievement.[14] Self-identification refers to how the individual defines himself: it is different than one's objective ethnicity as determined by genetics, and is a necessary

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precursor to the formation of ethnic identity. Ethnic behaviors and practices include participating in cultural events and traditions, and involvement in social activities with persons of one's ethnic group. Affirmation and belonging measures ethnic pride, positive feelings about one's ethnic background and membership in that ethnic group, and feelings of belonging and attachment to the group. A high MEIM score indicates "achieved identity": indicating a firm commitment made following a period of exploration. A low score indicates ethnic identity "diffusion": indicating that the individual has neither explored nor committed to an ethnic identity.[15] Ethnic identity achievement is "the secure sense of self that is the optimal outcome of the ethnic identity formation process."[14] Thus, incomplete exploration or lack of resolution of issues surrounding one's ethnic identity results in poor knowledge regarding one's place in the ethnic group and in society at large.

Although Phinney's scale is well-accepted and has been used extensively in research on African-American youth, past studies have been critiqued. Prior studies used relatively small convenience samples, with limited empirical examination. Also, since most have focused on high school or college students, they missed those individuals with limited or no attachment to the educational system. In addition, self-administration of the instrument may interfere with response and participation due to literacy issues.[16] Furthermore, it does not contain categories for quantifying or qualifying negative actions toward nor attitudes regarding one's ethnic group. It thus is impossible to determine if groups exist that have both high ethnic identity and negative feelings such as shame or guilt about their ethnic group. Given that these negative feelings might be associated with health consequences, it would be important to study them as well. However, the

MEIM is still a useful scale and inferences can be made about negative attitudes by looking at specific questions in the scale regarding attitudes.

Perceived Self-Efficacy

To avoid the risks of STIs and unwanted pregnancy, adolescents not only need information about such risks, they also need interpersonal and "self-regulative skills and a sense of personal efficacy to exercise control over sexual situations".[22] Studies of males and females, including adolescents, from around the world have shown that open sexual communication reduces risk of pregnancy and STIs through increasing the use of condom and other contraceptives.[23] Unfortunately, adolescents of both genders are lacking in their ability to communicate and negotiate about sexual matters and contraceptive use, a pattern that continues past adolescence. A study of 207 male and female college students aged 18-20 found that both males and females exhibited a low ability to communicate about contraceptive use. In addition, females had less ability to communicate about sexual topics, and also had lower scores on assertiveness in preventing intercourse in sexual situations. Males exhibited less communication skills than females, especially in talking about contraceptive use, and showed less ability to be assertive in avoiding intercourse in situations where contraceptives are not being used.[24] Given that these finding were in a sample of college students leads one to question the ability of younger, less educated, more at-risk youth to negotiate sexual matters and condom use.

As defined by Bandura, perceived self-efficacy[§] "refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments."[22] In the context of adolescent sexual behavior, perceived self-efficacy refers to an adolescent's belief that they can, for example, refuse sex during a date, discuss condom use, or communicate with a boyfriend or girlfriend about sexual intercourse. Furthermore, perceived self-efficacy plays a role in determining whether intentions to behave a certain way are put into practice.[22]

A great deal of research has associated high self-efficacy with positive reproductive health intentions and actions. Cross-sectional statewide data from a survey of 1,720 Texas 9th graders in over 13 school districts has shown that self-efficacy regarding sexual abstinence is positively associated with intent to abstain from intercourse in the next year.[25] The Texas-wide survey of teenagers also found that self-efficacy was associated with increased intention to use condoms and frequency of condom use, and negatively associated with the number of sexual partners in the past year.[25] In another example, African-American adolescent females with high self-efficacy regarding safer sex who perceive less partner-related barriers about condom use, such as concerns about partner's potential negative emotional reactions to condom negotiation, were about 2.5 times more likely, to consistently refuse unwanted sex.[26] A study of 181 eighth-graders found that those perceiving themselves to be less efficacious in refusing

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[§] Although they are often erroneously used interchangeably, self-efficacy is not the same as self-esteem, nor are they necessarily related. Self-efficacy refers to judgments of personal capability, and self-esteem refers to judgments of self-worth.[22] Feelings of self-worth are not necessary in order to do a job well, and doing a job well does not necessarily create feelings of self-worth.

sex were twice as likely to have engaged in intercourse. In fact, overall sexual risk-taking behavior increased as self-efficacy decreased, even when controlling for knowledge and attitudes toward AIDS.[27] As perceived self-efficacy weakens, social and affective factors, such as sexual arousal, desire for social acceptance, coercive pressures, situational constraints, and fear of rejection and personal embarrassment, can override a person's judgment and strengthen the likelihood of risky sexual behavior.[22]

Self-efficacy is an important variable to study because it is a good predictor of action and is amenable to change. As a proximal determinant of behavior, self-efficacy is a more immediate and behaviorally specific antecedent of behavior. It is more consistent than distal factors (such as acculturation, ethnicity or family structure) in predicting specific behaviors.[12, 28] Self-efficacy has been shown to delay the onset of sexual intercourse more strongly than did distal variables such as age, ethnicity or parental education, and to be good in predicting outcomes in groups that vary in gender, ethnicity, and level of parental education. However, since it may be a weaker predictor of delay of sexual intercourse onset compared to sexual attitudes and sexual normative beliefs (other proximal determinants)[12] it may be more important in predicting sexual behavior after the initiation of sex, such as condom use, than the decision to initiate intercourse.[25] Furthermore, a synthesis of 15 years of research found that communication with sex partners and condom use negotiation skills were amenable to change by intensive behavioral interventions aimed at reducing HIV risk.[29] Thus, this subject warrants further study not only because it may be more predictive of sexual behaviors than current popular research variables, but it is more amenable to change.

It is unclear how perceived self-efficacy affects Latino adolescents' sexual behavior outcomes, and whether it has greater impact on condom use rather than initiation of sexual intercourse. Therefore, self-efficacy in the context of sexual behaviors of the adolescent Latino population warrants further study.[30]

THE STUDY

This paper has outlined the development of ethnic identity and the three conceptual frameworks used to describe this variable: social identity theory, acculturation and ethnic identity formation. These frameworks invite various conceptualizations to explore the relationship between ethnic identity and sexual health outcomes. Self-efficacy represents another variable. It has been shown to positively mediate sexual health outcomes through its effects on sexual behaviors and may be a better indicator than distal variables such as age or gender.

How individuals feel about their cultural heritage, their place in the ethnic group, the group's place in society, and both their own and the group's relationship to mainstream society, may affect perceived self-efficacy. It is possible that ethnic identity and perceived self-efficacy are associated with each other in how they affect sexual health behaviors, either in a direct causal relationship or interactions between the two. There has been no empirical testing of this theory, and this would be the first to attempt to find an association. In order to elucidate these relationships, it is necessary to test the association between ethnic identity and self-efficacy, and their relationship to reproductive health outcomes.

An ideal study would, therefore, be a prospective cohort study. This study population would include individuals ranging in age from 11-20, so as to include the pre-adolescent and post-adolescent years, from various ethnic groups and regional settings (eg. homo-ethnic rural, other-minority suburban, diverse urban etc.). The individuals would vary in gender, SES, parental education attainment, place of birth, family structure and place of rearing. They would also vary in the reproductive health dependent variables:

- Intercourse and non-intercourse sexual behaviors: ever having had intercourse, age at first intercourse, number of partners in lifetime, number of current partners, non-intercourse behaviors (eg. oral sex, "touching"), age at first non-intercourse behavior, condom use at first intercourse, condom use at last intercourse, frequency of condom use in last three months, types of contraceptive use, contraceptive use at first intercourse, contraceptive use at last intercourse, frequency of contraceptive use in last three months.

- Pregnancy: have ever been pregnant, have ever had a therapeutic abortion, number of pregnancies, number of abortions, number of children.

- STI: have ever had a sexually transmitted infection, including gonorrhea, syphilis, chlamydia, HPV, herpes and HIV; number of times diagnosed with an STI; have ever had an abnormal Pap smear.

Ethnic identity would be longitudinally characterized quantitatively in three modules based on the three conceptual frameworks discussed in this paper. The first module, in accordance with Social Identity Theory, would test the hypothesis that high

ethnic identity, as measured by Phinney's MEIM, is associated with positive or negative self-regard. This would be quantitatively explored for each individual and group to elucidate relationships between individual and group perceptions of ethnic group, ethnic identity and the dependent variables. Thus, for example, we can determine whether an association exists between a low-status ethnic group and poor self-regard and pregnancy. The second module, the Acculturation framework would explore whether ethnic identity is dependent or independent of acculturation—that is, whether the linear model or two-dimensional model described above is correct. Third, the Ethnic Identity Formation framework would be used to quantify ethnic identity level throughout the lives of adolescents. It would also be important to measure how it forms along development—whether through reading, participation in public activities—and what, if anything, is necessary to go onto next stages of development. At the same time, the development of ethnic identity would be compared to the dependent variables.

In all three modules, self-efficacy in relation to its association with ethnic identity would be studied longitudinally via logistic regression at various points in time. The study would test whether ethnic identity and self-efficacy are individually associated with positive dependent variables, if the relationship between ethnic identity and outcome variables is confounded by self-efficacy, and conversely, if the relationship between self-efficacy and the outcome variables is confounded by ethnic identity.

The implementation of the study outlined above faces barriers. These barriers are: lack of time, limited financial resources, language barriers and limited social contacts to recruit suitable participants for a longitudinal study.

However, a dataset taken from anonymous self-report questionnaires completed by rural Latino adolescents grades 9-12, ages 14-19, who attend a high school in the Salinas Valley is available. The data therein allows a study of a distinct population in a more restricted age range at one moment in their lives. In addition to this limitation, low numbers of positive answers for some dependent variables (i.e. have ever been pregnant, number of partners in lifetime) would dramatically reduce power in quantitative analysis. Also, some ideal dependent variables (i.e. non-intercourse sexual activity, number of current partners, condom use at last intercourse) were not included in the questionnaire and thus there are no data for them. Consequently, many ideal dependent variables will have to be eliminated. In addition, some variables (i.e. frequency of condom use in last three months) can be eliminated to avoid repetition and promote simplicity.

The most feasible study at the present is described in the next section, "The Effects of Ethnic Identity and Self-Efficacy on Sexual Behaviors of Rural Latino Adolescents."

INTERLUDE

The previous chapter, "The Sexual Health Behaviors of Latino Adolescents: Ethnic Identity and Self-Efficacy in Sexual Health Behavior," described the vulnerability of the Latino adolescent population to the negative health outcomes associated with sexual activity. It discussed ethnic identity and self-efficacy in the context of adolescent sexual behavior, and proposed a thorough study to elucidate how ethnic identity and self-efficacy may be associated with sexual behavior.

The following chapter, "The Effects of Ethnic Identity and Self-Efficacy on Sexual Behaviors of Rural Latino Adolescents," represents one component of the above study proposal. It examines ethnic identity, self-efficacy and other pertinent variables in association with two outcomes of reproductive behavior: ever having had sexual intercourse and condom use at first intercourse. The study sample is a group of Latino adolescent high school students in a rural California town.

Chapter 2

The Effects of Ethnic Identity and Self-Efficacy on

Sexual Behaviors of Rural Latino Adolescents

BACKGROUND

As described in the previous chapter, sexual activity may have profound consequences for the adolescent. Adolescents who engage in sexual activity are at risk for unintended pregnancy and sexually transmitted diseases. In addition to the physical health consequences, the adolescent must also deal with mental and emotional risks arising from them. Moreover, the earlier sexual activity is initiated, the greater the overall risk to the individuals and their offspring.

Compared to the general adolescent student population in grades nine through twelve, greater numbers of male Latino students report sexual intercourse experience before the age of thirteen and more than four partners in their lifetime.[1,6] Consequently, Latino adolescents are at risk for unintended pregnancy and STIs from an earlier age compared to the rest of the population and are at a higher risk than other adolescents of the same age.

Previous studies on Latina adolescents have studied the impact of acculturation, finding that high acculturation to American culture—most studies determining acculturation by nativity in the U.S.—is associated with earlier onset of sexual activity and higher rates of contraceptive use.[31-33] Acculturation in adolescent research is often understood as the ability to function in an English-speaking setting and US school systems.[34] As discussed in Chapter 1, a relatively unexamined variable, ethnic identity, may be related to acculturation, but describes a full range of development, perception, experience and behavior based on one's ethnicity. Perceived self-efficacy reflects one's beliefs about one's ability to put one's personal guidelines of behavior into action. The relationship between ethnic identity and self-efficacy, if any, remains to be elucidated.

This study aims to explore the potential association between ethnic identity, self-efficacy and sexual behavior. Among Latino adolescents, immigrants and those with low American acculturation status are less likely to be sexually active, but use contraception less consistently and effectively when they do have sex.[7, 20, 32] As described in the previous chapter, taking our clues from behaviors associated with acculturation, and assuming that the linear, bipolar model of ethnic identity development is true for this population, we can hypothesize about ethnic identity. Higher ethnic identity (hypothesized to correlate with low American acculturation) would be expected to be associated with lack of sexual experience, and no condom use at first intercourse. Based on research described in the previous chapter, increased self-efficacy would be expected to be associated with decreased odds of ever having had sex, and increased odds of condom use at first intercourse. This study also aims to find association between ethnic identity and self-efficacy.

METHODS

Data Collection Procedures

Data were obtained from a dataset provided by Kristine Penner.[35] She administered anonymous self-reported, written surveys to 421 students grades 9-12, ages 14-19, who attended a comprehensive high school in a rural town (total population 12, 583) in the Salinas Valley in California.[35] The town is predominantly Latino and seventeen percent of families live below the federal poverty level.[35]

According to Penner, "To obtain a sample that crossed grade and academic success, students in all health and science classes were invited to participate in the

survey. Health and science are both required courses for students. Additional classes taught by the health and science teachers were also invited to participate. Two solicited classes were bilingual classrooms. Prior to administering the survey, students were asked to take a letter of consent to their parents that explained the purpose of the survey and insured anonymity and confidentiality for the students. The letter explained that if parents would permit for their children to participate in the survey, one parent should sign the letter. For students 18 years or older, parental permission was not required.

"Students who gave their consent to participate and obtained written parental consent were given a questionnaire to fill out by the researcher. The survey was available in the respondent's choice of either English or Spanish and took approximately 30 minutes to complete. Students placed their completed surveys in a monitored cardboard box. In order to facilitate participation, two modest incentives were offered to students who returned a signed consent form—extra credit in the class in which the survey was administered and two slices of pizza after school. Approval from the Committee For The Protection of Human Subjects at the University of California, Berkeley was obtained for the study (2002-5-51)".[35]

For this current study, approval from the Committee For The Protection of Human Subjects at the University of California, Berkeley was obtained (project number 2003-12-24).

Sample

From the original 421 individuals who completed the survey, only students satisfying the following criteria were selected for the study: self-identified as Latino,

were born in either Mexico or the United States of America, indicated that they understood most survey questions, and indicated that they completed most survey questions carefully and honestly and gave complete responses to all exposure, outcome and control variables. In addition, nineteen year-olds were dropped from the study due to their small number in the sample. From the original 421 students who completed the survey, a total of 313 individuals met these eligibility criteria.

Measures

The variables were measured in the following way:

Dependent Variables:

Ever Having Had Sex: Was based on the question "Have you ever had sexual intercourse?"

Condom Use at First Intercourse: Respondent was asked "Did you or your partner use a condom the first time you had sexual intercourse?"

Independent Variables:

Ethnic Identity: High, medium or low. Score was based on answers to seven questions adopted from the Multigroup Ethnic Identity Measure (MEIM), created by Phinney.[14] Questions were answered on a four point Likert scale. The point values were summed and total score then divided by the number of questions to get back to a 1 to 4 scale. Individuals with scores >3 were categorized as having high ethnic identity. Individuals with scores ≤3 and >2 were categorized as having medium ethnic identity. Individuals with scores ≤2 were categorized as having low ethnic identity

Self-Efficacy: High, medium or low. Score was based on answers to four questions answered on a four point Likert scale. The point values were summed and total score then divided by the number of questions to get back to a 1 to 4 scale. Individuals with scores >3 were categorized as having high self-efficacy. Individuals with scores ≤3 and >2 were categorized as having medium self-efficacy. Individuals with scores ≤2 were categorized as having low self-efficacy.

Control Variables:

Age: Due to the uneven age distribution in the sample, only two age groups were considered: 14 through 16 year olds (14-16), and 17 and 18 year olds (17/18).

Gender: Female or male.

Academic Performance: Most of the grades received in school during past 12 months. Three groups—high (mostly A's, A's and B's, mostly B's),med (B's and C's, C's) and low (C's and D's, mostly D's, mostly F's).

American Acculturation Level: High or low. Score was based on answers to seven questions from a modified version of the Bidimensional Acculturation Scale (BAS), which measured self-reported Spanish or English language use in daily communication, media use and thought processes. All scale items were previously tested and validated.[35] Questions were answered on a four point Likert scale, ranging from "Never or almost never" to "All or almost all the time". The point values were summed and total score then divided by the number of questions to get back to a 1 to 4 scale.. Individuals with scores greater than 2.5 were categorized as having high American acculturation.

SES: Whether or not mother graduated from high school.

Family Structure: Whether or not individual lived with both mother and father.

Study Design and Data Analysis

Logistic regression was used to model the outcome variables. For each outcome, four models were generated. To allow for the low power associated with tests for interaction, the p-value was set at 0.10 (10%).

Model I: Composed of baseline control variables: age (14-16 or 17/18), gender, academic performance (high, med or low), level of American acculturation (high or low), SES (as determined by whether or not mother completed high school), family configuration (whether individual lived with both parents). Interaction terms between gender and the other control variables were created by generating cross-products to allow for the possibility that the odds ratios for the other control variables vary with gender. The model was further simplified by removing variables shown to clearly have no effect on the outcomes by assessing the likelihood ratio tests to compare model fit.

Model II: Adds to the simplified Model I, ethnic identity (high, medium and low), and interaction terms between each level of ethnic identity and age and gender were created (by generating cross-products to allow for the possibility that the odds ratio for a given level of ethnic identity varies with age or gender). The model was further simplified by removing variables shown to clearly have no effect on the outcomes by assessing the likelihood ratio tests to compare model fit.

Model III: Adds to the simplified Model I, self-efficacy (high, medium, low), and interaction terms via cross-products between each level of self-efficacy and age and gender to allow for the possibility that the odds ratio for a given level of self-efficacy varies with age or gender. The model was further simplified by removing variables

shown to clearly have no effect on the outcomes by assessing the likelihood ratio tests to compare model fit.

Model IV: Adds to the simplified Model I all the ethnic identity terms used in the simplified Model II, and all the self-efficacy terms used in the simplified Model III.

Odds ratios and 95% confidence intervals were generated for each significant term in each model. The models were examined to determine changes in significance after the addition of variables: Models II and IV were compared to examine how the effect of ethnic identity changed with the addition of self-efficacy, and Models III and IV were compared to examine how the effect of self-efficacy changed with the addition of ethnic identity.

RESULTS

Study Participant Characteristics

Table II.1 displays the sociodemographic data of the study samples. The original study sample differed from the high school and survey sample. Comparing the demographics of the high school, survey and study samples, 49% of the high school and 52% of those invited to take the survey were female,[35] whereas, only 39% of the study subjects were female.

Among the study subjects, 106 reported ever having sex and thus were included in the analysis of condom use at first intercourse. In this group made up of sexually experience individuals, the gender distribution was exactly the same as those invited to take the survey.

As might be expected, there are differences in comparing the original study sample and the sexually experienced sample. The age distribution differed between the two study samples. Older individuals made up a greater percentage of the sexually experienced sample. However, a substantial percent of individuals in each age group had had sex: 24% of fourteen year-olds, 25% of fifteen year-olds, 37% of sixteen year-olds, 46% of seventeen year-olds, and 50% of eighteen year-olds. In the sexually experienced study sample, academic performance was lower compared to the original study sample, as those with high academic performance made up a smaller percentage of the sample in the sexually experienced group compared to the original sample (35% compared to 44%) and those with low academic performance made up a greater percentage of the sexually experienced sample (19% versus 12%), while medium academic performance increased slightly. Individuals with higher American acculturation made up a greater percentage of the sexually experienced sample compared to the original sample (91% versus 86%). A smaller percentage of the sexually experienced group reported living with both parents (70% versus 79%). Comparing ethnic identity, those with low ethnic identity were more represented in the sexually experienced sample compared to the original sample (12% versus 7.3%), while representation for those with high and medium ethnic identity decreased negligibly (39% versus 41.2%, and 49% versus 51.4%, respectively). Comparing self-efficacy, those with higher self-efficacy were much more represented in the sexually experienced sample (70% versus 59%). Those with medium self-efficacy were much less represented (20% versus 31%) in the sexually experienced sample, while those with low self-efficacy were equally represented in both samples.

Table II.1: Sociodemographic Data

	Original Study Sample		Reported Ever Having Sex	
	Number	%	Number	%
Total	313	100	106	100
Gender				
Female	122	39	55	52
Male	191	61	51	48
Age				
14	50	16	12	11
15	97	31	24	23
16	84	27	31	29
17	50	16	23	22
18	32	10	16	15
Academic Performance				
High	137	44	37	35
Medium	138	44	49	46
Low	38	12	20	19
High Am. Acculturation	270	86	96	91
Lives With Both Parents	248	79	74	70
Ethnic Identity				
High	129	41.2	41	39
Medium	161	51.4	52	49
Low	23	7.3	13	12
Self-Efficacy				
High	186	59	74	70
Medium	96	31	21	20
Low	31	10	11	10
Have Had Sex	106	34	106	100
Used Condom at 1st Intercourse	N/A		74	70

Models

Ever Having Had Sex

Table II.2 shows the unsimplified Model I. This model was simplified by taking out the following interaction terms that were determined to be non-contributory to the model: age and gender, grades and gender, SES and gender, and living with both parents and gender. Model II was created by adding ethnic identity variables to Model I. It was simplified by taking out the interaction terms for ethnic identity and gender, and ethnic identity and age, which were determined to be non-contributory to the model. Model III was created by adding self-efficacy variables to Model I. It was simplified by taking out the interaction term for self-efficacy and age. Model IV was created by combining simplified Models II and III. Table II.3 compares the results of simplified Model I, simplified Model II, simplified Model III, and Model IV for sexual intercourse ever. The odds ratios and 95% confidence intervals for significant variables and interactions in the above models are reported in Table II.4.

Table II.2: Ever Having Had Sex—Unsimplified Model I

PREDICTOR VARIABLE	Exponentiated Coefficient and 95% CI
Age 17/18	2.16 [0.94, 4.99] °
Female	.08 [0.01, 0.99] °
High Grades	0.37 [0.10, 1.25]
Medium Grades	0.39 [0.11, 1.34]
High Acculturation	0.65 [0.21, 1.96]
SES	1.60 [0.67, 3.82]
Lives with Both Parents	0.33 [0.13, 0.87] *
Age 17/18 x Female	1.50 [0.48, 4.70]
High Grades x Female	0.76 [0.15, 3.87]
Medium Grades x Female	1.19 [0.24, 5.89]
Acculturation x Female	7.18 [1.08, 47.56] *
SES x Female	0.56 [0.17, 1.79]
Lives with Both Parents x Female	1.49 [0.42, 5.21]

° p< 0.10   * p< 0.05

Table II.3: Ever Having Had Sex: Comparison of Models, with Exponentiated Coefficients and 95% Confidence Intervals

PREDICTOR VARIABLE	Model I	Model II	Model III	Model IV
Age 17/18	2.62 [1.49, 4.58] ***	2.71 [1.54, 4.79] ***	2.44 [137, 4.34] ***	2.50 [1.39, 4.48] ***
Female	0.12 [0.02, 0.69] *	0.12 [0.02, 0.72] *	0.04 [0.01, 0.30] ***	0.04 [0.01, 0.32] ***
High Grades	0.33 [0.15, 0.73] **	0.33 [0.15, 0.74] **	0.28 [0.12, 0.66] ***	0.28 [0.12, 0.66] ***
Medium Grades	0.45 [0.21, 0.98] *	0.46 [0.21, 1.00] °	0.39 [0.17, 0.88] *	0.40 [0.17, 0.09] *
High Acculturation	0.74 [0.25, 2.15]	0.80 [0.27, 2.39]	0.74 [0.25, 2.22]	0.78 [0.26, 2.37]
SES	1.16 [0.66, 2.03]	1.17 [0.66, 2.07]	1.11 [0.62, 1.99]	1.11 [0.61, 1.99]
Lives with Both Parents	0.41 [0.22, 0.75] ***	0.41 [0.22, 0.76] **	0.41 [0.22, 0.76] **	0.41 [0.22, 0.77] **
Acc x Female	5.96 [0.95, 37.44] °	6.09 [0.95, 39.15] °	5.81 [0.89, 37.76] °	5.95 [0.89, 39.73] °
High Ethnic Identity		0.38 [0.14, 1.02] °		0.39 [0.14, 1.07] °
Medium Ethnic Identity		0.32 [0.12, 0.85] *		0.35 [0.31, 0.95] *
High Self-Efficacy			1.03 [0.42, 2.54]	1.09 [0.43, 2.73]
Low Self-Efficacy			1.08 [0.34, 3.47]	0.92 [0.28, 3.06]
High SE x Female			4.54 [1.26, 16.40] *	4.11 [1.12, 15.15] *
Low SE x Female			2.08 [0.22, 19.40]	2.17 [0.23, 20.17]

° p< 0.10
* p< 0.05
** p< 0.01
*** p< 0.005

SES: Socio-economic status
Acc: High Acculturation
SE: Self-Efficacy

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Table II.4: Significant Odds Ratios and 95% Confidence Intervals for Ever Having Had Sexual Intercourse

PREDICTOR VARIABLE	Model I	Model II	Model III	Model IV
Control Variables				
Age 17/18 (compared to ages 14-16)	2.62 [1.49, 4.58]***	2.71 [1.54, 4.79]***	2.44 [1.37, 4.34]***	2.50 [1.39, 4.48]***
High grades (compared to low)	0.33 [0.15, 0.73]**	0.33 [0.15, 0.74]**	0.28 [0.12, 0.66]***	0.28 [0.12, 0.66]***
Medium grades (compared to low)	0.45 [0.21, 0.98]*	0.46 [0.21, 1.00]°	0.39 [0.17, 0.88]*	0.40 [0.17, 0.90]*
Both parents in home	0.41 [0.22, 0.75]***	0.41 [0.22,0.76]**	0.41 [0.22, 0.76]**	0.41 [0.22, 0.77]**
Interaction between gender and acculturation:				
Among females:				
High acculturation (compared to low)	4.40 [0.97, 20.02]°	4.86 [1.05, 22.50]*	4.30 [0.92, 20.18]°	4.64 [0.97, 22.23]°
Among those with low acculturation:				
Females (compared to males)	0.12 [0.02, 0.69]*	0.12 [0.02, 0.72]*	0.08 [0.01, 0.98]*	0.09 [0.01, 1.07]°
Ethnic Identity				
High ethnic identity (compared to low)		0.38 [0.14, 1.02]°		0.39 [0.14, 1.07]°
Medium ethnic identity (compared to low)		0.32 [0.12, 0.85]*		0.35 [0.13, 0.95]*
Self-Efficacy				
Interaction between self-efficacy and gender:				
Among females:				
High self-efficacy (compared to medium)			4.69[1.87,11.77]***	4.47[1.77, 11.29]***
Among those with high self-efficacy:				
Female (compared to males)			0.18 [0.03, 1.18]°	0.17 [0.03, 1.16]°
Among those with medium self-efficacy:				
Female (compared to males)			0.04[0.01, 0.30]***	0.04 [0.01, 0.32]***
Among those with low self-efficacy:				
Female (compared to male)			0.08 [0.01, 0.98]*	0.09 [0.01, 1.07]°

° p< 0.10   * p< 0.05   ** p< 0.01   *** p< 0.005

Condom Use at First Intercourse

Table II.5 shows the unsimplified Model I. This model was simplified by taking out the following interaction terms that were determined to be non-contributory to the model: interaction between age and gender, medium grades and gender, and high acculturation and gender. Model II was created by adding ethnic identity variables to Model I. It was simplified by taking out the interaction terms for ethnic identity and gender, which were determined to be non-contributory to the model. Model III was created by adding self-efficacy variables to Model I. It was simplified by taking out the interaction terms for high self-efficacy and gender, and medium self-efficacy and age. Model IV was created by combining simplified Models II and III. Table II.6 compares the results of simplified Model I, simplified Model II, simplified Model III, and Model IV for sexual intercourse ever. The odds ratios and 95% confidence intervals for significant variables and interactions in the above models are reported in Table II.7.

Table II.5: Condom Use at First Intercourse—Unsimplified Model I*

PREDICTOR VARIABLE	Exponentiated Coefficient and 95% CI
Age 17/18	0.66 [0.17, 2.54]
Female	2.61 [0.04, 157. 76]
High Grades	3.44 [0.52, 22.76]
Medium Grades	1.90 [0.34, 10.69]
High Acculturation	1.78 [0.30, 10.47]
SES	1.32 [0.32, 5.41]
Lives with Both Parents	2.49 [0.62, 9.97]
Age 17/18 x Female	1.03 [0.16, 6.64]
High Grades x Female	0.32 [0.02, 4.19]
Medium Grades x Female	0.73 [0.06, 8.23]
Acculturation x Female	1.00 [0.03, 30.96]
SES x Female	3.20 [0.36, 28.23]
Lives with Both Parents x Female	0.36 [0.05, 2.61]

*No significant findings

Table II.6: Condom Use at First Intercourse: Comparison of Models, with Exponentiated Coefficients and 95% Confidence Intervals

PREDICTOR VARIABLE	Model I	Model II	Model III	Model IV
Age 17/18	0.68 [0.27, 1.71]	8.79 [1.22, 63.47] *	2.12 [0.32, 14.08]	14.98 [1.30, 172.88] *
Female	2.11 [0.35, 12.85]	2.69 [0.35, 20.90]	1.40 [0.21, 9.33]	2.17 [0.25, 18.54]
High Grades	3.05 [0.60, 15.57]	3.82 [0.61, 23.75]	2.57 [0.47, 13.89]	3.55 [0.52, 24.04]
Medium Grades	1.62 [0.49, 5.37]	1.62 [0.43, 6.14]	1.40 [0.40, 4.90]	1.53 [0.39, 6.06]
High Acculturation	1.80 [0.40, 8.15]	2.03 [0.39, 10.56]	1.45 [0.30, 7.11]	1.64 [0.29, 9.22]
SES	1.35 [0.34, 5.36]	1.28 [0.28, 5.86]	1.37 [0.33, 5.69]	1.39 [0.28, 6.81]
Lives with Both Parents	2.47 [0.63, 9.59]	3.24 [0.72, 14.57]	3.10 [0.72, 13.28]	3.87 [0.77, 19.34]
High Grades x Female	0.40 [0.06, 9.59]	0.30 [0.4, 2.28]	0.48 [0.07, 3.17]	0.35 [0.04, 2.76]
SES x Female	3.20 [0.37, 27.96]	3.58 [0.32, 40.44]	3.05 [0.34, 27.20]	3.15 [0.27, 36.68]
Both Parents x Female	0.36 [0.05, 2.60]	0.34 [0.04, 3.00]	0.31 [0.04, 2.47]	0.31 [0.3, 3.02]
High Ethnic Identity		6.41 [1.21, 33.92] *		6.57 [1.18, 36.65] *
Medium Ethnic Identity		13.35 [2.12, 84.09] **		12.89 [1.85, 89.94] *
High EI x Age 17/18		0.13 [0.02, 0.81] *		0.14 [0.02, 0.96] *
Medium EI x Age 17/18		0.04 [0.00, 0.41] **		0.05 [0.01, 0.54] *
High Self-Efficacy			4.61 [0.71, 29.98]	2.16 [0.26, 17.60]
Medium Self-Efficacy			1.25 [0.20, 7.71]	0.81 [0.10, 6.86]
Medium SE x Female			2.68 [0.24, 29.45]	1.56 [0.12, 20.21]
High SE x Age 17/18			0.20 [0.02, 1.86]	0.35 [0.03, 3.97]

* p< 0.05
** p< 0.01

SES: Socio-economic Status
Both Parents: Lives with Both Parents
SE: Self-Efficacy

Table II.7: Significant Odds Ratios and 95% Confidence Intervals for Condom Use at First Intercourse

PREDICTOR VARIABLE	Model I	Model II	Model III	Model IV
Ethnic Identity				
Interaction between ethnic identity and age:				
Among those ages 14-16				
High ethnic identity (compared to low)		6.41 [1.21, 33.92] *		6.57 [1.18, 36.65] *
Medium ethnic identity (compared to low)		13.35 [2.12, 84.09] **		12.89 [1.85, 89.94] *
Among those with low ethnic identity				
Ages 17/18 (compared to ages 14-16)		8.79 [1.22, 63.47] *		14.99 [1.30, 172.89] *

° p< 0.10
* p< 0.05
** p< 0.01
*** p< 0.005

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Output

Ethnic Identity

Ever Having Had Sex: Ethnic identity was significantly associated with not ever having sex, an association that did not change with the addition of self-efficacy variables. Compared to those with low ethnic identity, those with high ethnic identity had almost 0.40 times the odds of ever having sex, and those with medium ethnic identity had a little more than 0.35 times the odds of ever having sex.

Condom Use at First Intercourse. The effects of ethnic identity were found to interact with age. No significant association between ethnic identity and condom use at first intercourse was found for those ages 17 and 18. Among those ages 14-16, condom use at first intercourse was significantly different for those with high and medium ethnic identity compared to low ethnic identity. For those ages 14-16, the odds of condom use at first intercourse was 6.41 (p<.05) for those with high ethnic identity compared to low ethnic identity in Model II (control variables plus ethnic identity). This significant association increased slightly in Model IV (control, ethnic identity and self-efficacy) to 6.57 (p< .05). Those with medium ethnic identity had greater odds of condom use at first intercourse. In Model II, among ages 14-16, the odds of condom use at first intercourse was 13.35 times greater for those with medium ethnic identity compared to those with low ethnic identity (p<.01). This decreased slightly and became less significant with the addition of self-efficacy variables in Model IV: those with medium ethnic identity had 12.89 greater odds of condom use at first intercourse than those with low ethnic identity (p=0.01).

Self-Efficacy

Ever Having Had Sex. Self-efficacy interacted with gender—the impact of self-efficacy varied for males and females. Among females, those with high self-efficacy had about 4.50 greater odds of having had sex than those with medium self-efficacy (p<.005). There was no significant association between ever having had sex and self-efficacy among males, and also none in comparing high and medium self-efficacy level with low self-efficacy for each gender. Among those with high self-efficacy, the odds of ever having had sex were a little less than 0.20 times as likely for females than males (p<0.1). Among those with medium self-efficacy, the odds were 0.04 times as likely for females than males (p<.005). Among those with low self-efficacy, the odds were less than 0.1 times as likely for females than males. These approximate odds and their p values remained constant across the models that contained self-efficacy as a predictor variable.

Condom Use at First Intercourse. Self-efficacy was not significantly associated with condom use at first intercourse.

Control Variables

Sex Ever. Age was significant in all four models at the same level of significance (p<.005), and the odds of ever having sex were about two and a half times greater for students ages 17/18 than those ages 14-16 and under. Students with high and medium grades had lower odds of ever having had sex compared with students with low grades; those with high grades were about 0.30 times as likely to have had sex, and those with medium grades were about more than 0.40 times as likely to have had sex. The significance of high grades increased with the addition of self-efficacy variables (from p<.01 to p<.005), while the significance of medium grades decreased with the addition of

ethnic identity variables (from p<.05 to p<.10). There was no significant difference between those with high and medium grades. Living with both parents was also significant, as individuals with both parents in their homes had 0.41 the odds of ever having sex compared to those living with one or neither parent. This significance decreased (from p<.005 to p<.01) with the addition of ethnic identity and self-efficacy variables. There was significant interaction between acculturation and gender. Among females, the odds of ever having sex were about 4.50 times as likely for those with high acculturation than those with low acculturation. Among those with low acculturation, the odds of ever having had sex were about 0.10 times as likely for females than males, with decreasing significance with the addition of ethnic identity and self-efficacy variables. Condom Use at First Intercourse. Of all the control variables, only age was significantly associated with condom use at first intercourse and it interacted with ethnic identity.

DISCUSSION

This study of Latino adolescents attending high school in rural California analyzed how ethnic identity and self-efficacy are related to ever having had sex and condom use at first intercourse. This study hypothesized that higher ethnic identity would be associated with decreased odds of having had sex, and decreased condom use at first intercourse. It also hypothesized that self-efficacy would be associated with decreased odds of ever having had sexual intercourse and increased odds of condom use at first intercourse. This study also attempted to explore the potential association between ethnic identity and self-efficacy.

As expected, age, grades, living with two parents, gender, high American acculturation and self-efficacy were found to be associated with increased likelihood of having had sex. Interactions that affected the odds of having had sex were found between gender and acculturation, and gender and self-efficacy. The other outcome variable, condom use at first intercourse, was found to be associated with age and ethnic identity, between which interaction was found.

No Relationship Found Between Ethnic Identity and Self-Efficacy

In comparing the models to elucidate the effects of ethnic identity and self-efficacy on each other, there was no change in findings for either variable when the other variable and its associated interaction terms, if any, were added as a control. Consequently, we can describe the relationship of each variable on the outcomes without concern for potential confounding effects of the other. This implies that there is not a strong relationship between ethnic identity and self-efficacy.

Ethnic Identity

Study hypotheses regarding ethnic identity were made with the assumption that the linear bipolar model of acculturation and ethnic identity was true for this population and that high ethnic identity level would follow the opposite trend of high American acculturation and be associated with less likelihood of having had sex, and less likelihood of condom use at first intercourse. Study findings supported the study hypothesis for having had sex, but not for condom use at first intercourse. In fact, when it came to condom use, the study findings were the opposite of the study hypothesis. Interestingly,

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those with low ethnic identity had the highest likelihood for a negative outcome (i.e. having had sex, not using a condom at first intercourse). Compared to this low ethnic identity group, those with the highest ethnic identity had the next highest likelihood for a negative outcome, and those with medium ethnic identity had the lowest likelihood for a negative outcome. Those at the extremes of ethnic identity have higher odds for negative outcomes than those in the middle. Since study findings oppose the study hypothesis for condom use at first intercourse—which was based on the assumption that high ethnic identity correlates with low American acculturation—and instead found that sexual behavior patterns are not the same for high ethnic identity level and low American acculturation, the idea presented Chapter 1, that ethnic identity is different from acculturation is supported instead. Thus, the two-dimensional model—not the bipolar model—for acculturation and ethnic identity probably better describes this population.[**][15] Acculturation and ethnic identity are two distinct variables, and individuals with high ethnic identity should not be assumed to have low American acculturation.

This study found an association between ethnic identity and ever having had sex. Those with low ethnic identity had the highest odds of having had sex. Compared to this low ethnic identity group, those with the highest ethnic identity had the next highest odds of having had sex, and those with medium ethnic identity had the lowest odds of ever having had sex. The lack of interaction between ethnic identity and age or gender indicates that ethnic identity has the same association with sexual experience for individuals regardless of age or gender. It is interesting, however, that increasing levels of ethnic identity did not correspond to decreasing odds of having had sex. This leads

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[**] See Chapter 1, pages 10-11.

beyond a simple gradient to a complex relationship between ethnic identity and other factors.

Ethnic identity interacted with age for condom use at first intercourse, indicating that the two age groups differed in their odds of condom use at first intercourse. Ethnic identity has a much bigger impact on condom use for those ages 14-16 and under than the 17/18 age group. Among those ages 14-16, low ethnic identity was associated with much lower odds of condom use at first intercourse. However, increasing levels of ethnic identity did not correspond to increasing odds of condom use. Surprisingly, when compared to individuals with low ethnic identity, those with medium ethnic identity had much greater odds of condom use at first intercourse than those with high ethnic identity compared to low ethnic identity. This suggests a more complex relationship between ethnic identity and sexual behavior, one not simply on a gradient pattern.

The complexity of the associations between each outcome and ethnic identity indicates that having a level of ethnic identity above low is protective for positive sexual outcomes. Having a medium ethnic identity was most protective. The reason for this is unclear, but we can hypothesize explanations:

For example, there may be another variable that is affecting the relationships, such as religion. Catholicism plays an important part in Latino culture. With regard to ever having sexual intercourse, those with the lowest level of ethnic identity may not feel the pressure religious pressure to not have sex. Those with the highest ethnic identity, those most enveloped by their religion, may feel most compelled to rebel, experiment with the forbidden unknown, or may be so trusted by their parents that their level of supervision is reduced. This example may also be used to describe the findings

associated with condom use at first intercourse. Those with high ethnic identity may also pay more heed to Catholic teachings against use of prophylactics, such that although their high level of ethnic identity promotes condom use, they have lower odds of use than those with medium ethnic identity because they are less likely to buy them ahead of time. Those with medium ethnic identity have the protection that some level of ethnic identity brings, but pay less heed to Catholic teaching and consequently are more likely to buy condoms in advance. Those with low ethnic identity may not use condoms because they don't have the protective effects of ethnic identity, and don't have or heed Catholic pressures. In place of religion, the same argument can be made for the influence of family, positive peer group, mentors and similar social pressures that affect behavior.

Among those ages 17 and 18, there is no evidence that the odds of condom use differs across ethnic identity categories. However, this may be a consequence of the small cell sizes—out of the total 106 individuals in the sexually experienced sample, there are only 39 17/18 year-olds, and only 5 in the latter group have low ethnic identity. These data do not provide evidence that the sample percents for the different ethnic identity groups are really different for the 17/18 year-old age group.

Considering the protective effects of condom use on those with high and medium ethnic identity, particular concern develops for those with low ethnic identity. In the low ethnic identity sample, younger age was found to be associated with decreased use of condoms at first intercourse. When younger adolescents do have sex, they are less likely to use condoms.

Self-Efficacy

This study hypothesized that perceived self-efficacy would be associated with lower odds of ever having had sex, and higher odds of condom use at first intercourse.

Surprisingly, higher perceived self-efficacy was found to be associated with greater odds of sexual intercourse, at least for females. Among females, those with high self-efficacy had greater odds of ever having had sexual intercourse compared to those with medium self-efficacy. When comparing males and females in any self-efficacy level, males are more likely than females to have ever had sex. However, the odds of females having had sex are closer to the males' for females with the highest level of self-efficacy. Females with the lowest level of self-efficacy had the next greatest odds of having had sex when compared to males. Females with a medium level of self-efficacy followed a distant third. These findings are inconsistent with the literature and do not support the study hypothesis.[22] However, most previous studies have dichotomized self-efficacy assignments (eg. high or low), so there is the possibility that differences in various levels of self-efficacy were masked in these studies. Unlike these previous studies, this study divided the levels of self-efficacy into three categories.

Similar to the findings for ethnic identity and condom use at last intercourse, these findings suggest a complexity between self-efficacy and sexual activity that goes beyond a simple gradient. For example, adolescents with low perceived self-efficacy, who do not have the skills to manage sexual relations, may be more influenced by stronger social and affective factors such that they are more likely to engage in sexual intercourse. Adolescents with the highest level of perceived self-efficacy also engage in sexual intercourse, but may do so for a different reason: the strength of their beliefs in having

the skills to put their personal guidelines of sexual behavior into practice leads them to be sexually active. Aside from ever having had sex, however, the other patterns of sexual behavior between these two groups of sexually active teens may be quite different. For example, the more efficacious group may be more likely to use condoms, or have less number of partners. However, in examining condom use at first intercourse, this study found no association with self-efficacy. This may represent a lack of statistical power rather than no population effect.

The above conclusions about self-efficacy call attention to the idea that a perceived self-efficacy score does not indicate the beliefs of the adolescent. It simply characterizes how well the adolescent feels they can act on their beliefs.

Control Variables

Among control variables, age, grades, living with both parents, gender and acculturation were all found to be significantly associated with ever having had sexual intercourse. In addition, there was interaction between acculturation and gender.

Significant differences between age groups were found despite the rather coarse division between those ages 14-16 and ages 17/18. Not surprisingly, older students were more likely to have had sex. In this study, increasing grades were associated with decreased odds of ever having had sex. The odds of having had sex were significantly higher for those with the lowest grades compared to the two groups with higher grades. However, this study did not find a significant difference between the sexual activities of the two higher academic achievement groups. The causal relationship—whether low grades lead to sexual activity, or sexual activity leads to low grades—still remains to be

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elucidated, and it very well may be a reciprocal relationship. Students who did not live with both parents were more likely to have had sex. However, the significance of this finding was reduced with the addition of ethnic identity and self-efficacy variables, indicating that perhaps living with both parents has an effect on ethnic identity and self-efficacy. However, there is also the possibility that the addition of new variables drove the reduction in significance as a matter of reduced power of numerical calculation.

This study supported previous findings that females with high acculturation are more likely to have had sexual intercourse.[2, 32] American acculturation, likely in concert with Mexican acculturation, does affect sexual behaviors. This study did not find a significant association between males and acculturation level. However, it did find that between males and females with low American acculturation, males are much more likely to have had sex. This indicates that in this low acculturation group, males are more likely to engage in sexual behaviors, and thus are at greater risk for STDs and pregnancy. They may be engaging in sexual activity with females with high acculturation.

These findings indicate that sexual abstinence programs should be targeted to younger adolescents, with the lowest grades who do not live with both parents, females with higher acculturation rather than low acculturation, and among those with low acculturation, males rather than females.

STUDY LIMITATIONS

Several factors limit the conclusions of this study regarding the effects of ethnic identity and self-efficacy on the sexual behaviors of Latino adolescents. First, caution should be taken in generalizing these findings to populations beyond rural Latino teens

currently attending in high school. In order to take the survey, students had to get written parental consent and be in class on the day the survey was given. In addition, extra credit was given as an incentive for students to take the survey.[35] Consequently, the survey may have missed individuals who have less contact with their parents, individuals whose parents were not inclined to give consent for various reasons, individuals less engaged in school who may not have attended class or did not care enough to take the survey to get extra credit. Subjects that were included in the final sample had to have complete responses for all control, independent and dependent variables. Thus, individuals who did not care enough or did not understand well enough to complete the survey completely and honestly were not included in the study. As a result, this study may be missing the most vulnerable individuals and under-estimating the scope of the problem. Thus, care should be taken in applying these findings to high-risk adolescents.

Second, the students that participated may not be representative of all high school populations. Consideration should be taken in applying these study findings to all other high schools.

Third, school-based sampling produced an "Americanized" sample. 87% of the total study sample and 74% of those who had had sex were born in the United States. Among the non-U.S.-born, 51% of the total study sample participants, and 79% of those who had had sex had been in the U.S. for 10 years or more. Thus, individuals in this study may only represent parts of the full spectrums of acculturation, ethnic identity and self-efficacy.

Fourth, the small sample size created limitations in analysis and results. Lack of power due to small sample size sometimes created large confidence intervals for

significant findings, particularly for the smaller sample of sexually experienced individuals. In addition, the spectrum of ages had to be reduced to two age categories. Although significant differences were found between these two age groups, future research in this area should aim to discern differences between each age as much as possible.

Fifth, to maintain homogeneity, one individual born in El Salvador was dropped from the study, but there was no way to know whether other Latino individuals born in America or Mexico were from non-Mexican ethnicities.

Finally, SES was indirectly measured by using maternal education as a marker. Future studies should aim to measure SES as directly as possible so that differences in sexual behavior can be studied for different socio-economic levels.

IMPLICATIONS

Latinos make up the largest minority group in the United States and Latino adolescents in particular are making up a growing fraction of the Latino population. More than one-third of the Latino population is under the age of eighteen and they are increasing in their representation in the U.S. adolescent population. In the year 2000, Hispanic adolescents comprised 15.6% of the adolescent population aged ten through nineteen years. Projections indicate that by the year 2020, the Hispanic adolescent population will increase by 50% to comprise 22.5% of the adolescent population. It is imperative that we focus attention on the health needs of the Latino population.

The negative outcomes associated with Latino adolescent reproductive activity, especially the lower rates of condom and birth control use, the high pregnancy rate

among Latina females, and earlier sex activity among males have serious repercussions for the adolescent as well as society. These repercussions range from individual physiological illness and psychological hardship to weakening of social and economic fitness. Unfortunately, there is a dearth of literature on the reproductive health attitudes, behaviors and outcomes of Latino adolescents. Much more research is needed to map out the complex relationships between numerous variables that create the status quo. This research must be translated into understanding, and appropriate interventions are necessary for the individual as well as for the public good. Findings from this study suggest routes of reducing adolescent sexual activity and promoting safer sexual behaviors:

1) Future research should reduce the dichotomization of variables. Rather, it should aim to discern subtle differences across the spectrum for each predictor variable.

2) Qualitative research is necessary with in-depth field observations, focus groups, and interviews to understand adolescent interpersonal dynamics, thought processes and patterns of behavior. New variables should be sought to describe outcomes.

3) Ethnic identity and acculturation are two distinct variables and should be treated as such by future research. Since both are predictors of sexual behavior patterns, both are worthy of future study. Whether or not one is a better predictor than the other remains to be seen.

4) Rather than making comparisons based on ethnicity alone, measuring ethnic identity level allows elucidation of the rich diversity within each ethnic group,

and avoids gross labeling of diverse populations within one ethnicity. It should be used as a tool in predicting patterns of behavior.

5) Research involving the measurement of perceived self-efficacy should also characterize the beliefs of the individual in order to differentiate outcomes of individuals with different beliefs but similar levels of self-efficacy.

6) Abstinence programs should target those at highest risk. This study indicates that this group would include: younger adolescents, those with the lowest grades, those who do not live with both parents, females with higher acculturation rather than low acculturation, and among those with low acculturation, males rather than females, and those with the highest and lowest levels of self-efficacy.

7) Safer sex programs should target those at highest risk. This study indicates that this group would include: Those at opposing ends of the ethnic identity spectrum, with low ethnic identity, especially those 16 years of age and younger, and with high ethnic identity. Those mentioned above in item #4 above, who are at greatest risk of not abstaining from sex, should also be targeted for safer sex programs.

8) Programs should not only strive to impart knowledge about sex and safer sex, but strive to increase the self-efficacy of youth such that they feel that they can effectively translate their beliefs into action in sexual situations. However, as indicated by this study, increasing self-efficacy may backfire in creating greater sexual activity among those whose personal guidelines are

open to engaging in sexual activity. Self-efficacy programs should thus be sensitive and flexible to beliefs of adolescents.

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