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Youth Sexual Risk-Taking in Latin America:
Implications for Public Health and Policy in Mexico, Belize, and Guatemala

by

Denise Raquel Dunning

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Sociology

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Heather Haveman, Chair

Professor Jenna Johnson-Hanks

Professor Malcolm Potts

Spring 2012

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Abstract

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Denise Raquel Dunning

Doctor of Philosophy in Sociology
University of California, Berkeley
Professor Heather Haveman, Chair

This research investigates the principal factors that influence youth sexuality, exploring the multi-faceted forces that shape young people's sexual knowledge, attitudes, and practices. Seeking to shed light on the diverse social, cultural, and structural forces that contribute to youth sexual risk-taking, I conducted a quantitative study of 1686 high school students between the ages of 18 and 24 who live in the Mesoamerican region of southern Mexico, Belize, and Guatemala. My survey includes 95 multiple choice and open-ended questions that explore a broad range of factors, including: personal relationships and plans; knowledge and sources of information about sex, contraception, and HIV prevention; sexual experience and contraceptive use; attitudes and beliefs concerning sexuality; perceived risk and experiences with HIV; and social and demographic variables.

Conducted between May 2007 and July 2009, this study is informed by the 2008 Mexico City Ministerial Declaration 'Prevenir Con Educacion' (Preventing Through Education), a regional policy initiative that seeks to expand youth access to comprehensive sexuality education and services throughout Latin America. Within this policy context, I explore the ways in which school-based sexuality education influences young people's sexual knowledge, attitudes, and practices, in addition to examining how social norms shape youth sexuality across diverse cultural contexts in Latin America.

To contextualize this research, I integrate sociological theories of gender and sexuality that are framed within the context of economic development and globalization. Further, I incorporate empirical findings from public health research and programmatic models concerning the connections between knowledge, behavior, risk-taking, and policy interventions. Using multivariate analysis, I begin by separately examining the study results from Mexico, Belize, and Guatemala, analyzing the influence of the most salient independent variables within each national context. To best understand the ways in which these influences remain constant or diverge throughout the region, I then compare and contrast the results across the three countries.

These study findings demonstrate that four principal factors influence youth sexual behavior in Mesoamerica – school-based sexuality education, relationships and

communication with parents and peers, church attendance, and ethnicity. My findings validate the efforts of the Mexico City Ministerial Declaration by highlighting the need to provide Mesoamerican youth with comprehensive school-based sexuality education and services in order to reduce high rates of unwanted pregnancy, adolescent childbearing, and HIV/AIDS throughout the region. I conclude with recommendations concerning how the Ministerial Declaration could more effectively achieve its principal goals of improving adolescent sexual and reproductive health outcomes in Latin America.

TABLE OF CONTENTS

CHAPTER ONE Introduction	1
CHAPTER TWO Youth Sexual Risk-Taking in Mexico: Examining the Influence of Sexuality Education, Parental Relationships, and Peer Pressure	10
CHAPTER THREE Belizean Youth at Risk: HIV/AIDS and the Influence of School-Based Sexuality Education on Sexual Knowledge and Behavior	33
CHAPTER FOUR Adolescent Childbearing in Guatemala: Disparities in Mayan and Ladino Youth Sexual Knowledge and Behavior	55
CHAPTER FIVE Youth Sexual Risk-Taking in Mesoamerica: A Comparative Analysis of Youth Sexual Knowledge, Attitudes, and Practices in Mexico, Belize, and Guatemala	78
CHAPTER SIX Conclusion	105
APPENDIX A Survey Instrument	109
REFERENCES	125

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CHAPTER 1: INTRODUCTION

This research investigates the principal factors that influence youth sexuality, exploring the multi-faceted forces that shape young people's sexual knowledge, attitudes, and practices. Seeking to shed light on the diverse social, cultural, and structural forces that contribute to youth sexual risk-taking, I conducted a quantitative study of 1686 high school students between the ages of 18 and 24 who live in the Mesoamerican region of southern Mexico, Belize, and Guatemala. My survey includes 95 multiple choice and open-ended questions that explore a broad range of factors, including: personal relationships and plans; knowledge and sources of information about sex, contraception, and HIV prevention; sexual experience and contraceptive use; attitudes and beliefs concerning sexuality; perceived risk and experiences with HIV; and social and demographic variables.

Conducted between May 2007 and July 2009, this study is informed by the 2008 Mexico City Ministerial Declaration 'Prevenir Con Educacion' (Preventing Through Education), a regional policy initiative that seeks to expand youth access to comprehensive sexuality education and services throughout Latin America. Within this policy context, I explore the ways in which school-based sexuality education influences young people's sexual knowledge, attitudes, and practices, in addition to examining how social norms shape youth sexuality across diverse cultural contexts in Latin America.

To contextualize this research, I integrate sociological theories of gender and sexuality that are framed within the context of economic development and globalization. Further, I incorporate empirical findings from public health research and programmatic models concerning the connections between knowledge, behavior, risk-taking, and policy interventions. Using multivariate analysis, I begin by separately examining the study results from Mexico, Belize, and Guatemala, analyzing the influence of the most salient independent variables within each national context. To best understand the ways in which these influences remain constant or diverge throughout the region, I then compare and contrast the results across the three countries.

These study findings demonstrate that four principal factors influence youth sexual behavior in Mesoamerica – school-based sexuality education, relationships and communication with parents and peers, church attendance, and ethnicity. My findings validate the efforts of the Mexico City Ministerial Declaration by highlighting the need to provide Mesoamerican youth with comprehensive school-based sexuality education and services in order to reduce high rates of unwanted pregnancy, adolescent childbearing, and HIV/AIDS throughout the region. I conclude with recommendations concerning how the Ministerial Declaration could more effectively achieve its principal goals of improving adolescent sexual and reproductive health outcomes in Latin America.

I. Background

Youth sexual risk-taking is an important area for sociological exploration, as its principal consequences – including HIV/AIDS, sexually transmitted infections (STIs), and unwanted pregnancy – have serious implications for young people, their families, communities, and the development of their countries. On a global scale, almost one-quarter of people who are HIV-positive are under the age of 25, with the majority of new infections occurring in developing countries.¹ Young people represent 45% of all new infections and both researchers and policymakers remain at a loss to reduce youth HIV infection rates, despite large-scale interventions and funding to prevent the spread of the disease within this target population.²

In addition to the social and economic consequences of HIV/AIDS among young people, high rates of adolescent childbearing bring about numerous negative outcomes in many parts of the world, including increased rates of maternal mortality and unsafe abortion, and limited educational and economic opportunities for young women and their children.³ Early childbearing has been associated with lowered socio-economic status, curtailed educational achievement, and limited earning potential for young mothers.⁴ When young adults cut short their education or drop out of the work force due to HIV infections or unplanned pregnancies, numerous negative social and economic consequences ensue, not only for young people themselves, but also their families, communities, and countries.⁵ These challenges are exacerbated by limited educational and employment opportunities and conservative gender norms that heighten the negative consequences associated with youth sexual activity.⁶

II. Sociological Context

Two streams of research provide complementary perspectives on youth sexuality. First, social science research examines the broad social causes and consequences of youth sexual risk-taking, exploring how diverse cultural and economic factors affect youth sexuality, including how conservative gender norms influence young men's and women's likelihood of delaying sexual debut, effectively using contraception, and engaging in other sexual practices. Extensive research investigates the social construction of sexuality among marginalized groups, such as women of color and those deemed to be at high risk, such as men who have sex with men and transgender populations.^{7,8,9} Ongoing research not only demonstrates that conceptions of gender and sexuality are dynamic and differ across communities, but also continue to be created and reshaped by new social norms imported from other cultural contexts through globalization and media.¹⁰

Building upon extensive sociological research on gender and sexuality among adults, sociological research has also highlighted the need to better understand adolescence as a key developmental stage in which gender and sexuality take on more salient meanings and consequences. As they enter into early adulthood, young people move away from childhood and assume new roles, responsibilities, and risks in all aspects of their lives, many of which influence and in turn are shaped by their sexuality. Cultural norms for youth sexuality continually evolve through a constant tug of war between the pull of long-held cultural values and the push of growing exposure to differing values, beliefs, and opportunities.¹¹ Research has demonstrated that this transition to adulthood is a time of tremendous social, biological, and psychological

change for youth that serves as the foundation for young people's future wellbeing as adults.¹² Beyond shifting perceptions and norms for youth sexuality at a broader societal level, young people not only continuously adapt what it means to be a young man or woman within distinct cultural and historical contexts, but also how specific behaviors and interactions signal what type of young person they are and what type of adult they will become. For example, in a conservative community in which pre-marital sex is strictly taboo, a young woman who violates this norm may not only making a personal choice about a specific sexual behavior, but also may be making a statement about what type of young woman she is – one who refuses to conform to accepted conservative norms of sexuality and who is willing to accept the social sanctions associated with being labeled sexually promiscuous. In another example of a homophobic community, young men who are gay often marry or date women in order to conform to the 'macho' expected stereotypes of being husbands and fathers, while continuing to have sex with men in secret due to fear of rejection by their families and communities for refusing to conform to accepted social norms. Therefore, young people engage in sexual behaviors not simply because these actions may be pleasurable, but also because they may serve as signals indicating what type of person they are within their own cultural context.

As researchers have examined how social norms affect young people's understandings and experiences of sexuality, additional research explores how cultural norms for sexuality are shaped by broader economic and political factors and thereby may vary substantially by a country's level of economic development, even within the same region.¹³ For example, as Mexico, Guatemala, and Belize have experienced divergent historical trajectories, they now have disparate geopolitical positions in the global economic system, are comprised of different racial, ethnic, and linguistic groups, follow diverse religious traditions, and have achieved disparate levels of economic development. Not surprisingly, these historical, social, and economic differences may have important consequences for youth sexual practices in the three settings.¹⁴ The divergent colonial and post-colonial histories, as well as the distinctive economic, social, and political influences in Guatemala, Belize, and Mexico contribute to diverse findings concerning young men's and women's experiences, beliefs, relationships, and sexual practices across these cultural contexts.

Another component of sociological research that may shed light on theoretical and empirical analyses of youth sexuality is the area of social cohesion. This theory posits that where there is greater homogeneity within a community, individuals and their families are more closely connected to their communities.¹⁵ At the same time, heterogeneity creates barriers to social cohesion within a community and the greater the differentiation between members of a community – whether through ethnic or religious groups, socio-economic classes, or other distinct groups – the more extensive are the barriers to social intercourse. Applying these social cohesion theories to my own empirical findings helps to explain how the strength of a community's social fabric often reduces both the opportunities and the incentives for young people to engage in sexual risk-taking. Specifically, social cohesion makes it much more feasible for parents, community elders, and other adults within the community to establish and maintain higher levels of social control over young people – parents know who their adolescent children are going out with, neighbors are more involved in one another's (and one another's children's) lives, and community elders (including religious leaders, teachers, and municipal leaders) maintain strong authority and influence over community norms and expectations for young

people. By contrast, communities characterized by greater degrees of social disintegration often do not have the interpersonal connections necessary to conduct the same degree of surveillance over the actions of young adults, whether within their own or their neighbors' families.

III. Public Health Context

In addition to the social science theories and empirical studies that have important implications for youth sexuality, public health experts have conducted extensive epidemiological and demographic research on the relationship between youth sexual knowledge, practices, HIV prevalence, and adolescent birth rates. This public health research has examined factors that exacerbate young people's risk of unwanted pregnancy and HIV infection, including limited knowledge of effective prevention strategies, low availability of sexual and reproductive health services and information, and insufficient access to condoms and other forms of contraception.¹⁶ To date, the relationship between young people's knowledge and sexual practices is unclear, as studies examining the relationship between sexual knowledge and behavior have reported mixed results.¹⁷ Some have found positive associations,¹⁸ others have found negative associations,¹⁹ and still others demonstrate no association when controlling for social and demographic indicators.²⁰ This existing research suggests the need to better understand the linkages between knowledge and behavior within the context of broader social norms that influence youth sexual and reproductive health outcomes.²¹

Beyond contradictory public health findings concerning the linkages between knowledge and behavior, additional research highlights the potential for negative unintended consequences associated with the implementation of health interventions. Even in cases in which public health interventions achieve their stated risk-reduction goals, compensatory risk-seeking behaviors often offset risk-reduction behaviors and may even result in negative overall effects on public health.²² Within the field of youth sexuality, research has generated disturbing findings concerning the unintended consequences of safer sex campaigns – while some abstinence-only sexuality education programs do contribute to delayed age of first sexual intercourse, they also have been shown to contribute to higher levels of other risky sexual behaviors and subsequent negative outcomes.²³ Specifically, many of the young people participating in abstinence-only programs who abstain from sexual intercourse instead have unprotected oral sex, thereby contributing to increases in sexually transmitted infections.²⁴ These risk-reduction strategies therefore may not only fail to achieve their stated objectives, but they also may lead to unintended consequences that have negative impacts on both the target audience and the broader population.

Although the link between public policy interventions, increased knowledge, anticipated behavior change, and the achievement of desired public health objectives is plausible, research demonstrates that this relationship is much more complex and unclear than one might expect. My research seeks to contribute to the field's understanding of these linkages by exploring how sociological factors influence youth sexual practices. Building upon existing findings from the fields of public health and sociology, my research not only examines the diverse factors that influence youth sexuality, but also responds to recent policy developments in Latin America that have highlighted the need to better understand the influence of comprehensive sexuality education as a mechanism to reduce adolescent births, STIs, and HIV/AIDS.

IV. Policy Framework

In 2008, the Mexico City Ministerial Declaration ‘Prevenir Con Educación’ (Preventing Through Education) generated a renewed focus on the sexual and reproductive health needs of young people in Latin America, catalyzing a broad range of policy and programmatic initiatives throughout the region. The Ministerial Declaration is a regional initiative to expand young people’s access to comprehensive sexuality education and services.²⁵ The Ministerial Declaration emerged from the XVII International AIDS Conference held in Mexico City in August 2008, during which the Ministries of Health and Education of all Latin American governments committed to expanding access to comprehensive sexuality education and integrated sexual and reproductive health services for youth. This path-breaking Ministerial Declaration is the first of its kind, formally recognizing that “Sexuality is an essential part of being human.... it is necessary to provide quality education that includes comprehensive education on sexuality both as a human right, as well as one that contributes to present and future quality of life.”²⁶ Beyond acknowledging the inherent value of sexuality education and the need to increase access to information and services, the signatory countries committed to “Implement and/or strengthen multi-sectoral strategies of comprehensive sexuality education and promotion of sexual health, including HIV/STI prevention.”²⁷

The Ministerial Declaration is one of the most progressive global policy efforts in the field of public health, requiring the Ministries of Health and Education of all signatory countries to update sexuality education curricula to reflect evidence-based best practices and expand these improved youth sexual and reproductive health programs nationally.²⁸ By 2015, all participating countries have committed to reducing the number of schools that have not institutionalized comprehensive sexuality education by 75%, and reducing the number of young people who do not have access to sexual and reproductive health services by 50%.

Throughout Latin America, support for the Ministerial Declaration stems from a growing movement of advocates working to improve the sexual and reproductive outcomes of young people, who comprise a large proportion of the region’s total population. However, despite growing support for the Ministerial Declaration and increasing recognition of the importance of reducing adolescent childbearing and HIV/AIDS, policymakers remain divided over the best way to address the sexual and reproductive health needs of youth. Although all Latin American governments endorsed the Ministerial Declaration, its principal goal – increasing access to comprehensive sexuality education and services – remains highly controversial. Similar to the US, the merits of school-based sexuality education continue to be hotly debated throughout the region by policymakers, educators, public health practitioners, community and religious leaders, and sexual and reproductive rights advocates. Proponents assert that comprehensive, age-appropriate sexuality education beginning in elementary school is the most effective way to provide young people with the evidence-based information they need to make healthy decisions, avoid unwanted pregnancy, and prevent STIs including HIV/AIDS.²⁹ Opponents argue that comprehensive sex education programs encourage sexual experimentation and risk-taking among young people and argue instead for abstinence-only curricula emphasizing sexual abstinence as the only effective and moral way to prevent pregnancy and STIs/HIV.³⁰

Within the context of the Ministerial Declaration, this study builds upon existing research and program evaluations analyzing the effects of sexuality education by exploring the diverse factors that influence the sexual knowledge, attitudes, and practices of young adults in the Mesoamerican region of Mexico, Belize, and Guatemala.³¹ The central aim of this study is to identify predictors of youth sexual activity by examining a range of possible factors, including: relationships and communication with family and peers, knowledge about contraception and HIV prevention, future plans, ethnicity, religion, and sources of information about sexuality, including school-based programs. This study offers some initial insights into the broader social and cultural factors that affect youth sexuality, in addition to exploring the specific influence of sexuality education on young adults' sexual behavior in Mesoamerica.

V. Mesoamerican Context

This research focuses on Mexico, Belize, and Guatemala, three countries in Mesoamerica that have very large youth populations and face substantial challenges concerning youth sexual and reproductive health. In Mexico, approximately 29% of Mexico's 110 million inhabitants are under the age of 14.³² Belize also has a very large youth population, with 39% of the population currently under the age of 15.³³ In Guatemala; 42% of the total population is under the age of 15, making it one of the youngest populations in the region.³⁴ In addition to forming a large subset of the region's total population, young people's sexual and reproductive health needs in all three countries are great. For example, 44% of young Guatemalan women give birth before age 20. In Mexico, only 48% of women ages 15-24 who are sexually active use modern methods of contraception.³⁵ In addition, Belize's national HIV prevalence rate is 2.3%, with young Belizeans accounting for 40% of all new infections.^{36, 37}

Beyond these major sexual and reproductive health challenges, Mexico, Belize, and Guatemala are characterized by differing socio-economic and cultural realities for youth sexuality.* In examining the three countries jointly, several stark contrasts are evident. For example, Guatemala's population is much poorer than both Mexico and Belize – it has the lowest per capita GDP and the largest percent of the population living below the poverty line. As the wealthiest country, Mexico is at the opposite end of the spectrum for all these measures, with Belize falling in between the two. Demographically, Guatemala's population is the most rural, has the highest total fertility rate, and the lowest literacy rate. Once again, Mexico is at the opposite extreme, being the most urban, having the lowest total fertility rate, and the highest literacy rate, with Belize again falling in the middle of the spectrum. Guatemala also has the largest Mayan population, with Belize having the smallest Mayan population and Mexico falling in between the two. Correspondingly, Guatemala has the largest population whose native language is not Spanish, but is instead one of more than 20 indigenous Mayan languages.

These differing socio-economic, cultural, and demographic contexts not only influence youth sexuality in the three countries, but also affect efforts to fulfill the targets set forth under the Ministerial Declaration. Despite the clear need to reduce adolescent childbearing and youth HIV infection rates in all three countries, Mexico, Guatemala, and Belize have all achieved differing degrees of progress in meeting their commitments to the Ministerial Declaration. Varying political, cultural, and religious obstacles have limited both policymakers' and advocates' efforts

* See Table 1: Cross-Country Comparison

to expand sexual and reproductive health education and services throughout the region. Therefore, successful implementation of the Ministerial Declaration in each country will depend on increased political commitment and ongoing advocacy to ensure that the sexual and reproductive health needs of Mesoamerican youth are both well understood and adequately met.

VI. Research Sites

Mexico. I chose Chetumal as the research site for Mexico because numerous aspects of this city's population make it more comparable to Belize and Guatemala's populations than would be the case for other sites throughout Mexico. Part of the state of Quintana Roo, the city of Chetumal is located directly across the border from northern Belize and the city's size, ethnic composition, degree of urbanization, and socioeconomic characteristics make it much more similar to the research sites in Belize and Guatemala than Mexico City, Cancun, San Cristobal, or other cities in Mexico.

Belize. I had initially chosen Corozal, the country's northernmost city, located 30 minutes across the border from southern Mexico, as the second research site. However, because Belize's total population is so small, I was unable to survey a sufficiently large number of young adults within the city of Corozal. Therefore, I broadened the geographic scope of my research in Belize, conducting surveys throughout all six of the country's districts – including Orange Walk, Belize, Stann Creek, Danagriga, and Punta Gorda – to acquire a sample size comparable to that of the study populations in Guatemala and Mexico.

Guatemala. I chose the Department of Sololá as the site for my research because it is one of the more geographically isolated parts of the country in which the vast majority of the population is indigenous. The communities that constitute my research site have maintained more traditional values and practices than the larger cities, suburban areas, and other parts of the country characterized by greater degrees of migration, such as the border with Mexico or Belize.

VII. Sampling

Schools in Mexico, Belize, and Guatemala are among the most important institutions that shape the experiences, understandings, practices, and beliefs of young people. In addition to providing formal education, schools serve as one of the primary sites for socialization, transference of community norms and values, and social control. Further, because schools serve as an effective mechanism to contact large numbers of young adults for surveys and interviews, selecting a school-based sample is the best strategy for this research. In choosing which schools to select for participation in the survey, I used a stratified sampling method in each research site. Specifically, I selected some schools that have very little resources and in which students come from extremely poor families, some schools that are known for providing better-quality education and have students who come from more economically stable families, and some schools that fall in between.

For this research, I sampled young adults between the ages of 18 and 24 attending high school in the three sites. I have chosen to study young people between the ages of 18 and 24 because research indicates that this is the age bracket in which the majority of participants are the most

likely to have become sexually active (Lammers 2000). Although the majority of high school seniors in the three sites are between the ages of 18 and 20, I have extended the age range for analysis to age 24; due to poverty, unemployment, periodic school absenteeism and low educational quality of public schools, many students in the region do not finish their schooling until they are in their early twenties. In all three countries, I selected schools with student populations representing a broad cross-section of youth in their communities. Within each school, all students between the ages of 18 and 24 who attended school on the day the survey was administered participated in the research and are substantively representative of their peers in the three settings concerning numerous important factors, including ethnicity, race, religion, and socio-economic background.

Some selection bias may affect my data collection, as I have only sampled young adults who are currently attending high school. Therefore, my sample does not include certain sub-groups of young adults in the three countries. Specifically, my sample excludes youth who have already dropped out of school due to a wide variety of reasons, including economic necessity, family hardship, migration, unwanted pregnancy, and several other possible factors that may have required these young people to discontinue their studies. It is likely that the lives of these out-of-school youth are characterized by lesser socio-economic stability and family security than their peers who have stayed in school. As a result, the sub-population excluded from my study may have differing experiences, knowledge, and attitudes concerning sex, thereby making them substantially different from the young adults who did participate in my study.

VIII. Measures

To examine the diverse factors that influence youth sexual behavior, I developed a survey that includes 95 questions concerning respondents' knowledge, attitudes, and behaviors regarding sexuality, in addition to questions concerning broader social influences – including gender norms, religion, ethnic and cultural traditions, family and community support systems, relationships with parents and friends, and socio-economic factors (see Appendix A: Survey Instrument). I administered this survey to a total of 1686 young adults in the three sites, including: 542 in Chetumal, Mexico, 542 in Belize, and 602 in Sololá, Guatemala. Through these surveys, I also collected demographic data on each of the respondents, including age, sex, family income, religion, employment status, and parental occupations.

IX. Dissertation Structure

In my dissertation, I begin by examining each of the three research sites separately. In each country chapter, I explore my quantitative findings in depth – examining the descriptive statistics for the research site and using logistic regression to analyze the principal independent variables that influence youth sexual behavior within each country context. The final substantive chapter compares and contrasts the principal differences and similarities between the three countries, examining the differing effects of the independent variables I explore in each of the country-focused chapters. The conclusion focuses on the implications of my country-based and comparative findings for youth sexual and reproductive health policies and programs in Latin America and directions for future research.

TABLE 1: CROSS-COUNTRY COMPARISON[†]

	Guatemala	Belize	Mexico
Total Population	13,276,517	307,899	111,211,789
Population 0-14 years	34.9%	37.9%	29.1%
Median Age	19.4 years	20.4 years	26.3 years
Population Growth Rate	2.1%	2.2%	1.13%
Urban Population	49%	52%	77%
Life Expectancy	70.29 years	68.2 years	76.06 years
Total Fertility Rate	3.47 children/woman	3.36 children/woman	2.34 children/woman
HIV/AIDS Prevalence	0.8%	2.1%	0.3%
Ethnic Groups			
Mestizo	59.4%	48.7%	60%
Creole	N/A	24.9%	N/A
Mayan	40.3%	10.6%	30%
Garifuna	N/A	6.1%	N/A
White	N/A	N/A	9%
Other	0.2%	9.7%	1%
Religions			
Catholic	50%	49.6%	76.5%
Protestant	40%		
Pentecostal	N/A	7.4%	1.4%
Anglican	N/A	5.3%	N/A
Adventist	N/A	5.2%	N/A
Mennonite	N/A	4.1%	N/A
Jehovah's Witness	N/A	1.5%	1.1%
Other Protestant	N/A	N/A	3.8%
Other Non-Protestant	10%	14%	0.3%
None	N/A	9.4%	3.1%
Languages			
Spanish	60%	46%	92.7%
Creole	N/A	32.9%	N/A
Mayan languages	40%	8.9%	6.5%
English	N/A	3.9%	N/A
Garifuna	N/A	3.4%	N/A
German	N/A	3.3%	N/A
Other	N/A	1.4%	0.8%
Literacy Rate			
Male	75.4%	76.7%	92.4%
Female	63.3%	77.1%	89.6%
GDP	\$69.21 billion	\$2.485 billion	\$1.482 trillion
GDP per capita	\$5,200	\$8,100	\$13,500
Population Below Poverty Line	56.2%	33.5%	18.2%

[†] CIA World Factbook 2009

CHAPTER 2:

Youth Sexual Risk-Taking in Mexico: Examining the Influence of Sexuality Education, Parental Relationships, and Peer Pressure

I. ABSTRACT

CONTEXT:

Responding to high rates of teen pregnancy and STIs/HIV, the Mexico City Ministerial Declaration seeks to expand youth access to comprehensive sexuality education and services throughout Latin America.

METHODS:

Using data from a 2007 survey of 542 Mexican young people aged 18 to 24, logistic regression analysis examines relationships between sex education, age of first sex, condom use, relationships with parents and peers, and future plans.

RESULTS:

For both men and women, learning about sex in school decreased their likelihood of having had sex before age 16 (odds ratio, 0.52). Having close relationships with parents was associated with lower likelihood of having had sex (odds ratio, 0.57), and higher likelihood of consistent condom use among sexually-active respondents (odds ratio, 1.82). Although talking with parents about sex decreased the likelihood of early sexual debut (odds ratio, 0.12), talking with friends about sex increased the likelihood (odds ratio, 3.38). Talking with friends about sex also increased consistent condom use (odds ratio, 2.43), as did talking with friends about HIV/AIDS (odds ratio, 1.86). Planning to attend university increased consistent condom use (odds ratio, 3.07), although knowledge about contraception and HIV/AIDS did not influence sexual activity or condom use.

CONCLUSIONS:

Risky sexual behaviors are common among Mexican youth and comprehensive sexuality education is critical to lowering rates of unwanted pregnancy and STIs/HIV. These results stress both the need to expand comprehensive sexuality education in schools and the importance of engaging parents and young people as allies in efforts to reduce youth sexual risk-taking in Mexico.

II. INTRODUCTION

The merits of school-based sexuality education have been hotly debated in the academic literature, among policymakers, and within the field of public health. Proponents assert that comprehensive, age-appropriate sexuality education beginning in elementary school is the most effective way to provide young people with the evidence-based information they need to make healthy decisions, avoid unwanted pregnancy, and prevent sexually transmitted infections (STIs) including HIV/AIDS.³⁸ Opponents argue that comprehensive sex education programs encourage young people to engage in sexual risk-taking by providing them with information about contraception and argue instead for abstinence-only curricula emphasizing sexual abstinence as the only effective and moral way to prevent pregnancy and STIs/HIV.³⁹

Building upon existing research and program evaluations analyzing the effects of sexuality education, this study explores the diverse factors that influence the sexual knowledge, attitudes, and practices of young adults in Mexico.⁴⁰ The central aim of this study is to identify predictors of early sexual activity and condom use by examining a range of possible factors, including: sources of information about sexuality, relationships and communication with family and peers, levels of knowledge about contraception and HIV prevention, future plans, and religious affiliation. This study offers some initial insights into the influence of sexuality education on youth sexual activity and condom use in Mexico.

Analysis of school-based sexuality education in Mexico is needed and timely, responding to the 2008 launch of the Mexico City Ministerial Declaration *Prevenir Con Educación* (Preventing Through Education), a regional initiative to expand young people's access to comprehensive sexuality education.⁴¹ The Ministerial Declaration emerged from the XVII International AIDS Conference held in Mexico City in August 2008, during which the Ministries of Health and Education of all Latin American governments committed to expanding access to comprehensive sexuality education and integrated sexual and reproductive health services for youth. This path-breaking Ministerial Declaration is the first of its kind, formally recognizing that "Sexuality is an essential part of being human..... it is necessary to provide quality education that includes comprehensive education on sexuality both as a human right, as well as one that contributes to present and future quality of life."⁴² Beyond recognizing the inherent value of sexuality education and the need to increase access to information and services, the signatory countries committed to "Implement and/or strengthen multi-sectoral strategies of comprehensive sexuality education and promotion of sexual health, including HIV/STI prevention."⁴³

The Ministerial Declaration is one of the most progressive efforts of its kind, requiring Ministries of Health and Education to update sexuality education curricula to reflect evidence-based best practices within the field of youth sexual and reproductive health and expand these improved programs nationally.⁴⁴ By 2015, all participating countries have committed to reducing the number of schools that have not institutionalized comprehensive sexuality education by 75%, and reducing the number of young people who do not have access to sexual and reproductive health services by 50%.

In Mexico, the Ministerial Declaration stems from a growing recognition of the need to effectively address the sexual and reproductive needs of young people, who make up a large proportion of the Mexican population – approximately 29% of Mexico's 110 million inhabitants are under the age of 14.⁴⁵ The lives of young people in Mexico are drastically different than those of previous generations, as numerous economic, political, and cultural changes have transformed social norms of sexuality during the past fifty years.⁴⁶ For example, the average age of first marriage for young women in Mexico increased from 20.2 years in 1962⁴⁷, to 22.4 years in 1990⁴⁸, and again to 25.5 in 2008.⁴⁹ Therefore, young people now have more years in which they may be sexually active prior to getting married, and consequently have more years during which they may be exposed to unwanted pregnancy and HIV/AIDS, than did earlier generations.

Young people's age of first sex is a key variable for analysis in understanding risky sexual behavior.⁵⁰ Although not all sex is risky – consistent condom use with a monogamous partner significantly lowers an individual's risk of unwanted pregnancy and STIs/HIV – early sexual debut increases the number of years in which a young person may be exposed to unwanted pregnancy and STIs/HIV, and may be the beginning of subsequent risky behavior.⁵¹ Frequency and consistency of condom use is another crucial factor in examining youth sexual risk-taking, as young people who consistently use condoms with their sexual partners have significantly lower risk of unwanted pregnancy and STIs/HIV than do their peers.

The potential consequences of early sexual debut and inconsistent condom use are not only severe for young adults, but also for their families and communities. Unwanted pregnancies have harsh outcomes for young mothers and their infants, both for their immediate health status as well as for their long term educational and employment opportunities.⁵² Early childbearing has been associated with lowered socio-economic status, curtailed educational achievement, and limited earning potential for young mothers.⁵³ When young adults cut short their studies or drop out of the work force due to unplanned pregnancies or HIV infections, their potential economic productivity is reduced, contributing to higher rates of poverty for their families and communities over the long term.⁵⁴ These challenges are exacerbated by limited educational and employment opportunities and conservative gender norms that heighten the negative consequences associated with sexual activity among youth.⁵⁵

In addition to unwanted pregnancy, sexually-active young adults in Mexico are at risk of STIs, including HIV/AIDS. Although Mexico's national HIV seroprevalence is low (0.3%), rates of infection are much higher among specific sub-groups; most notably, one Mexican study found 15% of men who have sex with men are HIV-positive.⁵⁶ Further, because some of the most common STIs in Mexico – human papilloma virus (HPV), syphilis, and herpes – all increase an individual's biological risk of HIV infection, effective prevention and treatment of STIs is critical to mitigating the spread of HIV.⁵⁷

The relationship between young people's knowledge, perception of risk, and sexual practices is unclear.^{58, 59} According to sexual risk-reduction models, knowledge is a prerequisite to recognizing the potential negative outcomes associated with risky behaviors and taking action to change them.⁶⁰ However, studies examining the relationship between sexual knowledge and behavior have reported mixed results. Some have found positive associations,⁶¹ others have found negative associations,⁶² and still others demonstrate no association when controlling for

social and demographic indicators.⁶³ This existing research suggests the need to better understand the social norms that shape young adults' knowledge, attitudes, and sexual behaviors to most effectively address the sexual and reproductive health risks facing young adults.⁶⁴

III. METHODOLOGY

a. SAMPLE

The study is based on data from a written survey of 542 young adults between the ages of 18 and 24 that was conducted between May and December, 2007, in the city of Chetumal, Mexico. Study participants included 239 young men and 303 young women who were in their final year of high school in Chetumal, a medium-sized city located in the state of Quintana Roo on the Yucatan Peninsula of southern Mexico. Although the majority of high school seniors (497) participating in the study were between the ages of 18 and 20, the age range for analysis has been extended to age 24, as many students in Mexico do not finish their schooling until they are in their early twenties.

Using an informal stratified sampling method, the ten high schools selected for participation are representative of the socio-economic spectrum within Chetumal. While some participating schools have very little resources and serve students from extremely poor families, others are known for providing high-quality education to students who come from more economically stable families, and some schools fall in the middle of the spectrum. In addition to the ten schools that participated in the study, four more schools declined to participate. While the majority of the 14 principals agreed to allow their students to participate in the study, the four who declined said that their students were too far behind schedule for the academic year and therefore did not have time within their class schedule to participate. Within each participating school, all students between the ages of 18 and 24 who attended school on the day that the survey was administered participated in the study and are representative of their peers concerning numerous important factors, including ethnicity, race, religion, and socio-economic background. Therefore, the study findings are substantively representative of the broader population of young adults attending high school in the Yucatan peninsula of Mexico.

b. SURVEY

The US-based study author is a native Spanish speaker in her early 30s and the Chetumal-based researcher is a Mexican woman in her late 20s. The Mexican researcher participated in a two-day training seminar organized by the study author to learn about survey research administration, study procedures, and informed consent and privacy. To ensure the confidentiality and comfort of students participating in the study, the study author and researcher implemented the surveys in students' classrooms, asked teachers to leave the room during administration of the survey, and remained in the classroom to answer questions and address students' concerns.

The survey instrument contained 95 variables, including a combination of multiple choice and open-ended questions, divided into six sections: personal plans, relationships, and sources of information about sex; sexual experience and contraceptive use; attitudes and beliefs concerning sexuality; perceived risk and experiences with HIV; knowledge about pregnancy prevention, HIV transmission, and emergency contraception; and social and demographic variables.

Prior to administration of the full survey in all ten participating high schools, the study author conducted a pilot test of questionnaire's comprehensiveness, clarity, and completion time with 74 students, finding no substantial difficulties. The study author made only minor adaptations to the survey instrument, removing two questions which appeared to be confusing. In most cases, study participants completed the questionnaire in 40 minutes.

c. MEASURES

Building upon measures from previous studies of youth sexuality, the study author used multiple questions to examine discrete constructs from a range of angles.⁶⁵ For example, to understand survey participants' relationships with their parents, four single-item indicators serve as measures using the following wording: "In your opinion, do your parents support the majority of your decisions and actions?"; "Do you share personal aspects of your private life with your parents?"; "Do you talk with your parents about sex?"; "Do your parents know that you are sexually active?"; "Do you live with your biological mother and father?" All four items are coded dichotomously.

The author created a Conservative Sexual Morality Scale to assess respondents' agreement with more traditionally conservative views about human sexuality. This composite indicator consisted of four three-point Likert-type items exploring perceptions about premarital sex among men and women, same-sex behavior, and abortion using a three-point scale where 1=Never wrong, 2=Sometimes wrong, and 3=Always wrong. The possible score for this scale was 1-9, with higher scores pointing to more conservative views of sexuality. The mean score was 6.04, with a standard deviation of 0.095, and Cronbach's alpha was 0.80.

Two questions examined how and when respondents first learned about sex. The first question used the following wording: "Where did you learn about sex for the first time?" with the following response choices: From my mother, From my father, From my brothers/sisters, From my friends, In school, In church, On television, Books, and Other. The second question used the following wording: "How old were you when you learned for the first time about sex, or sexual intercourse?"

Two questions explored knowledge about HIV and contraception, for which respondents were asked to circle all correct possible responses. Seven items assessed participants' knowledge of HIV transmission (eg. "HIV/AIDS is transmitted by mosquitoes" and "HIV/AIDS is transmitted by having vaginal sex with an infected person"). The range of possible scores was 1-7, with higher scores pointing to greater knowledge about effective mechanisms to prevent HIV. Eight items assessed participants' knowledge of contraception (eg. "A couple can prevent an unwanted pregnancy by washing with vinegar" and "A couple can prevent an unwanted pregnancy by using a condom"). The range of possible scores was 1-8, with higher scores pointing to greater knowledge about contraception.

The median age of first sex among survey respondents is 16. The survey median age coincides with the literature on sexual initiation, in which early sexual debut is often defined as the experience of sexual intercourse at age 15 or earlier.⁶⁶ Therefore, in the multivariate analysis of age of first sex, the study author coded as 0 those who had sex at age 15 or younger, and coded as 1 those who had not become sexually active by age 16.

Five variables examined contraceptive use among sexually-active survey participants. “Did you use contraception the last time you had sex?” is coded dichotomously. “In case you had sex during the last month, how frequently did you use contraception?” used a four-point scale where 1=Always, 2=Almost Always, 3=Sometimes, 4=Never. “In case you use contraception, what type of contraception do you use most frequently?” and “If you used contraception the last time you had sex, what type of contraception did you use?” had six pre-coded answers with the following response choices: Contraceptive pill, Condom, Diaphragm, Rhythm method, Other, None. The question “How frequently do you use condoms?” used a five-point scale where: 1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, and 5=Always. In Mexico, 53% of survey participants responded that they Never, Rarely, or Sometimes used condoms, in contrast to 47% who responded that they Frequently or Always used condoms. Therefore, in the multivariate analysis of consistent condom usage, the study author coded those who responded Never, Rarely, and Sometimes as 0 and those who responded Frequently or Always as 1.

Three single-item indicators serve as measures reflecting whether respondents engage in specific high-risk behaviors that further heighten their vulnerability to unwanted pregnancy and STIs/HIV. “When you have sex, how frequently are you under the influence of alcohol or drugs?” used a four-point scale where 1=Never, 2= Sometimes, 3=Almost always, 4=Always. “Have you ever paid to have sex?” and “Have you ever been paid to have sex?” were coded dichotomously.

d. DATA ANALYSIS

The author analyzed study data with STATA-10, using t-tests and chi-square tests to determine significant differences at $p < .05$ for bivariate analysis, and logistic regression for multivariate analysis. To explore gender differences, the author analyzed all results both jointly and separately for females and males.

IV. RESULTS

a. SAMPLE CHARACTERISTICS

Of the 542 young adults who participated in the study, the mean age was 18.8 for men and 18.6 for women (Table 1). The majority of respondents described their ethnicity as Mestizo (74.2% for men and 69.9% for women), with smaller proportions identifying as indigenous (17.7% of men and 22.5% of women). The majority of respondents identified as Catholic (73.8% of men and 75.0% of women), with smaller proportions identifying as Protestant (16.4% of men and 19.1% of women). There were some striking gender differences – although 38.4% of men reported having an occupation, only 19.5% of women did. While 81.0% of men reported still living with their parents, only 74.1% of women did, likely relating to the fact that 6.9% of young women were married at the time of the survey, in contrast to only 5.2% of men.

b. KNOWLEDGE

Participants’ knowledge of HIV/AIDS was generally strong, despite some misperceptions about the correct ways to prevent transmission (Table 2). While 93.1% of survey participants knew that HIV could be transmitted through vaginal sex, 94.2% knew HIV can not be transmitted through

kissing, and 91.0% knew that HIV can be transmitted by blood, only 86.3% correctly believed that it could not be transmitted by mosquitoes.

Participants' knowledge of the ways in which a couple can prevent unwanted pregnancy varied substantively, demonstrating widespread misunderstanding and lack of knowledge concerning effective contraceptive methods. Specifically, 98.5% knew that having sex standing up will not prevent an unwanted pregnancy and 91.4% correctly responded that condoms can be used to prevent pregnancy. However, only 79.7% correctly answered that the contraceptive pill can be used to prevent pregnancy and 52.3% correctly answered that abstinence prevents unwanted pregnancy. For the majority of pregnancy-related questions, female respondents had higher correct response rates than male.

Although respondents did have numerous incorrect assumptions about emergency contraception, 74.5% of participants correctly responded that emergency contraception is a method to prevent pregnancy up to five days after sexual intercourse. Knowledge of 'the morning-after pill' was higher than anticipated, given low levels of knowledge throughout the region.⁶⁷

For sources of knowledge about sex, 12.7% of men and 25.9% of women first learned about sex from their mother, in contrast to 6.1% of men and 1.4% of women who first learned about sex from their father. While 50.7% of men and 57.6% of women first learned about sex in school, another 14.8% of men and 5.5% of women first learned about sex from their friends. Further, 14.0% of men first learned about sex from books, television, church, or other sources, in contrast to 9.7% of women.

c. ATTITUDES

Table 3 reports respondents' attitudes concerning six value statements relating to sexuality, the majority of which demonstrate gender differences in responses. While 23.5% of men and 28.4% of women said it is always wrong when a woman has premarital sex, 29.6% of men and 20.1% of women said it is never wrong. When asked about community values, 25.9% of men and 40.6% of women said it was important in their community for a woman to be a virgin when she gets married. In comparison, 18.6% of men and 27.7% of women said it is always wrong when a man has premarital sex while 38.9% of men and 22.5% of women said it is never wrong. When asked about community values, 13.3% of men and 14.2% of women said it was important in their community for a man to be a virgin when he gets married.

Concerning same-sex behavior, 56.4% of men and 46.0% of women said it is always wrong for two men or two women to have sexual intercourse, in contrast to the 20.4% of men and 23.2% of women who said it is never wrong. In the area of reproductive rights, 78.2% of men and 82.4% of women said it is always wrong for a woman to have an abortion, in contrast to the 6.0% of men and 2.0% of women who said it is never wrong.

d. PERCEPTIONS & EXPERIENCE WITH HIV/AIDS

Although 94.4% of survey participants reported that they are concerned about getting HIV/AIDS and 90.2% believe that their friends are also concerned about it, only 28.7% of men and 26.4% of women said that the possibility of getting HIV affects their sexual practices (Table 4). Interestingly, whereas 14.3% of survey participants believe that their friends have a high risk of

contracting HIV, only 6.3% of survey participants believe that they themselves have a high risk of infection.

In total, 73.2% of respondents said that they talk to their friends about HIV/AIDS. While 18.9% of respondents said that they know someone who has HIV/AIDS, only 2.3% of those knew three or more people who have the virus. Gender differences were evident in the rate of respondents who had been tested for HIV (16.5% and 10.8% of men and women, respectively). Of those who had been tested, only 8.3% had been tested three or more times.

e. RELATIONSHIPS

Table 5 reflects data concerning relationships and communication with family members and peers. Most respondents said their parents support their decisions and actions (88.2% and 86.7% of men and women, respectively) and that they share personal aspects of their private lives with their parents (55.5% and 59.1% of men and women, respectively). However, 46.0% of men and 61.4% women reported that they talk with their parents about sex. Of sexually-active respondents, only 51.2% of men and 30.9% and women reported that their parents know that they are sexually active.

The majority of respondents (83.5% and 81.8% of men and women, respectively) said that they talk with their friends about sex. A smaller majority (69.8% and 75.9% of men and women, respectively) said they talk with their friends about HIV/AIDS. Of the sexually-active survey respondents, 75.2% of men and 78.8% of women said that their friends know they are sexually active.

f. SEXUAL BEHAVIORS AND EXPERIENCE

In total, 71.8% of men reported having ever had sex, in contrast to only 46.9% of women (Table 6). Of the 309 survey respondents who are sexually active, numerous distinctions between the 171 men and 138 women were notable in the realm of behaviors and experience. Male respondents were significantly more likely than females to have had sex before age the median age of 16 (39.8% and 8.6% of men and women, respectively). While male survey respondents reported an average of 4.5 lifetime sexual partners, female respondents reported an average of 2.4 lifetime sexual partners. In addition, 38.2% of men and 19.4% of women reported having had four or more sexual partners in their lifetimes. In the area of concurrent sexual relationships, 31.0% of men and 13.7% of women reported having had more than one sexual partner during the past month. Regarding same-sex relationships, 92.2% of men and 97.0% of women report having had sex only with a member of the opposite sex and never with someone of their own sex.

In the area of sexual risk-taking, gender differences are again significant. While 86.7% of women reported never using alcohol or drugs during sex, only 71.4% of men reported the same. Among sexually-active respondents, the finding that 95.7% of males and 97.7% of females report having had vaginal sex is not surprising. However, the finding that 28.7% of men and 15.8% of women report having had anal sex is more than double the rates found in earlier studies.⁶⁸

For commercial sex, 9.5% of men report having paid for sex, in contrast to only 2.2% of women. Surprisingly, 11.9% of men report having been paid for sex, in contrast to only 1.5% of women.

This finding is astonishing – although numerous studies have investigated men’s use of commercial sex workers, existing research has not yet shown such high rates of men being paid to have sex.⁶⁹ In the survey, two questions explored commercial sex practices. The first question asked “Have you ever paid to have sex?” and the following question asked “Have you ever been paid to have sex?” In light of the ordering and directness of these questions, the study author does not doubt these findings, despite the surprising nature of these results. Instead, it is probable that the unexpectedly high rates of men being paid to have sex in Chetumal is related to the extensive sex tourism that takes place in the Yucatan peninsula of Mexico,⁷⁰ which likely also corresponds to the unexpectedly high rates of anal sex reported by survey respondents. Further research is needed to explore the relationship between sex tourism and commercial sex practices among young men and women in southern Mexico.

g. CONTRACEPTIVE USE & ACCESS

For sexually-active survey participants, 78.7% of men and 69.4% of women reported having used some form of contraception the last time they had sex (Table 7). Of those, 6.3% of men and 8.1% of women used the pill, 73.1% of men and 50.0% of women used a condom, 4.4% of men and 12.9% of women used the rhythm method, and 3.7% of men and 6.5% of women used some other form of contraception. When asked how frequently they use condoms, 8.3% of men and 25.0% of women said never, whereas 37.5% of men and 22.7% of women said they always use condoms. Of all survey participants, 91.9% of men and 66.8% of women said that they have access to condoms, but only 62.8% of men and 39.7% of women said that they feel comfortable getting them.

h. MULTIVARIATE ANALYSIS

School-Based Sexuality Education

Table 8 uses multivariate analysis to demonstrate that having first learned about sex in school is associated with lower odds of having had sex (odds ratio, 0.56), and of having had sex before the median age of 16 (odds ratio, 0.52). Similar effects are evident when separate analyses were conducted by gender, despite some distinctions in the level of sexual activity. Whereas women who first learned about sex in school are less likely to ever have had sex (odds ratio, 0.50) or to have had sex before age 16 (odds ratio, 0.31), the differences are not statistically significant for men.

Relationships and Communication With Parents

Young people who talk to their parents about sex are less likely to ever have had sex (odds ratio, 0.29) or to have sex before age 16 (odds ratio, 0.12). Some gender differences are evident concerning relationships and communication with parents. Young women who shared personal aspects of their private lives with their parents are significantly less likely to have had sex than their peers (odds ratio, 0.36), as are those who currently live with their parents (odds ratio, 0.38), in contrast to young men for whom there are no significant differences. Concerning sexual debut, young men who talk with their parents about sex are significantly more likely to have had sex before age 16 (odds ratio, 2.01), but there is no significant difference for women.

Relationships and Communication With Friends

While young women who talk with their friends about sex are more likely to have had sex than those who do not (odds ratio, 3.18), this effect is even stronger for young men (odds ratio, 5.39). In the area of early sexual debut, young men who talk to their friends about sex are significantly more likely to have sex before age 16 (odds ratio, 4.79), although this effect is not statistically significant for women.

Condom Usage

Important differences are also evident between young men and young women in the area of condom use. While young men who talk to their parents about sex are significantly more likely to report that they ‘always’ or ‘almost always’ use condoms (odds ratio, 2.42), this difference is not statistically evident for women. Young men who talk to their friends about HIV/AIDS are more likely to consistently use condoms (odds ratio, 2.23), although this effect is not statistically significant for women. Further, young men who plan to attend university after completing high school are much more likely to consistently use condoms (odds ratio, 6.78) in contrast to those who do not plan to continue their studies, although this effect was not significant for women.

Knowledge

The multivariate analyses demonstrated no significant effects of knowledge about contraception or HIV prevention on sexual activity, age of first sex, or condom use.

V. DISCUSSION

a. KEY FINDINGS

This study demonstrates that having first learned about sex in school, in contrast to any other setting, increases the likelihood that young people will delay sexual debut, a key factor for reducing sexual risk-taking. One possible explanation for this finding is a relationship between educational success and decreased levels of sexual risk-taking – those students who first learned about sex in school may also pay closer attention in school and have greater perceived likelihood of academic success. Consequently, they may be more likely to delay sexual debut for fear that an unwanted pregnancy or STI/HIV will limit their academic potential and professional future. This finding is consistent with results from the multivariate analysis demonstrating that young men who plan to attend university, a likely proxy for perceived academic potential, are significantly more likely to consistently use condoms.

Similar to findings from previous studies demonstrating that knowledge does not influence behavior,^{71, 72} this study did not find a relationship between survey participants’ knowledge about contraception or HIV prevention and their reported sexual practices. Bivariate analyses did not demonstrate associations between survey participants’ levels of knowledge and their sources of information about sex. Further, bivariate analyses did not demonstrate an association between respondents who first learned about sex in school and those who plan to attend university. These findings highlight the need to further explore exactly why first learning about sex in school, independent of knowledge, is associated with delayed sexual debut.

Because this research took place prior to Mexico’s launch of the Ministerial Declaration, very few, if any, survey respondents had participated in comprehensive sexuality education programs

encouraging condom use as an effective strategy to prevent unwanted pregnancy and STIs/HIV.⁷³ Evidence from US-based research demonstrates that although sexuality education programs emphasizing abstinence may have some success in encouraging young people to delay sexual intercourse, they may also discourage young people from using condoms and other forms of contraception when they do become sexually active.⁷⁴ Longitudinal studies examining how young people's knowledge and practices change as a result of the Ministerial Declaration will be critical to understanding how different types of school-based sexuality education programs affect youth sexual activity and condom use in Mexico.

In addition to demonstrating the importance of school-based sexuality education, this study supports earlier findings concerning the crucial role played by parents in influencing youth sexual risk-taking.^{75, 76} Survey participants who feel that their parents support their decisions are significantly less likely to ever have had sex. Further, sexually-active young men who talk to their parents about sex are significantly more likely to consistently use condoms when they do become sexually active. By having supportive relationships with their children and by talking openly with them about sex, parents can help young adults delay sexual debut and consistently use condoms when they do become sexually active. Therefore, providing parents with the training and resources they need to talk effectively with their children about sex has the potential to vastly enhance the Ministerial Declaration's efforts to reduce rates of unwanted pregnancy and STIs/HIV among Mexican youth.

In addition to the importance of school-based sexuality education and relationships with parents, these findings demonstrate that peer communication has very strong effects on young people's sexual practices. The majority of young people talk to their friends about sex and those who do are both significantly more likely to have had sex and to become sexually active before age 16. This finding may be the result of young people experiencing peer pressure to have sex – the more that young people talk to their friends about sex, the more they may feel the need to conform to perceived social norms by also engaging in sexual activity, with even greater effects for men than women. At the same time, young people who talk to their friends about sex and about HIV are also significantly more likely to consistently use condoms when they do become sexually active. These findings indicate that peer pressure creates both vicious and virtuous cycles for youth sexual risk-taking, as young people are highly influenced by their peers in the areas of sexual debut and condom use. Further, this study demonstrates that young men, to a much greater extent than young women, are strongly influenced by their relationships with parents and peers.

These gender differences echo existing research highlighting how Mexican norms of masculinity require young men to conform to 'macho' stereotypes by having sex early, often, and with multiple partners, while penalizing young women who do the same.⁷⁷ Paradoxically, while young men who are not sexually active risk being seen as weak and effeminate, young women who are sexually active risk being labeled as promiscuous for failing to conform to social standards of purity and chastity.⁷⁸ Gender variations in condom use and sexual activity among respondents, in addition to the unexpected findings concerning the high percentages of young men who have been paid to have sex, merit further investigation into the cultural norms that create differing social pressures, risks, and opportunities for young men and women in Mexico.

b. LIMITATIONS

This study has certain limitations. Some selection bias may affect data collection, as the study author only sampled young adults between the ages of 18 and 24 who are currently attending high school. Therefore, the sample both excludes younger adolescents and also those young adults who already dropped out of school due to a wide variety of reasons, including economic necessity, family hardship, migration, unwanted pregnancy, and numerous other factors that may have required these young people to discontinue their studies. It is likely that the lives of out-of-school youth are characterized by lesser socio-economic stability and family security than their peers who have stayed in school. As a result, the sub-population excluded from the study may have differing experiences, knowledge, and attitudes concerning sex, thereby making them substantially different from the young adults who did participate in this study. Thus, caution is necessary when generalizing results from this study to out-of-school youth, younger adolescents, and other sub-populations of young adults.

VI. CONCLUSIONS AND RECOMMENDATIONS

Increased access to comprehensive sexuality education is critical to reducing youth sexual risk-taking. These study findings validate the efforts of the Mexico City Ministerial Declaration by demonstrating the need to provide Mexican young people with comprehensive school-based sexuality education in order to reduce rates of unwanted pregnancy and STIs/HIV. Further, these results indicate that four principal factors – access to sexuality education, positive relationships and open communication with parents, peer influences, and future plans and educational opportunities – are critical to encouraging young people to delay sexual debut and consistently use condoms when they do become sexually active.

Although the Ministerial Declaration's strategy is laudable and has the potential to improve youth sexual and reproductive health outcomes in Mexico, these efforts could be even more effective by engaging parents in efforts to reduce youth sexual risk-taking. Beyond the current scope of the Ministerial Declaration, Mexico's Ministries of Health and Education should integrate parents into broader comprehensive sexuality education efforts. Providing parents with training about how to establish and maintain positive, supportive relationships with their children, as well as talk to their children directly and openly about sex, could vastly expand the positive effects of school-based sexuality education programs. Given the crucial role played by parents in influencing their children's decisions concerning sexual initiation and condom use, failure to include parents in national sexuality education efforts is a wasted opportunity to improve youth sexual and reproductive health in Mexico.

This study also demonstrates the pivotal influence of peers on young people's sexual practices, highlighting the need to promote the social acceptability of delayed sexual debut and consistent condom use among youth, especially among young men. These findings echo evaluations from peer education models illustrating the positive results of involving young people as leaders in efforts to reduce sexual risk-taking.⁷⁹ Because young people serve as role models for one another and strongly influence sexual norms for their peers, directly involving young people in the design and implementation of the Ministerial Declaration's efforts could greatly expand its effectiveness. These findings underscore the importance of exploring new approaches to transform the social norms that simultaneously require young men to engage in sexual risk-

taking as a validation of their masculinity, while penalizing young women who engage in sexual activity. For example, the Ministries of Health and Education should engage young people in the creation of popular marketing and social media campaigns that promote new norms of sexuality encouraging delayed sexual debut and condom use for young men and women. Incorporating lessons learned from peer education approaches and recognizing young people's inherent knowledge of their own needs for information and services may enhance the Ministerial Declaration's success.

Since the Ministerial Declaration was signed in 2008, Mexico has made significant progress in increasing access to comprehensive sexuality education and services for young people, fulfilling 38.5% of its commitment to achieving the targets set by the deadline of 2015.⁸⁰ While sustaining ongoing work is crucial to fulfilling these targets, expanding the existing scope of the Ministerial Declaration is necessary to not only reduce rates of adolescent pregnancy and STIs/HIV in Mexico but also transform the broader social norms that heighten youth sexual risk-taking. Given the inter-connected forces that influence youth sexuality, the Ministerial Declaration should adopt a multi-faceted approach that not only provides young people with access to comprehensive sexuality education and services, but also goes beyond school-based settings by actively engaging parents and young people as allies in youth sexual risk-reduction efforts.

TABLE 1:
Percentage distribution of respondents aged 18–24 in a sample of young adults in Mexico, by selected characteristics, according to gender

	MEN (N = 239)		WOMEN (N = 303)	
Sex	239		303	
Age (Avg, St Dev)	18.80	1.23	18.60	1.07
Have ever had sex	71.8%		46.9%	
Ethnicity				
Indigenous Ethnicity	17.7%		22.5%	
Mestizo Ethnicity	74.2%		69.9%	
Creole Ethnicity	0.0%		0.0%	
Garifuna Ethnicity	0.0%		0.0%	
Other Ethnicity	8.1%		7.6%	
Religion				
Catholic	73.8%		75.0%	
Protestant	16.4%		19.1%	
Other Religion	9.8%		5.9%	
Church Attendance				
Attend Church more than once per week	12.3%		17.2%	
Attend Church once per week	17.8%		22.5%	
Attend Church twice per month	4.1%		8.1%	
Attend Church once per month	20.1%		18.6%	
Attend Church once per year	28.8%		22.8%	
Never attend Church	16.9%		10.9%	
Family Income in USD (Avg, St Dev)	\$8,039	\$14,951	\$5,787	\$14,867
Number of Siblings (Avg, St Dev)	2.70	1.74	2.75	1.86
Live With Parents	81.0%		74.1%	
Currently Married	5.2%		6.9%	
Work and Attend School	38.4%		19.5%	

TABLE 2:
**Percentage distribution of responses to questions on sources of information
about sex, knowledge of HIV transmission, pregnancy prevention, and
emergency contraception, by gender**

	MEN (N = 239)		WOMEN (N = 303)	
First Sources of Information				
First learned about sex from Mother	12.7%		25.9%	
First learned about sex from Father	6.1%		1.4%	
First learned about sex from Brothers/Sisters	1.7%		0.0%	
First learned about sex from Friends	14.8%		5.5%	
First learned about sex from School	50.7%		57.6%	
First learned about sex from Church	0.4%		0.0%	
First learned about sex from Television	3.9%		2.8%	
First learned about sex from Books	7.4%		5.9%	
First learned about sex from Other Source	2.2%		1.0%	
Age when they learned about sex for the first time (Avg, St Dev)	12.48	0.16	12.31	0.15
Knowledge About HIV Transmission				
Think that HIV can be transmitted by shaking hands with an infected person	0.0%		0.0%	
Think that HIV can be transmitted by mosquito bites	18.4%		10.1%	
Think that HIV can be transmitted by vaginal sex with an infected person	5.6%		8.1%	
Think that HIV can be transmitted by kissing an infected person	6.4%		5.4%	
Think that HIV can be transmitted by blood	9.4%		8.7%	
Think that HIV can be transmitted by sharing utensils with an infected person	3.9%		2.3%	
Think that HIV can be transmitted by smoking marijuana with an infected person	1.7%		1.0%	

TABLE 2a:
Percentage distribution of responses to questions on sources of information
about sex, knowledge of HIV transmission, pregnancy prevention, and
emergency contraception, by gender

	MEN (N = 239)	WOMEN (N = 303)
Knowledge About Pregnancy Prevention		
Think that pregnancy can be prevented by washing with vinegar	99.1%	98.3%
Think that pregnancy can be prevented by using the pill	77.7%	81.1%
Think that pregnancy can be prevented by using emergency contraception	52.0%	60.3%
Think that pregnancy can be prevented by abstinence	45.0%	57.9%
Think that pregnancy can be prevented by using a condom	90.4%	92.3%
Think that pregnancy can be prevented by having sex standing up	99.1%	98.0%
Think that pregnancy can be prevented by having sex during the woman's period	85.2%	90.6%
Think that pregnancy can be prevented by having sex for the first time	99.6%	99.3%
Knowledge About Emergency Contraception		
Think that emergency contraception is a monthly method used to prevent pregnancy	82.2%	81.7%
Think that emergency contraception is a method used to cause abortion	80.3%	84.2%
Think that emergency contraception is a method used to prevent HIV/AIDS	98.1%	99.3%
Think that emergency contraception is a method used to prevent pregnancy up to 5 days after sexual intercourse	70.9%	77.3%
Think that emergency contraception is a method used to prevent pregnancy that damages a woman's health	78.4%	80.2%

TABLE 3:
Percentage distribution of responses to questions on premarital sex, same-sex behavior, abortion, and community values, according to gender

	MEN (N = 239)	WOMEN (N = 303)
Perceptions of Community Values		
Believe it is important in his/her community for a woman to be a virgin when she gets married	25.9%	40.6%
Believe it is important in his/her community for a man to be a virgin when he gets married	13.3%	14.2%
Opinions About Same-Sex Behavior		
Believe that when two people of the same sex have intercourse, it is always wrong	56.4%	46.0%
Believe that when two people of the same sex have intercourse, it is sometimes wrong	23.1%	30.9%
Believe that when two people of the same sex have intercourse, it is never wrong	20.4%	23.2%
Opinions About Pre-Marital Sex		
Believe that when a woman has sex before marriage, it is always wrong	23.5%	28.4%
Believe that when a woman has sex before marriage, it is sometimes wrong	46.9%	51.6%
Believe that when a woman has sex before marriage, it is never wrong	29.6%	20.1%
Believe that when a man has sex before marriage, it is always wrong	18.6%	27.7%
Believe that when a man has sex before marriage, it is sometimes wrong	42.5%	49.8%
Believe that when a man has sex before marriage, it is never wrong	38.9%	22.5%
Opinions About Abortion		
Believe that when a woman has an abortion, it is always wrong	78.2%	82.4%
Believe that when a woman has an abortion, it is sometimes wrong	15.8%	15.5%
Believe that when a woman has an abortion, it is never wrong	6.0%	2.0%
Believe teen pregnancy is a national problem	90.6%	93.6%
Believe HIV/AIDS is a national problem	71.7%	75.3%

TABLE 4:
Percentage distribution of responses to questions on perceptions and experiences with HIV/AIDS

	MEN (N = 239)		WOMEN (N = 303)	
Perception of Friends' Risk for HIV				
Believe that their friends have very high risk for HIV	16.6%		12.4%	
Believe that their friends have little risk for HIV	46.7%		40.7%	
Believe that their friends have no risk for HIV	36.7%		46.9%	
Perception of Self Risk for HIV				
Believe that they have very high risk for HIV	7.3%		5.5%	
Believe that they have little risk for HIV	21.9%		23.8%	
Believe that they have no risk for HIV	70.8%		70.7%	
Is personally concerned about getting HIV/AIDS	94.1%		94.6%	
Think their friends are concerned about getting HIV/AIDS	88.4%		91.6%	
Believe the possibility of getting HIV/AIDS affects their sexual practices	28.7%		26.4%	
Know someone who is HIV positive	19.7%		18.2%	
Number of people he/she knows who has HIV/AIDS (Avg, St Dev)	0.27	0.81	0.27	0.71
Have been tested for HIV/AIDS	16.5%		10.8%	
Number of times he/she has been tested for HIV/AIDS	0.26	0.82	0.14	0.43

TABLE 5:
Percentage distribution of responses to questions on relationships and communication with parents, peers, and future plans, by gender

	MEN (N = 239)		WOMEN (N = 303)	
Relationship With Parents				
Think that parents support the majority of their decisions	88.2%		86.7%	
Share personal aspects of their private life with their parents	55.5%		59.1%	
Talk to parents about sex	46.0%		61.4%	
Parents know he/she is sexually active	51.2%		30.9%	
Relationship With Peers				
Friends also know she/he is sexually active	75.2%		78.8%	
Sibling also knows she/he is sexually active	10.3%		11.1%	
Other person also knows she/he is sexually active	14.5%		10.1%	
Talk with current partner about sex	81.5%		94.9%	
Talk with friends about sex	83.5%		81.8%	
Talk with friends about HIV/AIDS	69.8%		75.9%	
Work and Educational Plans				
After completing high school, plans to attend university	81.7%		79.7%	
After completing high school, plans to work	19.1%		19.9%	
After completing high school, plans to do other	4.7%		4.8%	
Marriage & Family Plans				
Plans to get married in the next five years	30.7%		38.1%	
Plans to get married in the next ten years	44.6%		42.2%	
Plans to get married in more than ten years	16.9%		14.6%	
Never plans to get married	7.8%		5.1%	
Plan to have children	91.9%		91.5%	
Total number of children plan to have (Avg, St Dev)	2.44	1.00	2.28	0.69

TABLE 6:
Percentage distribution of sexually experienced respondents who reported selected sexual behaviors and experiences, by gender

	MEN (N = 171)		WOMEN (N = 138)	
Have ever had sex	71.8%		46.9%	
Age (Avg, St Dev)	18.92	1.33	18.86	1.29
Age at first sex (Avg, St Dev)	15.35	1.84	16.72	1.57
Have been forced to have sex	5.2%		8.9%	
Sexual Attraction				
Feel sexual attraction for men only	2.1%		95.3%	
Feel sexual attraction for both men and women	4.6%		4.0%	
Feel sexual attraction for women only	93.2%		0.7%	
Sexual Partners				
Has had sex with only men	1.2%		97.0%	
Has had sex with both men and women	6.6%		1.5%	
Has had sex with only women	92.2%		1.5%	
Age of current / last partner (Avg, St Dev)	18.37	2.19	20.99	3.28
Current partner is male	5.6%		97.1%	
Current partner is female	94.4%		2.9%	
Types of Sexual Activity				
Have had vaginal sex	95.7%		97.7%	
Have had anal sex	28.7%		15.8%	
Have had oral sex	62.8%		39.1%	
When he/she has sex, it is unplanned	64.2%		57.5%	
When he/she has sex, it is planned	35.8%		42.5%	
Number of Sexual Partners				
Lifetime number of sexual partners (Avg, St Dev)	4.47	5.22	2.36	1.90
Number of partners last year (Avg, St Dev)	1.84	1.76	1.21	0.95
Number of partners last month (Avg, St Dev)	1.14	1.37	0.94	0.63
Number of sexual acts last month (Avg, St Dev)	3.56	4.78	4.26	4.73
Drug and Alcohol Use During Sex				
Use drugs/alcohol during sex never	71.4%		86.7%	
Use drugs/alcohol during sex sometimes	25.0%		13.3%	
Use drugs/alcohol during sex almost always	3.0%		0.0%	
Use drugs/alcohol during sex always	0.6%		0.0%	
Commercial Sex				
Has paid to have sex	9.5%		2.2%	
Has been paid to have sex	11.9%		1.5%	

TABLE 7: Percentage distribution of contraceptive use by sexually experienced respondents, by gender

	MEN (N = 171)	WOMEN (N = 138)
Frequency of Contraceptive Use Last Year		
Never	18.8%	30.4%
Sometimes	28.5%	36.3%
Almost always	21.2%	15.6%
Always	31.5%	17.8%
Frequency of Contraceptive Use Last Month		
Never Used Contraception	28.9%	43.1%
Used Contraception Sometimes	16.4%	12.1%
Used Contraception Almost Every Time	12.5%	12.1%
Used Contraception Every Time	42.2%	32.8%
Type of Contraception Most Frequently Used		
Contraceptive pill	10.1%	15.8%
Condom	91.7%	76.7%
Diaphragm	1.2%	0.8%
Rhythm method	14.9%	20.3%
Other	6.0%	9.8%
None	6.0%	15.0%
Type of Contraception Used During Last Sex		
Any Contraception	78.7%	69.4%
Contraceptive pill	6.3%	8.1%
Condom	73.1%	50.0%
Diaphragm	1.9%	0.0%
Rhythm method	4.4%	12.9%
Other	3.7%	6.5%
Condom Use		
Never use condoms	8.3%	25.0%
Rarely use condoms	11.3%	11.4%
Sometimes use condoms	25.0%	25.8%
Frequently use condoms	17.9%	15.2%
Always use condoms	37.5%	22.7%
Have access to condoms	91.9%	66.8%
Feels comfortable getting condoms	62.8%	39.7%
Carry condoms in case of a possible sexual encounter	47.2%	9.3%

TABLE 8: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Selected Characteristics and Sexual Experience, Age of First Sex, and Condom Use, by Gender

	Ever Had Sex			Had Sex Before Age 16			Use Condoms Consistently		
	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se
Age	1.617*** 0.206	1.603* 0.321	1.716** 0.306	1.038 0.119	1.194 0.169	0.758 0.217	1.042 0.111	1.033 0.145	1.081 0.191
Talk to Parents about Sex	0.289*** 0.067	1.486 0.601	0.798 0.288	0.117*** 0.034	2.015* 0.687	0.433 0.281	0.260*** 0.062	2.417* 0.829	1.175 0.54
Share Personal Life with Parents	1.033 0.259	0.939 0.376	0.362** 0.123	1.363 0.393	1.891 0.659	2.424 1.475	1.820* 0.48	1.198 0.423	0.479 0.196
Feel Parents Support Their Decisions	0.567* 0.137	2.08 1.115	0.91 0.433	1.777* 0.503	0.676 0.359	1.014 0.77	0.836 0.211	2.071 1.216	1.147 0.627
First Learned About Sex in School	0.564* 0.126	0.653 0.232	0.495* 0.156	0.518* 0.132	0.581 0.183	0.312* 0.177	0.674 0.156	0.745 0.239	0.564 0.211
Currently Live with Parents	0.438** 0.122	0.655 0.328	0.378** 0.135	0.622 0.191	1.149 0.48	0.364 0.203	0.545* 0.151	0.468 0.204	0.615 0.249
Talk to Friends about Sex	3.936*** 1.258	5.391** 2.836	3.175** 1.342	3.376** 1.509	4.792* 2.977	1.838 1.318	2.431* 0.966	3.251 2.013	1.579 0.847
Talk to Friends about HIV/AIDS	1.338 0.354	1.528 0.596	1.087 0.404	0.76 0.225	1.114 0.414	0.421 0.236	1.860* 0.537	2.227* 0.863	1.281 0.589

TABLE 8a: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Selected Characteristics and Sexual Experience, Age of First Sex, and Condom Use, by Gender

	Ever Had Sex				Had Sex Before Age 16				Use Condoms Consistently			
	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se	All N = 439 or/se	Male N = 196 or/se	Female N = 243 or/se
Knowledge about HIV/AIDS	1.013 0.177	0.701 0.203	1.244 0.299	0.988 0.198	0.771 0.193	1.801 0.973	1.144 0.211	0.864 0.218	1.643 0.557			
Knowledge about Contraception	1.11 0.123	1.28 0.232	1.117 0.174	1.007 0.129	1.073 0.171	1.272 0.344	0.866 0.099	0.899 0.147	0.85 0.152			
Plan to Attend University after Graduation	0.621 0.29	0.638 0.52	0.54 0.325	0.402 0.218	0.298 0.234	0.411 0.386	3.069* 1.622	6.775* 5.653	2.4 1.85			
Plan to Work after Graduation	1.284 0.604	0.755 0.579	1.495 0.93	0.738 0.398	0.298 0.23	1.787 1.769	2.373 1.178	2.796 2.145	2.183 1.608			

* p = < .05, ** p = < .01, *** p = < .001

CHAPTER 3:

Belizean Youth at Risk: HIV/AIDS and the Influence of School-Based Sexuality Education on Sexual Knowledge and Behavior

I. ABSTRACT

CONTEXT:

The Belizean government has made minimal progress in implementing the Mexico City Ministerial Declaration to expand comprehensive sexuality education and services as part of a national effort to reduce youth HIV transmission.

METHODS:

Data from a sample of 542 young people between the ages of 18 and 24 who participated in a 2008 national survey examine sexual knowledge, attitudes, and practices in Belize. Logistic regression identifies predictors of youth sexual activity and condom use by examining the influence of relationships, sexuality education, religion, ethnicity, and knowledge.

RESULTS:

Young people who first learn about sex in school are less likely to ever have had sex (odds ratio = 0.52) than their peers. Young people who talk to their parents about sex are less likely to have had sex (odds ratio = 0.57), as are those who attend church frequently (odds ratio = 0.35). Young people who talk to their friends about sex are significantly more likely to have had sex (odds ratio = 4.44), as are those who talk to their friends about HIV (odds ratio = 2.36).

Young people who talk to their friends about sex are significantly more likely to use condoms consistently (odds ratio = 3.02), as are those who talk to their friends about HIV (odds ratio = 1.97). Young people who attend church frequently are less likely to use condoms (odds ratio = 0.50).

CONCLUSIONS:

Expanding comprehensive sexuality education and services through implementation of the Mexico City Ministerial Declaration has the potential to lower youth HIV transmission rates in Belize.

II. BACKGROUND

Belize's national HIV prevalence rate is 2.3%, among the highest in the Western hemisphere.^{81,82} HIV disproportionately affects Belizean youth, as most people currently living with HIV/AIDS in Belize were infected during their late teens and early twenties and are now between the ages of 20 and 29.⁸³ This age group accounts for 40% of all new infections and is the demographic group most vulnerable to the disease.⁸⁴ In addition to high rates of HIV among youth, Belize also has a very large youth population, with 39% of the population currently under the age of 15.⁸⁵ High rates of youth infection, combined with a large youth population overall, exacerbate the effects of HIV in Belize.

The consequences of HIV are not only severe for young adults, but also for their families and their communities. When young adults cut short their education or drop out of the work force due to HIV, they both decrease their own earning potential and add to the existing burden of poverty for their families, communities, and countries.⁸⁶ These challenges are exacerbated by limited educational and employment opportunities, conservative gender norms, and widespread HIV/AIDS stigma.⁸⁷

Beyond the negative effects of HIV/AIDS on the health and welfare of individuals and communities, the economic consequences of the HIV pandemic in Belize are significant, requiring substantial governmental and multilateral expenditures for anti-retroviral treatment, voluntary testing and counseling services, mother-to-child transmission prevention programs, and information, education, and communication campaigns.⁸⁸ Despite these alarming rates of HIV and the numerous social and economic costs associated with the pandemic, very little research has examined the causes and consequences of HIV prevalence in Belize.

To that end, the central aim of this study is to identify predictors of youth sexual activity and condom use in Belize by examining a range of possible factors, including sources of information concerning sexuality, knowledge and attitudes, family and peer influences, ethnicity, and religion. As one of the first of its kind in Belize, this national study offers some initial insights into the diverse factors that affect young people's sexual knowledge, attitudes, and practices.

In response to increasing rates of HIV infection among youth, the Government of Belize has launched numerous initiatives to combat the spread of the disease, including signing on to the 2008 Mexico City Ministerial Declaration Prevenir Con Educación (Preventing Through Education), a regional initiative to expand young people's access to comprehensive sexuality education and sexual and reproductive health services.⁸⁹ The Ministerial Declaration emerged from the XVII International AIDS Conference held in Mexico City in August 2008, during which the Belizean Ministries of Health and Education, along with all the other Latin American governments, committed to expanding access to comprehensive sexuality education and services for youth, including HIV prevention and treatment.

The Ministerial Declaration requires Ministries of Health and Education in Belize and other signatory countries to update sexuality education curricula to reflect evidence-based best practices within the field of youth sexual and reproductive health and expand these improved

programs nationally.⁹⁰ By 2015, all participating countries have committed to reducing the number of schools that have not institutionalized comprehensive sexuality education by 75%, and reducing the number of young people who do not have access to sexual and reproductive health services by 50%.

This path-breaking Ministerial Declaration formally recognizes that “HIV is an epidemic that demands a multi-sectoral, coordinated response that is both immediate and sustained” and requires signatory countries to “implement and/or strengthen multi-sectoral strategies of comprehensive sexuality education and promotion of sexual health, including HIV/STI prevention.” On paper, the Ministerial Declaration is one of the most progressive efforts of its kind – in practice, achieving the principal commitments will be a major challenge.

To date, the Belizean Ministries of Health and Education have struggled in their efforts to implement the Ministerial Declaration. Unlike neighboring countries such as Guatemala, Honduras, and Mexico, the Belizean government has made minimal progress in fulfilling the Ministerial Declaration commitments. In addition to the Catholic Church’s overt resistance to comprehensive sexuality education and services for youth, the Belizean government has not made the Ministerial Declaration a priority. Advocates have struggled to gain traction on the issue, in part due to limited existing research concerning youth sexual and reproductive health in Belize.⁹¹ Therefore, successful implementation of the Ministerial Declaration in Belize will depend not only on increased political commitment and ongoing advocacy efforts, but also on greater understanding of the diverse sexual and reproductive health needs of Belizean youth.

This study focuses on two principal factors – youth sexual activity and condom use. Youth sexual activity is a key variable for analysis in understanding HIV prevalence in Belize. Existing research demonstrates that HIV in Belize is predominantly a sexually-transmitted disease, with very limited transmission resulting from intravenous drug use, mother-to-child transmission, or blood transfusions.⁹² Condom use is another crucial factor for analysis, as consistent condom usage significantly lowers both an individual’s risk of infection and national transmission rates.

Beyond sexual activity, condom use, and socio-cultural factors, this study also explores the influence of knowledge about HIV prevention and contraception on young people’s sexual practices. To date, the relationship between young people’s knowledge, perception of risk, and sexual practices remains unclear.^{93, 94} According to sexual risk-reduction models, knowledge is a prerequisite to recognizing the potential negative outcomes associated with risky behaviors and taking action to change them.⁹⁵ However, studies examining the relationship between sexual knowledge and behavior have reported mixed results: some have found positive associations,⁹⁶ others have found negative associations,⁹⁷ and still others demonstrate no association when controlling for social and demographic indicators.⁹⁸ The lack of consensus in previous research findings suggests the need to better understand the degree to which knowledge does or does not influence sexual behavior among youth in order to enable practitioners to design and implement successful HIV prevention programs.⁹⁹

III. METHODS

a. SAMPLE

The study is based on data from a written survey of 542 young adults between the ages of 18 and 24 conducted between March, 2007 and April, 2008. Study participants include 249 young men and 293 young women between the ages of 18 and 24 in their final year of high school. The survey was administered in each of Belize's six districts, including the towns of Belize City, Belmopan, Dangriga, San Ignacio, Orange Walk, Corozal, and Punta Gorda. Although the majority of high school seniors (491) participating in the study are between the ages of 18 and 20, the age range for analysis has been extended to age 24, as many students in Belize do not finish their schooling until they are in their early twenties.

Using a stratified sampling method, the nine schools selected for participation are representative of the socio-economic spectrum within Belize and reflect the realities of a broad cross-section of school-based youth in their communities. In identifying schools for participation, the study author ensured that the sample included schools with students whose backgrounds and experiences are substantively representative of the region. While some participating schools have very little resources and serve students from extremely poor families, others are known for providing high-quality education to students who come from more economically stable families, and some schools fall in between. Within each participating school, all students between the ages of 18 and 24 who attended school on the day that the survey was administered participated in the study and are representative of their peers concerning numerous important factors, including ethnicity, race, religion, and socio-economic background. Therefore, the study findings are substantively representative of the broader population of young adults attending high school throughout the country of Belize.

b. SURVEY

Surveys were implemented in students' classrooms by the US-based study author in her early 30s and/or a local Belizean researcher in her early 30s. The Belizean researcher participated in a one-day training seminar organized by the study author to learn about survey research administration, informed consent and privacy, and the study procedures. To ensure the confidentiality and comfort of students participating in the study, the researchers asked teachers to leave the room during administration of the survey and remained in the classroom to answer questions and address students' concerns.

The research centers on results from a structured questionnaire containing 95 variables, including a combination of multiple choice and open-ended questions. The first part of the survey instrument includes questions on personal plans and goals, relationships with parents and peers, social support, and sources of information about sex. The second part includes questions on sexual experience, frequency and types of contraceptive use, number of sexual partners, and interpersonal communication about sex. The third part addresses attitudes and beliefs concerning sexuality, premarital sex, teen pregnancy, abortion, and same sex behaviors. The fourth part explores perceived risk for HIV infection for self and peers, interpersonal communication about HIV/AIDS, and direct experience with HIV-positive acquaintances and HIV-testing. The fifth part examines knowledge concerning pregnancy prevention methods, modes of HIV transmission, and understanding of emergency contraception. The final part includes social,

demographic, and economic characteristics of the surveyed respondent's personal and family background. In most cases, study participants completed the questionnaire in 45 minutes.

c. MEASURES

Building on measures from previous studies, the study author used multiple questions to examine discrete constructs from a range of angles.¹⁰⁰ For example, to understand survey participants' relationships and communication with their parents and peers, five single-item indicators serve as measures using the following wording: "Do you share personal aspects of your private life with your parents?"; "Do you talk with your parents about sex?"; "Do you live with your biological mother and father?"; "Do you talk to your friends about sex?"; "Do you talk to your friends about HIV/AIDS?" All five items are coded dichotomously.

Two questions examined how and when respondents first learned about sex. The first question used the following wording: "Where did you learn about sex for the first time?" with the following response choices: From my mother, From my father, From my brothers/sisters, From my friends, In school, In church, On television, Books, and Other. The second question used the following wording: "How old were you when you learned for the first time about sex, or sexual intercourse?" One question explored survey respondents' future academic and professional plans: "What are your plans after completing high school?" with the following response choices: Attend university, Work, Other.

Three questions explored knowledge about HIV and contraception, for which respondents were asked to circle all correct possible responses. Seven items assessed participants' knowledge of HIV transmission (eg. "HIV/AIDS is transmitted by mosquitoes" and "HIV/AIDS is transmitted by having vaginal sex with an infected person"). The range of possible scores was 1-7, with higher scores pointing to greater knowledge about effective mechanisms to prevent HIV. Eight items assessed participants' knowledge of contraception (eg. "A couple can prevent an unwanted pregnancy by washing with vinegar" and "A couple can prevent an unwanted pregnancy by using a condom"). The range of possible scores was 1-8, with higher scores pointing to greater knowledge about contraception. The question "Do you know someone who has HIV/AIDS?" was coded dichotomously.

Five variables examined contraceptive use among sexually-active survey participants. "Did you use contraception the last time you had sex?" is coded dichotomously. "In case you had sex during the last month, how frequently did you use contraception?" used a four-point scale where 1=Always, 2=Almost Always, 3=Sometimes, 4=Never. "In case you use contraception, what type of contraception do you use most frequently?" and "If you used contraception the last time you had sex, what type of contraception did you use?" had six pre-coded answers with the following response choices: Contraceptive pill, Condom, Diaphragm, Rhythm method, Other, None. The question "How frequently do you use condoms?" used a five-point scale where: 1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, and 5=Always. In the multivariate analysis of consistent condom usage, the study author coded those who responded Never, Rarely, and Sometimes as 0 and those who responded Frequently or Always as 1.

Three single-item indicators serve as measures reflecting whether respondents engage in specific high-risk behaviors that further heighten their vulnerability to HIV. "When you have sex, how

frequently are you under the influence of alcohol or drugs?” used a four-point scale where 1=Never, 2= Sometimes, 3=Almost always, 4=Always. “Have you ever paid to have sex?” and “Have you ever been paid to have sex?” were coded dichotomously.

The author created a Conservative Sexual Morality Scale to assess respondents’ agreement with more traditionally conservative views about human sexuality. This composite indicator consisted of four Likert-type items exploring perceptions about premarital sex among men and women, same-sex behavior, and abortion. The possible score for this scale ranged from 1 to 9, with higher scores pointing to more conservative views of sexuality. The mean score was 5.75, with a standard deviation of 0.089 and Cronbach’s alpha was 0.77.

The survey included questions concerning gender, age, ethnicity, and religion. The study author sought to examine differences between respondents who were very religious and those who were less religious, using frequency of church attendance as a proxy for religiosity. In the multivariate analysis of church attendance, the study author coded those who responded “Once per week” or “Twice per week” as 1 and those who responded “Twice per month,” “Once per month,” “Once per year,” and “Never” as 0.

d. DATA ANALYSIS

Study data were analyzed using STATA-10. For bivariate analysis, t-tests and chi-square tests were used to determine significant differences at $p < 0.05$. Logistic regression was used for multivariate analysis. All results were analyzed jointly and separately for females and males.

IV. RESULTS

a. SAMPLE CHARACTERISTICS

Of the 542 young adults who participated in the study, the mean age was 18.8 for men and 18.7 for women (Table 1). Although most respondents described their ethnicity as Mestizo (44.3% of men and 42.0% of women), substantive proportions identified as indigenous (18.7% of men and 18.1% of women) or Creole (22.4% of men and 25.6% of women), with a small group who identified as Garifuna (6.1% of men and 2.7% of women). Most respondents identified as Catholic (44.9% of men and 52.2% of women), with smaller proportions identifying as Protestant (38.0% of men and 36.9% of women). A total of 32.5% of men and 49.5% of women reported that they attend church one or more times each week.

Some gender differences were evident – although 54.1% of men reported having an occupation, only 39.2% of women did. Further, 71.7% of men reported still living with their parents, in contrast to 79.8% of women, likely relating to the fact that 3.3% of young men were married at the time of the survey, in contrast to only 1.4% of women.

b. RELATIONSHIPS

Most male and female respondents said their parents support the majority of their decisions and actions (66.7% and 65.3%, respectively) and that they share personal aspects of their private lives with their parents (38.2% and 44.0% of men and women, respectively). Although 27.4% and 48.5% of men and women reported that they talk with their parents about sex, even higher

proportions reported that their parents know that they are sexually active (66.0% and 50.8% of men and women, respectively).

The majority of respondents (82.1% of men and 62.3% of women) said that they talk with their friends about sex. The majority (77.8% of men vs. 71.9% of women) also said they talk with their friends about HIV/AIDS. Of the sexually-active survey respondents, the majority (72.5% of men and 70.8% of women) said that their friends know they are sexually active.

c. KNOWLEDGE

Participants' knowledge of HIV/AIDS was generally limited (Table 2). While 91.5% correctly believed that it could not be transmitted by mosquitoes, 88.9% of survey participants knew that HIV could be transmitted through vaginal sex, and 88.3% knew that HIV can be transmitted by blood, only 67.4% knew HIV can not be transmitted through kissing.

Participants' knowledge of the ways in which a couple can prevent unwanted pregnancy varied substantively, demonstrating widespread misunderstanding and lack of knowledge concerning effective contraceptive methods. Specifically, 98.9% knew that having sex standing up will not prevent an unwanted pregnancy and 82.7% correctly responded that condoms can be used to prevent pregnancy. However, only 70.1% correctly answered that the contraceptive pill can be used to prevent pregnancy, while 63.5% correctly answered that abstinence prevents unwanted pregnancy. With the majority of pregnancy-related questions, female respondents had higher correct response rates than male.

For sources of knowledge about sex, 3.2% of men and 22.8% of women said they first learned about sex from their mother, in contrast to 4.9% of men and 0.3% of women who said they first learned about sex from their father. While 32.8% of men and 45.5% of women said they first learned about sex in school, another 34.8% of men and 14.8% of women said they learned about sex from their friends. A total of 23.4% of men first learned about sex from books, television, church, or other sources, in contrast to 14.8% of women.

d. ATTITUDES

Table 3 reports respondents' attitudes concerning six statements relating to sexual morality, the majority of which demonstrate gender differences in responses. While 19.8% of men and 22.3% of women said it is always wrong when a woman has premarital sex, 27.0% of men and 23.3% of women said it is never wrong for a woman to have premarital sex. When asked about community values, 52.0% of men and 48.3% of women said it was important in their community for a woman to be a virgin when she gets married. While 15.3% of men and 21.2% of women said it is always wrong when a man has premarital sex, 41.1% of men and 32.2% of women said it is never wrong for a man to have premarital sex. When asked about community values, 16.9% of men and 20.3% of women said it was important in their community for a man to be a virgin when he gets married.

Concerning same sex behavior, 62.3% of men and 52.1% of women said it is always wrong for two men or two women to have sexual intercourse, in contrast to 14.6% of men and 11.0% of women, who said it is never wrong. In the area of reproductive rights, 58.9% of men and 56.2%

of women said it is always wrong for a woman to have an abortion, in contrast to 6.0% of men and 3.8% of women, who said it is never wrong.

e. PERCEPTIONS & EXPERIENCE WITH HIV/AIDS

Although 70.8% of survey participants reported that they are concerned about getting HIV/AIDS and 79.1% believe that their friends are also concerned about it, only 63.1% of men and 67.2% of women said that the possibility of getting HIV affects their sexual practices. Interestingly, whereas 16.3% of survey participants believe that their friends have a high risk of contracting HIV, only 8.5% of survey participants believe that they themselves have a high risk of infection.

While 47.0% of respondents said that they know someone who has HIV/AIDS, only 41.1% of those knew three or more people who have the virus. Significant differences were evident in the rate of respondents who had been tested for HIV (33.6% and 26.4% of men and women, respectively). Of those who had been tested, 20.1% had been tested three or more times.

f. SEXUAL BEHAVIORS AND EXPERIENCE

In total, 76.3% of men reported having ever had sex, in contrast to only 41.0% of women. Of the 310 survey respondents who are sexually active, numerous distinctions between the 190 men and 120 women were notable in the realm of behaviors and experience. Male respondents were significantly more likely than females to have had sex before age the median age of 15 (39.5% vs. 16.7%). While male survey respondents reported having had an average of 6.4 lifetime sexual partners, female respondents reported only having had an average of 2.8 lifetime sexual partners. In addition, for sexually active respondents, 52.6% of men and 23.3% of women report having had four or more sexual partners in their lifetimes. In the area of concurrent sexual relationships, 14.5% of men and 6.1% of women reported having had more than one sexual partner during the past month. For same-sex relationships, 91.5% of men and 87.3% of women report having had sex only with a member of the opposite sex and never with someone of their own sex. Of sexually active survey respondents, 95.7% of men and 94.0% of women report having had vaginal sex and 23.7% of men and 22.4% of women report having had anal sex. While 69.6% of women report never using alcohol or drugs during sex, only 46.7% of men report the same.

For commercial sex, 14.1% of men report having paid for sex, in contrast to only 1.7% of women. Surprisingly, 12.4% of men report having been paid for sex, in contrast to only 5.3% of women. This finding is astonishing – although numerous studies have investigated men’s use of commercial sex workers, existing research has not yet shown such high rates of men being paid to have sex. In the survey, two questions explored commercial sex practices. The first question asked “Have you ever paid to have sex?” and the following question asked “Have you ever been paid to have sex?” In light of the ordering and directness of these questions, the study author does not doubt these findings, despite the surprising nature of these results. Instead, it seems likely that the unexpectedly high rates of male respondents being paid to have sex may be related to high levels of sex tourism in Belize. Relative to other countries in Central America, sex tourism in Belize is common due to limited prosecution and short prison terms, and may have contributed to Belize’s high rates of HIV/AIDS.¹⁰¹ Further research is needed to explore the relationship between sex tourism and commercial sex practices among young men and women in Belize.

g. CONTRACEPTIVE USE & ACCESS

Table 7 shows that, for sexually-active survey participants, 87.4% of men and 79.6% of women reported having used some form of contraception the last time they had sex. Of these, 2.2% of men and 11.1% of women used the pill, 85.2% of men and 64.8% of women used a condom, and 1.1% of men and 7.4% of women used the rhythm method. When asked how frequently they use condoms, 5.4% of men and 14.2% of women said never, whereas 61.6% of men and 47.8% of women said they always use condoms. Of all survey participants, 95.0% of men and 78.0% of women said that they have access to condoms, but only 75.6% of men and 41.6% of women said that they feel comfortable getting them.

h. MULTIVARIATE ANALYSIS

Sexual Activity

Table 8 shows that young people who talk to their parents about sex are less likely to ever have had sex (odds ratio = 0.57) than their peers, as are those who live with their parents (odds ratio = 0.34). Young women who talk to their friends about sex are significantly more likely to have had sex (odds ratio = 5.53) than their peers, although this effect is not evident for young men. Young men who talk to their friends about HIV are more likely to ever have had sex (odds ratio = 3.28), although this effect is not evident for women. Young women who concurrently work while in school are more likely to ever have had sex (odds ratio = 2.20), although this effect is not evident for men. Young women who first learn about sex in school are less likely to ever have had sex (odds ratio = 0.46) than those who learned about sex from another source. There is no significant difference between the mean age of respondents who first learned about sex in school and those who first learned about sex from another source, eliminating the possibility that this association is driven by a counterfactual. Although religious affiliation and ethnicity were not associated with sexual activity, young men who attend church once or twice per week are less likely to ever have had sex (odds ratio = 0.12) than those who attend church less frequently. Neither knowledge about HIV and contraception, nor future plans concerning marriage, education, or employment, influenced young people's likelihood of ever having had sex.

Condom Use

Table 8 also shows that young women who talk to their friends about sex are significantly more likely to consistently use condoms (odds ratio = 6.42), as are young men who talk to their friends about HIV (odds ratio = 3.47). Young men who plan to marry in the next five to ten years are less likely to use condoms than those who do not (odds ratio = 0.41), although this effect is not significant for women. Young women who know someone who is HIV-positive are more likely to consistently use condoms (odds ratio = 2.16), although this effect is not significant for men. Young people who live with their parents are significantly less likely to use condoms than those who do not (odds ratio = 0.42). Young men who attend church frequently are less likely to consistently use condoms (odds ratio = 0.40), although this effect is not significant for women. Young women who identify as Mayan are less likely to consistently use condoms (odds ratio = 0.17), as are young people who identify as Garifuna (odds ratio = 0.27). This effect of condom use is not evident in the gender disaggregated data for the Garifuna population, a small and marginalized sub-population of African origin that lives on the Atlantic coast of Belize and other Central American countries, likely because Garifunas comprise such a small proportion of both

the study population and the general population. Again, knowledge about HIV and contraception had no effect on young people's condom usage.

V. DISCUSSION

a. KEY FINDINGS

Consistent with findings from previous studies demonstrating that knowledge does not influence behavior,¹⁰² this study did not find a relationship between survey participants' knowledge about HIV or contraception and their likelihood of ever having had sex or consistently using condoms. In addition to confirming that knowledge does not influence behavior, this study also demonstrates that having first learned about sex in school, rather than in any other setting, increases the likelihood that young people will delay sexual activity. In addition, multivariate analyses demonstrate an association between survey participants' levels of knowledge about HIV and contraception and their sources of information about sex – those who first learned about sex in school had greater levels of knowledge than those who first learned about sex from their parents or friends. One possible explanation for these findings is a relationship between educational success and delayed sexual initiation – those students who first learned about sex in school may also pay closer attention in the classroom and have greater perceived likelihood of academic success. Consequently, they may delay sexual activity for fear of limiting their academic and professional potential by having an unwanted pregnancy or STI/HIV, despite the fact that their actual knowledge about HIV and contraception does not influence their sexual practices. Despite the logic of this theory, bivariate analyses did not demonstrate an association between respondents who first learned about sex in school and those who plan to attend university, a likely proxy for perceived academic potential. These findings highlight the need to further explore exactly why first learning about sex in school, independent of sexual knowledge or future academic plans, is associated with delayed sexual activity.

In addition to demonstrating the importance of school-based sexuality education, this study highlights the crucial role played by parents in influencing youth sexual behavior. Survey participants who talk to their parents about sex are less likely to have ever had sex than their peers, as are those who still live with their parents. These findings build upon existing research demonstrating the critical role of parents in reducing sexual-risk taking among young people.¹⁰³ By talking openly with their children about sex, parents can help young adults to delay sexual initiation. Findings demonstrating less consistent condom use among young people who live with their parents require further investigation to better understand this relationship.

This study also demonstrates that church attendance – which may serve as a proxy for both religious faith as well as connectedness to a broader community – influences young people's sexual practices. Controlling for religious affiliation, young people who attend church frequently are less likely to ever have had sex than those who do not. However, young people who attend church frequently are less likely to consistently use condoms, as are young women who identify as Protestant. These findings are not surprising, as church attendance is associated with more conservative views about sexuality and the majority of evangelical churches in Belize – including Protestants, Mormons, Jehovah's Witnesses, Adventists, and other socially-conservative non-Catholic Christian groups – promote extremely conservative beliefs and values, especially in the area of sexuality. Beyond broadly opposing premarital sex, many evangelical

churches argue against all modern forms of contraception including condoms, both for purposes of contraception and HIV prevention.¹⁰⁴

b. LIMITATIONS

This study has a number of limitations. First, these reported findings are limited by the validity of self-reporting and possible recall biases. In addition, some selection bias may affect data collection, as the study author only sampled young adults who are currently attending high school. Therefore, the sample excludes youth who have already dropped out of school due to a wide variety of reasons, including economic necessity, family hardship, migration, pregnancy, HIV/AIDS, and several other factors that may have required these young people to discontinue their studies. It is likely that the lives of these out-of-school youth are characterized by lesser socio-economic stability and family security than their peers who have stayed in school. As a result, the sub-population excluded from this study may have differing experiences, knowledge, and attitudes concerning sex than school-based youth, thereby making them substantially different from the young adults included in the study. Thus, caution is necessary when generalizing results from this study to out-of-school youth and other sub-populations of young adults.

Lastly, these findings only reflect the knowledge, attitudes, and practices of young adults between the ages of 18 and 24, and exclude younger adolescents. Because the majority of young Belizeans become sexually active before age 18, additional research is needed to examine the factors that influence sexual knowledge, attitudes, and practices among younger adolescents, especially 12 to 18 year-olds.

VI. CONCLUSIONS AND RECOMMENDATIONS

These study findings demonstrate a relationship between four principal factors – school-based sex education, gender, relationships with parents and peers, and church attendance – and young Belizeans' likelihood of being sexually active and consistently using condoms.

This study demonstrates that providing young people with sexuality education in school encourages them to delay sexual activity, a key factor for reducing transmission of HIV in Belize. The study findings support arguments by Belizean advocates that the government must prioritize effective implementation of the Mexico City Ministerial Declaration, as providing young people with access to comprehensive sexuality education and services may reduce HIV transmission among Belizean youth. Although the Ministerial Declaration's strategy has the potential to vastly improve youth sexual and reproductive health outcomes in Belize, existing efforts on the part of the Belizean government are insufficient. Since signing on to the Declaration in 2008, Belize has made minimal progress in fulfilling its commitment to achieving the targets set by the deadline of 2015.¹⁰⁵ Substantial new efforts on the part of the Ministries of Health and Education, and increased political will more broadly, are needed to fulfill these targets.

Beyond working more effectively to implement the existing scope of the Ministerial Declaration, Belize's Ministries of Health and Education should integrate parents into broader comprehensive sexuality education efforts. Providing parents with training about how to establish and maintain

positive, supportive relationships with their adolescent children, as well as talk to their children directly and openly about sex, could vastly expand the positive impacts of school-based sexuality education programs. Given the crucial role played by parents in influencing their children's decisions concerning sexual initiation, failure to include parents in national sex education efforts is a wasted opportunity to combat HIV/AIDS in Belize.

This study also demonstrates the pivotal influence of peers on young people's sexual practices, highlighting the need to promote the social acceptability of delayed sexual activity and consistent condom use among youth, especially among young men. These findings echo evaluations from peer education models illustrating the positive results of involving young people in efforts to reduce HIV transmission and increase condom use.¹⁰⁶ Because young people serve as role models for one another and strongly influence sexual norms for their peers, directly involving young people in the design and implementation of the Ministerial Declaration's efforts could expand its effectiveness.

TABLE 1:
Percentage distribution of respondents aged 18–24 in a sample of young adults in Belize
by selected characteristics, by gender

	MEN		WOMEN	
	mean	Sd	mean	sd
Sex	249		293	
Age (Average, St Dev)	18.76	1.16	18.66	1.12
Have ever had sex	75.8%		41.3%	
Ethnicity				
Mayan Ethnicity	18.7%		18.1%	
Mestizo Ethnicity	44.3%		42.0%	
Creole Ethnicity	22.4%		25.6%	
Garifuna Ethnicity	6.1%		2.7%	
Other Ethnicity	8.5%		11.6%	
Religion				
Catholic	44.9%		52.2%	
Protestant	38.0%		36.9%	
Other Religion	17.1%		10.9%	
Church Attendance				
Attend Church more than once per week	13.1%		17.6%	
Attend Church once per week	20.1%		32.5%	
Attend Church twice per month	16.4%		15.6%	
Attend Church once per month	16.4%		18.0%	
Attend Church once per year	20.5%		11.4%	
Never attend Church	13.5%		4.8%	
Family Income (USD)	\$14,408	\$2,366	\$13,892	\$1,680
Number of Siblings	3.58	2.65	4.15	2.48
Live With Parents	71.7%		79.8%	
Currently Married	3.3%		1.4%	
Work and Attend School	54.1%		39.2%	
N	249		293	

TABLE 2: Percentage distribution of responses to questions on sources of information about sex, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
First Sources of Information				
First learned about sex from Mother	3.2%		22.8%	
First learned about sex from Father	4.9%		0.3%	
First learned about sex from Brothers/Sisters	0.8%		1.7%	
First learned about sex from Friends	34.8%		14.8%	
First learned about sex from School	32.8%		45.5%	
First learned about sex from Church	1.2%		0.7%	
First learned about sex from Television	16.2%		10.3%	
First learned about sex from Books	2.4%		2.1%	
First learned about sex from Other Source	3.6%		1.7%	
Age when they learned about sex for the first time	11.59	2.62	12.51	2.14
Additional Sources of Information				
Also learned about sex from Mother	8.5%		27.9%	
Also learned about sex from Father	11.3%		5.5%	
Also learned about sex from Brothers/Sisters	12.6%		17.9%	
Also learned about sex from Friends	49.0%		57.6%	
Also learned about sex from School	49.0%		56.6%	
Also learned about sex from Church	7.3%		13.1%	
Also learned about sex from Television	61.1%		62.8%	
Also learned about sex from Books	36.4%		44.8%	
Also learned about sex from Other Source	3.2%		1.7%	

TABLE 2a: Percentage distribution of responses to questions on knowledge of HIV transmission, pregnancy prevention, and emergency contraception, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Knowledge About HIV Transmission				
Think that HIV can be transmitted by:				
Shaking hands with an infected person	2.0%		2.1%	
Mosquito bites	8.9%		8.2%	
Having vaginal sex with an infected person	13.4%		9.2%	
Kissing an infected person	29.6%		35.3%	
Blood	15.0%		8.9%	
Sharing utensils with an infected person	7.7%		9.6%	
Smoking marijuana with an infected person	2.4%		3.4%	
Knowledge About Pregnancy Prevention				
Think that pregnancy can be prevented by:				
Washing with vinegar	98.4%		99.0%	
Using the pill	65.2%		74.3%	
Using emergency contraception	37.2%		40.1%	
Abstinence	54.7%		70.9%	
Using a condom	80.6%		84.6%	
Having sex standing up	98.0%		99.7%	
Having sex during the woman's period	83.8%		85.6%	
Having sex for the first time	98.4%		96.9%	
Knowledge About Emergency Contraception				
Think that emergency contraception is:				
A monthly method used to prevent pregnancy	61.3%		64.6%	
A method used to cause abortion	79.6%		79.8%	
A method used to prevent HIV/AIDS	90.6%		93.8%	
A method used to prevent pregnancy up to 5 days after sexual intercourse	49.7%		54.7%	
A method used to prevent pregnancy that damages a woman's health	90.1%		86.8%	
N	249		293	

TABLE 3: Percentage distribution of responses to questions on premarital sex, same-sex behavior, abortion, and community values, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Perceptions of Community Values				
Believe it is important in his/her community for a woman to be a virgin when she gets married	52.0%		48.3%	
Believe it is important in his/her community for a man to be a virgin when he gets married	16.9%		20.3%	
Opinions About Same-Sex Behavior				
Believe that when two people of the same sex have intercourse, it is always wrong	62.3%		52.1%	
Believe that when two people of the same sex have intercourse, it is sometimes wrong	23.1%		37.0%	
Believe that when two people of the same sex have intercourse, it is never wrong	14.6%		11.0%	
Opinions About Pre-Marital Sex				
Believe that when a woman has sex before marriage, it is always wrong	19.8%		22.3%	
Believe that when a woman has sex before marriage, it is sometimes wrong	53.2%		54.5%	
Believe that when a woman has sex before marriage, it is never wrong	27.0%		23.3%	
Believe that when a man has sex before marriage, it is always wrong	15.3%		21.2%	
Believe that when a man has sex before marriage, it is sometimes wrong	43.5%		46.6%	
Believe that when a man has sex before marriage, it is never wrong	41.1%		32.2%	
Opinions About Abortion				
Believe that when a woman has an abortion, it is always wrong	58.9%		56.2%	
Believe that when a woman has an abortion, it is sometimes wrong	35.1%		40.1%	
Believe that when a woman has an abortion, it is never wrong	6.0%		3.8%	
Believe teen pregnancy is a national problem	92.7%		96.6%	
Believe HIV/AIDS is a national problem	96.8%		95.1%	
N	249		293	

TABLE 4: Percentage distribution of responses to questions on perceptions and experiences with HIV/AIDS, by gender

	MEN		WOMEN	
	mean	Sd	mean	sd
Perception of Friends' Risk for HIV				
Believe that their friends have very high risk for HIV	19.4%		13.6%	
Believe that their friends have little risk for HIV	58.2%		56.1%	
Believe that their friends have no risk for HIV	22.4%		30.3%	
Perception of Self Risk for HIV				
Believe that they themselves have very high risk for HIV	8.9%		8.1%	
Believe that they themselves have little risk for HIV	36.4%		26.1%	
Believe that they themselves have no risk for HIV	54.7%		65.8%	
Is personally concerned about getting HIV/AIDS	76.7%		63.6%	
Think their friends are concerned about getting HIV/AIDS	83.0%		75.7%	
Believe the possibility of getting HIV/AIDS affects their sexual practices	63.1%		67.2%	
Know someone who is HIV positive	48.2%		46.1%	
Number of people he/she knows who has HIV/AIDS	1.62	3.24	1.28	2.50
Have been tested for HIV/AIDS	33.6%		26.4%	
Number of times he/she has been tested for HIV/AIDS	0.65	1.29	0.57	1.59
N	249		293	

TABLE 5: Percentage distribution of responses to questions on relationships and communication with parents, peers, and future plans, by gender

	MEN		WOMEN	
	mean	Sd	mean	Sd
Relationship With Parents				
Think that parents support the majority of their decisions	66.7%		65.3%	
Share personal aspects of their private life with their parents	38.2%		44.0%	
Talk to parents about sex	27.4%		48.5%	
Parents know he/she is sexually active	66.0%		50.8%	
Relationship With Peers				
Friends also know she/he is sexually active	72.5%		70.8%	
Sibling also knows she/he is sexually active	9.9%		11.3%	
Other person also knows she/he is sexually active	17.5%		17.9%	
Talk to current partner about sex	78.8%		84.6%	
Talk with their friends about sex	82.1%		62.3%	
Talk with friends about HIV/AIDS	77.8%		71.9%	
Work and Educational Plans				
After completing college, plans to attend university	57.9%		67.8%	
After completing college, plans to work	38.4%		30.8%	
After completing college, plans to do other	4.1%		3.1%	
Marriage Plans				
Plans to get married in the next five years	26.0%		38.5%	
Plans to get married in the next ten years	37.4%		41.2%	
Plans to get married in more than ten years	25.6%		13.7%	
Never plans to get married	11.0%		6.5%	
Family Plans				
Plan to have children	90.8%		88.1%	
Total number of children plan to have	2.83	1.93	2.26	1.14
N	249		293	

TABLE 6: Percentage distribution of sexually experienced respondents who reported selected sexual behaviors and experiences, by gender

	MEN		WOMEN	
	mean	Sd	mean	Sd
Has ever had sex	76.3%		41.0%	
Age - Average (Standard Deviation)	18.88	1.23	18.96	1.32
Age at first sex - Avg (St Dev)	14.80	2.18	16.23	1.82
Has been forced to have sex	10.2%		11.7%	
Sexual Partners				
Has had sex with only men	2.1%		88.8%	
Has had sex with both men and women	6.4%		6.0%	
Has had sex with only women	91.4%		5.2%	
Age of current (or last) partner - Avg (Stdev)	17.95	2.48	22.39	5.36
Types of Sexual Activity				
Has had vaginal sex	95.7%		94.0%	
Has had anal sex	23.7%		22.4%	
Has had oral sex	44.1%		50.4%	
When he/she has sex, it is unplanned	65.8%		59.5%	
When he/she has sex, it is planned	34.2%		40.5%	
Number of Sexual Partners				
Number of sexual partners in lifetime - Avg (St Dev)	6.48	7.83	2.80	2.78
Number of partners last year - Avg (St Dev)	2.46	2.76	1.36	1.40
Number of partners last month – Avg (Stdev)	1.06	1.10	0.86	0.63
Number of sexual acts last month - Avg (Stdev)	3.01	4.20	3.11	4.42
Drug and Alcohol Use During Sex				
Use drugs/alcohol during sex never	46.7%		69.6%	
Use drugs/alcohol during sex sometimes	46.2%		30.4%	
Use drugs/alcohol during sex almost always	3.3%		0.0%	
Use drugs/alcohol during sex always	3.8%		0.0%	
Commercial Sex				
Has paid to have sex	14.1%		1.7%	
Has been paid to have sex	12.4%		5.3%	
N	190		120	

TABLE 7: Percentage distribution of contraceptive use by sexually experienced respondents, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Frequency of Contraceptive Use Last Month				
Never Used Contraception	11.8%		26.5%	
Used Contraception Sometimes	8.5%		13.3%	
Used Contraception Almost Every Time	12.4%		9.2%	
Used Contraception Every Time	67.3%		51.0%	
Type of Contraception Most Frequently Used				
Contraceptive pill	1.6%		13.8%	
Condom	94.1%		77.6%	
Diaphragm	1.6%		0.9%	
Rhythm method	2.7%		12.9%	
Other	1.1%		0.0%	
None	5.9%		11.2%	
Type of Contraception Used During Last Sex				
Contraceptive pill	2.2%		11.1%	
Condom	85.2%		64.8%	
Diaphragm	0.5%		0.0%	
Rhythm method	1.1%		7.4%	
Other	0.0%		1.9%	
No Contraception	12.6%		20.4%	
Condom Use				
Never use condoms	5.4%		14.2%	
Rarely use condoms	4.3%		8.8%	
Sometimes use condoms	10.3%		14.2%	
Frequently use condoms	18.4%		15.0%	
Always use condoms	61.6%		47.8%	
Have access to condoms	95.0%		78.0%	
Feels comfortable getting condoms	75.6%		41.6%	
Carry condoms in case of a possible sexual encounter	72.8%		17.6%	
N	190		120	

TABLE 8: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Select Characteristics, Sexual Experience, and Condom Use, by Gender.

	Ever Had Sex Odds Ratio			Use Condoms Frequently Odds Ratio		
	Agg b/se	Male b/se	Female b/se	Agg b/se	Male b/se	Female b/se
Age	1.399** 0.177	1.712 0.471	1.248 0.194	1.174 0.121	1.634** 0.282	0.823 0.136
Sex	0.287*** 0.078			0.256*** 0.062		
Talk to parents about sex	0.566* 0.157	0.677 0.353	0.475* 0.164	1.027 0.26	0.933 0.367	1.209 0.444
Share personal life with parents	1.004 0.275	1.223 0.616	1.124 0.406	0.89 0.218	0.837 0.308	1.03 0.403
Currently live with parents	0.337*** 0.111	0.315 0.208	0.297** 0.124	0.421** 0.115	0.411* 0.175	0.308* *
Talk to friends about sex	4.437*** 1.361	2.781 1.748	5.527*** 2.139	3.020*** 0.89	1.976 0.89	6.422* ** 3.115
Talk to friends about HIV	2.355** 0.744	3.275* 1.811	1.951 0.818	1.973* 0.586	3.472** 1.468	1.14 0.524
First learn about sex in school	0.518* 0.14	0.612 0.314	0.462* 0.164	1.018 0.251	1.302 0.493	0.815 0.298
Knowledge about HIV	1.276 0.202	1.32 0.352	1.153 0.26	1.312 0.188	1.345 0.276	1.301 0.293
Knowledge about contraception	0.866 0.1	0.812 0.163	0.903 0.143	0.902 0.095	0.834 0.124	0.995 0.175
Currently work and study	2.171** 0.569	1.841 0.918	2.197* 0.759	1.342 0.316	0.852 0.308	1.606 0.589
Plan to marry in 5- 10 years	0.84 0.244	0.707 0.37	0.894 0.359	0.601* 0.154	0.406* 0.153	0.737 0.311

TABLE 8a: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Select Characteristics, Sexual Experience, and Condom Use, by Gender.

	Ever Had Sex			Use Condoms Frequently		
	Agg b/se	Male b/se	Female b/se	Agg b/se	Male b/se	Female b/se
Plan to attend university after graduation	0.655 0.462	1.082 1.376	0.337 0.3	0.724 0.463	0.904 0.924	0.545 0.529
Plan to work after graduation	0.721 0.512	0.726 0.946	0.446 0.396	0.617 0.399	0.503 0.524	0.774 0.743
Know someone who is HIV positive	1.832* 0.478	2.249 1.087	1.782 0.615	2.067** 0.488	1.949 0.687	2.160* 0.789
HIV affects sexual practices	0.754 0.217	1.55 0.779	0.502 0.196	1.072 0.267	1.056 0.373	1.065 0.443
Attend church frequently	0.350*** 0.093	0.121** *	0.638 0.222	0.500** 0.125	0.400* 0.148	0.645 0.246
Catholic	0.911 0.381	0.8 0.578	1.065 0.612	1.34 0.475	1.759 0.856	1.083 0.636
Protestant	0.836 0.362	0.524 0.379	1.092 0.67	1.609 0.606	1.693 0.881	1.683 1.072
Indigenous	0.552 0.275	0.339 0.435	0.458 0.287	0.523 0.235	0.884 0.627	0.172* 0.127
Mestizo	0.436 0.198	0.184 0.227	0.611 0.327	0.5 0.202	0.583 0.382	0.384 0.206
Creole	0.962 0.46	0.44 0.574	1.342 0.734	0.983 0.413	0.674 0.473	1.162 0.618
Garifuna	0.384 0.278	0.113 0.167	0.879 0.902	0.269* 0.172	0.199 0.175	0.538 0.544
N	478	224	254	483	224	259

* $p < .05$, ** $p < .01$, *** $p < .001$

CHAPTER 4:
Adolescent Childbearing in Guatemala:
Disparities in Mayan and Ladino Youth Sexual Knowledge and Behavior

I. ABSTRACT

CONTEXT:

Responding to high rates of adolescent childbearing, especially among indigenous Mayans, the Guatemalan government is implementing the Mexico City Ministerial Declaration to expand youth access to comprehensive sexuality education and services.

METHODS:

Using data from a 2009 survey of 603 Guatemalan youth between the ages of 18 and 24, logistic regression analysis examines the influence of gender, ethnicity, religion, sex education, and relationships with parents and peers on youth sexual knowledge and activity.

RESULTS:

Multivariate analysis demonstrates that youth who first learned about sex in school have lower odds of ever having had sex (odds ratio, 0.51) than youth who first learned about sex from other sources. Non-indigenous ladinos are significantly less likely than indigenous Mayans to first learn about sex in school (odds ratio, 0.45) and are more likely to ever have had sex (odds ratio, 2.6). Young people who live with their parents are significantly more likely to have first learned about sex in school (odds ratio, 2.7) than those who do not. Religious youth are significantly less likely to ever have had sex than their less religious peers (odds ratio, 0.5).

CONCLUSIONS:

Substantial cultural differences and socio-economic disparities between Mayan and ladino youth affect their sexual knowledge and behaviors. Increasing youth access to comprehensive sexuality education and services is necessary to reduce high rates of adolescent childbearing, especially in rural Mayan communities. Understanding and responding to the disparate sexual and reproductive health needs of Guatemala's diverse populations is necessary for successful implementation of the Ministerial Declaration.

II. INTRODUCTION

Guatemala has the third highest adolescent birthrate in Central America – 44% of young women give birth before age 20, with even higher percentages for indigenous Mayan women than non-indigenous ladina women (54% versus 39%, respectively).¹⁰⁷ Adolescent childbearing in Guatemala has important consequences not only for the welfare of young parents and their children, but also for Guatemala's broader social and economic development. Unwanted pregnancies have harsh outcomes for young mothers and their infants, negatively influencing their immediate health status as well as their long term educational and employment opportunities.¹⁰⁸ Early childbearing has been associated with lowered socio-economic status for young women and their children, curtailed educational achievement, and limited earning potential for adolescent parents.¹⁰⁹ When young adults cut short their studies or leave the work force due to unplanned pregnancies, their potential economic productivity is reduced, contributing to higher rates of poverty for their families and communities over the long term.¹¹⁰ Currently, 56% of Guatemalans subsist below the poverty line, with three-quarters of indigenous Mayan communities living in poverty and one-quarter living in abject poverty.¹¹¹ Therefore, in a country where scarce resources and limited opportunities curtail young people's potential even without the additional burden of early parenthood, reducing rates of adolescent childbearing is vital.

Building on existing research into the causes and consequences of adolescent childbearing in Guatemala, this study explores the diverse factors that influence the sexual knowledge, attitudes, and practices of young adults in the rural Western highlands of Guatemala.¹¹² The central aim of this study is to identify predictors of sexual activity and knowledge among poor, rural youth – one of Guatemala's least studied and most underserved populations – by examining a range of factors, including gender, ethnicity, religion, sources of information about sexuality, and family and peer influences.

The total population of Guatemala is 14.4 million, approximately half of which are non-indigenous ladinos, and half of which are indigenous Mayans.¹¹³ Only 47% of the total population lives in urban areas, making Guatemala one of the least urbanized countries in Central America; regions that are the most remote and rural have the largest proportion of Mayan residents.¹¹⁴ The ladino population is made up of descendants of the Spanish conquerors and indigenous Amerindian groups who speak Spanish, are economically dominant, and live primarily in urban areas. The indigenous population is predominantly rural and includes 23 separate ethnic groups, including K'iche, Kaqchikel, Q'eqchi, Tzutzuhil, and Mam communities that all practice linguistic and cultural traditions that are different from one another and from the ladino population. Mayans are socially, economically, linguistically, and geographically marginalized throughout Guatemala, and have far worse demographic, health, literacy, and economic indicators than ladinos.¹¹⁵

Current estimates of the Mayan population as a proportion of Guatemala's total range from 40% to 60%; exact figures are difficult to pinpoint, due to shifting perceptions and definitions of indigenous identity.¹¹⁶ Ethnicity in Guatemala is defined not just by physical appearance alone but also by culture – speaking an indigenous language, wearing native dress, and following the

principles of the ‘cosmovisión Maya,’ which roughly translates to a set of beliefs, values, and traditions honoring nature, the earth, and ‘nahuales,’ or spiritual guides. During decades of political and economic oppression, Mayans were pressured to reject their ethnic identity and traditions or risk persecution. Throughout the country’s 35 year war, officially declared genocide by the United Nations, death squads massacred whole Mayan villages for their purported support of the anti-government guerrilla movement.¹¹⁷ During this time, many Mayans began to wear western clothing, learned to speak Spanish, and began to self-identify as ladinos. Since the signing of the 1996 Peace Accords, many indigenous communities have begun to publicly identify much more strongly with their Mayan heritage than they did during the war. All of these historical and political trends have made it difficult to precisely assess the total Mayan population in Guatemala, resulting in percentages that have changed substantially during the past few generations. However, despite inter-generational shifts in ethnic identity in Guatemala, these changes are long-term processes that take place over an individual’s lifecycle, not from one day to the next. Further, regardless of the exact population percentages of Mayans and ladinos, undeniable disparities remain between the two groups, with indigenous communities suffering from extensive social, economic, and political discrimination.

As a result of this historical context, Guatemala is in many ways two countries in one, characterized by persistent inequalities between Mayan and ladino populations. Many of the social and economic realities of the ladino population are comparable to middle-income countries like Mexico. In contrast, the health, employment, and educational indicators of the Mayan population are more comparable to those in very poor countries in sub-Saharan Africa. For example, the total fertility rate of indigenous Mayan women is 4.5, comparable to Kenya’s fertility rate of 4.6; on the other hand, the total fertility rate of ladina women is 3.1, equivalent to fertility rates in neighboring Central American countries like Belize.¹¹⁸ These high fertility rates among the Mayan population are due to numerous factors, including high levels of poverty, unmet need for family planning, and infant mortality, as well as lower levels of urbanization, literacy, and limited access to health care. Further, because the majority of Mayan communities depend on subsistence agriculture for their livelihoods, their survival depends on having enough children to farm the land.

Youth sexual and reproductive health outcomes have important implications for overall health and demographic indicators in Guatemala; 42% of the total population is under the age of 15, making it one of the youngest populations in the region.¹¹⁹ Due to limited access to health services in rural indigenous communities, it is not surprising that only 40.2% of indigenous women of childbearing age use contraception, in contrast to 63.3% of ladina women; similarly, unmet need for contraception among indigenous women of childbearing age is almost double that of ladina women (29.6% in contrast to 15.1%, respectively).¹²⁰ Although national HIV prevalence rates are currently relatively low (0.8% within the general population and 0.4% among 15-24 year-olds),¹²¹ statistics among specific vulnerable populations are alarmingly higher – HIV prevalence is 11.5% for men who have sex with men, while HIV prevalence among commercial sex workers is between 11% and 15%.¹²² Although reliable data on HIV is not available for indigenous communities, some experts hypothesize that prevalence rates are much higher within the Mayan population due to limited information about HIV and minimal access to testing and treatment services, compounded by high rates of domestic violence, commercial sex work, and migration.¹²³

Disparities in youth sexual and reproductive health outcomes between Mayans and ladinos have important implications for the recent signing of the 2008 Mexico City Ministerial Declaration *Prevenir Con Educación* (Preventing Through Education), a regional initiative to expand young people's access to comprehensive sexuality education and sexual and reproductive health services.¹²⁴ The Ministerial Declaration emerged from the XVII International AIDS Conference held in Mexico City in August 2008, during which the Guatemalan Ministries of Health and Education, along with all the other Latin American governments, committed to expanding access to comprehensive sexuality education and integrated sexual and reproductive health services for youth. The Ministerial Declaration requires Ministries of Health and Education in Guatemala and other signatory countries to update sexuality education curricula to reflect evidence-based best practices within the field of youth sexual and reproductive health and expand these improved programs nationally.¹²⁵ By 2015, all participating countries have committed to reducing the number of schools that have not institutionalized comprehensive sexuality education by 75%, and reducing the number of young people who do not have access to sexual and reproductive health services by 50%.

This path-breaking Ministerial Declaration formally recognizes that “Comprehensive sexuality education.... respects the values of a democratic, pluralistic society.... includ[ing] ethical, biological, emotional, social, cultural, and gender aspects.... to promote respect for differences, reject any form of discrimination, and foster responsible and informed decision-making among youth regarding their sexual debut.”¹²⁶ On paper, the Ministerial Declaration is one of the most progressive efforts of its kind – in practice, achieving the principal commitments will be a major challenge in Guatemala. Despite their best intentions, the Ministries of Health and Education will only be able to successfully implement the Ministerial Declaration by both understanding and responding to the diverse sexual and reproductive health needs of the most marginalized Guatemalans – who are indigenous, rural, poor, and young. Given the persistent disparities characterizing Guatemala's diverse populations, analysis of Mayans' and ladinos' experiences of sexuality is critical to achieving the Ministerial Declaration commitments.¹²⁷ Especially in a country as nuanced and complex as Guatemala, further research is needed to understand the specific needs of the hardest-to-reach populations. To that end, this study seeks to explore the social norms and realities that shape the sexual knowledge, attitudes, and behaviors of young adults in the rural Western highlands of Guatemala.

Beyond the social and structural obstacles to implementing the Ministerial Declaration, two relatively new religious trends affect Guatemala's efforts to increase access to comprehensive sexuality education and services – increasing progressiveness on the part of the Catholic Church and the rise of right-wing evangelical Christianity. Historically, Catholic leaders in Guatemala have been strongly opposed to comprehensive sexuality education, and Catholic doctrine opposes all forms of contraception besides abstinence and the rhythm method. In recent years, however, many Catholic laypeople and clergy have begun to discreetly dissent from official church policy, both in their own behavior and in their outreach efforts. As HIV rates have climbed within Guatemala, some Catholic leaders have even turned a blind eye to the promotion of condom use for HIV prevention, especially among at-risk populations, including men who have sex with men and sex workers.¹²⁸

Despite the long history of Catholic dominance in Guatemala, there is also a rapidly growing evangelical Protestant movement that influences efforts to implement the Ministerial Declaration.¹²⁹ More than one-quarter of Guatemalans now identify as evangelical Protestant, an enormous increase from 40 years ago when only 3% of the population was non-Catholic.¹³⁰ Based on teachings from right-wing conservative churches in the US, the majority of evangelical churches in Guatemala – including Protestants, Mormons, Jehovah’s Witnesses, Adventists, and other socially-conservative non-Catholic Christian groups – promote extremely conservative beliefs and values, especially in the area of sexuality. Beyond broadly opposing premarital sex, many evangelical churches argue against all modern forms of contraception including condoms, both for purposes of contraception and HIV prevention.¹³¹ Echoing radical US-based Christian groups, many evangelical leaders not only claim that condoms are immoral, but also that they are ineffective in preventing HIV, a disease that they sometimes describe as punishment for homosexuality and other sins.¹³²

III. METHODOLOGY

a. SAMPLE

This study is based on data from a written survey of 602 young adults between the ages of 18 and 24 years conducted between February and July 2009. Study participants included 337 young men and 265 young women who were in their final year of high school living in the department of Sololá, a rural area in the Western highlands of Guatemala. Sololá is one of the departments with the greatest proportion of indigenous residents, where 91% of the population is Mayan.¹³³ The study sample’s ethnic breakdown is representative of the region, with 93.0% of survey respondents identifying as Mayan. Although the vast majority of high school seniors (91.5%) participating in the study were between the ages of 18 and 20, the age range for analysis has been extended to age 24, as many students in Central America do not finish their schooling until they are in their early twenties.¹³⁴

Using an informal stratified sampling method, the twelve high schools selected for participation are representative of the socio-economic spectrum in Sololá. While the majority of participating schools have very limited resources and serve students from extremely poor families, others are known for providing better quality education to students who come from more economically stable families, and some schools fall in the middle of the spectrum. Within each participating school, all high school seniors between the ages of 18 and 24 who attended school on the day the survey was administered participated in the study and are representative of their peers concerning numerous important factors, including ethnicity, religion, and socio-economic background. Therefore, the study findings are substantively representative of the broader population of young adults attending high school in rural Guatemala.

Acquiring access to the twelve participating schools was extremely challenging. Because Sololá is one of the regions most harshly affected by Guatemala’s genocide and many researchers have attempted to conduct studies on a range of topics affecting the Mayan population, the majority of community leaders now refuse to allow investigations to take place. Further, recent natural disasters, including Hurricane Agatha in 2010 and Hurricane Stan in 2005, have resulted in tremendous destruction, casualties, and international intervention in Sololá. This combination of war, natural disaster, and attempted research intervention have made communities within this

region understandably wary of externally-supported studies, especially on a topic as taboo as youth sexuality.

Given community unwillingness to participate in research studies, the research team had to go to extraordinary lengths to acquire permission to conduct the surveys. Although a few school directors gave permission immediately, the majority was much less willing to allow their students to participate in the survey and the research team had to undertake multiple additional steps in order to obtain permission. In some cases, the research team was allowed to implement the survey only after presenting the project to the school director and teachers, the parents' association of the school, the students' governance committee of the school, the district technical administrative coordinator, and even the Sololá departmental director of education. Despite these extensive efforts to acquire permission to conduct the research, 14 schools unconditionally refused to allow the research team to implement the surveys.

b. SURVEY

The US-based study author is a native Spanish speaker in her early 30s who lived in Guatemala for two years; the Guatemalan researchers are an indigenous man and woman in their late 20s who were born and live in Sololá. To ensure the confidentiality and comfort of students participating in the study, the researchers implemented the surveys in students' classrooms, asked teachers to leave the room during administration of the survey, and remained in the classroom to answer questions and address students' concerns.

The survey instrument contained 95 variables, including a combination of multiple choice and open-ended questions, divided into six sections: personal plans, relationships, and sources of information about sex; sexual experience and contraceptive use; attitudes and beliefs concerning sexuality; perceived risk and experiences with HIV; knowledge about pregnancy prevention and HIV transmission; and social and demographic variables. In most cases, study participants completed the questionnaire in 60 minutes.

c. MEASURES

Building on measures from previous studies of youth sexuality, the study author used multiple questions to examine discrete constructs from a range of angles.¹³⁵ For example, to understand survey participants' relationships and communication with their parents and peers, five single-item indicators serve as measures using the following wording: "Do you share personal aspects of your private life with your parents?"; "Do you talk with your parents about sex?"; "Do you live with your biological mother and father?"; "Do you talk to your friends about sex?"; "Do you talk to your friends about HIV/AIDS?" All five items are coded dichotomously.

The author created a Conservative Sexual Morality Scale to assess respondents' agreement with more traditionally conservative views about human sexuality. This composite indicator consisted of four three-point Likert-type items exploring perceptions about premarital sex among men and women, same-sex behavior, and abortion. The possible score for this scale was 1-9, with higher scores pointing to more conservative views of sexuality. The mean score was 8.35, with a standard deviation of 0.048, and Cronbach's alpha was 0.61. Despite tremendous similarities in responses to the four items, the greatest variation was evident concerning opinions about

premarital sex among men and the least variation was evident concerning opinions about abortion.

Two questions examined how and when respondents first learned about sex. The first question used the following wording: “Where did you learn about sex for the first time?” with the following response choices: From my mother, From my father, From my brothers/sisters, From my friends, In school, In church, On television, Books, and Other. The second question used the following wording: “How old were you when you learned for the first time about sex, or sexual intercourse?” One question explored survey respondents’ future academic and professional plans: “What are your plans after completing high school?” with the following response choices: Attend university, Work, Other.

Two questions explored knowledge about HIV and contraception, for which respondents were asked to circle all correct possible responses. Seven items assessed participants’ knowledge of HIV transmission (eg. “HIV/AIDS is transmitted by mosquitoes” and “HIV/AIDS is transmitted by having vaginal sex with an infected person”). The range of possible scores was 1-7, with higher scores pointing to greater knowledge about effective mechanisms to prevent HIV. Eight items assessed participants’ knowledge of contraception (eg. “A couple can prevent an unwanted pregnancy by washing with vinegar” and “A couple can prevent an unwanted pregnancy by using a condom”). The range of possible scores was 1-8, with higher scores pointing to greater knowledge about contraception. The question “Do you know someone who has HIV/AIDS?” was coded dichotomously.

For demographic indicators, the survey included questions concerning gender, age, ethnicity, and religion. The study author sought to examine differences between respondents who were very religious and those who were less religious, using frequency of church attendance as a proxy for religiosity. In the multivariate analysis of church attendance, the study author coded those who responded “Once per week” or “Twice per week” as 1 and those who responded “Twice per month,” “Once per month,” “Once per year,” and “Never” as 0.

d. DATA ANALYSIS

The author analyzed study data with STATA-10, using t-tests and chi-square tests to determine significant differences at $p < .05$ for bivariate analysis, and logistic regression for multivariate analysis. To explore gender differences, the author analyzed all results both jointly and separately for females and males.

IV. RESULTS

a. SAMPLE CHARACTERISTICS

Of the 602 young adults who participated in the study, the mean age was 18.8 for both men and women (Table 1). The majority of respondents described their ethnicity as indigenous (91.2% for men and 95.4% for women), with smaller proportions identifying as Ladino (8.2% of men and 4.6% of women). The majority of respondents identified as Catholic (56.0% of men and 53.7% of women), with smaller proportions identifying as Protestant (42.3% of men and 46.3% of women). While 91.1% of men reported still living with their parents, 93.4% of women did. There

were some striking gender differences – for example, although 38.6% of men reported having an occupation, only 25.7% of women did.

b. KNOWLEDGE

For sources of knowledge about sex, 3.6% of men and 11.2% of women first learned about sex from their mother, in contrast to 3.0% of men and 1.6% of women who first learned about sex from their father (Table 2). While 46.5% of men and 62.4% of women first learned about sex in school, another 16.8% of men and 5.0% of women first learned about sex from their friends, and 16.8% of men and 11.6% of women first learned about sex from television. Further, another 12.3% of men first learned about sex from books, church, or other sources, in contrast to 7.0% of women.

Participants' knowledge of HIV/AIDS was generally strong, despite a substantive degree of misinformation. For example, 89.4% of survey participants knew that HIV could be transmitted through vaginal sex, 79.3% knew that HIV can be transmitted by blood, 86.4% knew HIV can not be transmitted through kissing, and 80.6% correctly believed that it could not be transmitted by mosquitoes. Participants' knowledge of the ways in which a couple can prevent unwanted pregnancy was also relatively strong, despite some misconceptions and lack of knowledge concerning effective contraceptive methods. Specifically, 94.6% knew that having sex standing up will not prevent an unwanted pregnancy, 97.6% believed that washing with vinegar will not prevent an unwanted pregnancy, and 91.1% knew that a woman can get pregnant the first time she has sex. However, only 44.0% believed that pregnancy can be prevented by using the pill, while 81.5% believed that pregnancy can be prevented by using condoms.

c. ATTITUDES

Table 3 reports respondents' attitudes concerning six value statements relating to sexuality. While 78.6% of men and 88.2% of women said it is always wrong when a woman has premarital sex, only 3.0% of men and 2.7% of women said it is never wrong. When asked about community values, 79.4% of men and 91.7% of women said it was important in their community for a woman to be a virgin when she gets married. In comparison, 75.1% of men and 87.1% of women said it is always wrong when a man has premarital sex while 3.3% of men and 2.8% of women said it is never wrong. When asked about community values, 67.3% of men and 80.2% of women said it was important in their community for a man to be a virgin when he gets married.

Concerning same-sex behavior, 87.7% of men and 89.4% of women said it is always wrong for two men or two women to have sexual intercourse, in contrast to the 5.4% of men and 2.7% of women who said it is never wrong. In the area of abortion, 94.9% of men and 93.3% of women said it is always wrong for a woman to have an abortion, in contrast to the 1.5% of men and 0.4% of women who said it is never wrong.

d. PERCEPTIONS & EXPERIENCE WITH HIV/AIDS

Although 95.4% of survey participants reported that they are concerned about getting HIV/AIDS and 93.9% believe that their friends are also concerned about it, only 32.1% of men and 19.1% of women said that the possibility of getting HIV affects their sexual practices (Table 4). Interestingly, whereas 21.4% of survey participants believe that their friends have a high risk of

contracting HIV, only 9.2% of survey participants believe that they themselves have a high risk of infection.

In total, 21.4% of respondents said that they talk to their friends about HIV/AIDS. While 11.8% of respondents said that they know someone who has HIV/AIDS, only 2.8% of those knew three or more people who have the virus. Gender differences were evident in the rate of respondents who had been tested for HIV (6.6% and 1.8% of men and women, respectively). Of those who had been tested for HIV, only 22.7% had been tested three or more times.

e. RELATIONSHIPS

Table 5 reflects data concerning relationships and communication with family members and peers. Most respondents said their parents support their decisions and actions (88.3% and 85.5% of men and women, respectively), although many fewer said that they share personal aspects of their private lives with their parents (50.0% and 54.3% of men and women, respectively). Even fewer reported that they talk with their parents about sex (36.9% and 48.2% of men and women, respectively). Of sexually-active respondents, only 12.1% of men and 27.6% of women reported that their parents know that they are sexually active. Most respondents (86.2% and 71.4% of men and women, respectively) said that they talk with their friends about sex and most respondents (82.4% and 73.7% of men and women, respectively) said they talk with their friends about HIV/AIDS.

f. SEXUAL BEHAVIORS AND EXPERIENCE

In total, 26.9% of men reported having ever had sex, in contrast to only 15.1% of women (Table 6). Of the 123 survey respondents who are sexually active, numerous distinctions were notable between the 87 men and 36 women in the realm of behaviors and experience. Male respondents were more likely than females to have had sex before age the median age of 17 (7.1% and 3.4% of men and women, respectively). While male survey respondents reported an average of 2.0 lifetime sexual partners, female respondents reported an average of 1.3 lifetime sexual partners. In addition, 9.5% of men and 2.8% of women reported having had three or more sexual partners in their lifetimes. In the area of concurrent sexual relationships, 4.6% of men and 0.03% of women reported having had more than one sexual partner during the past month. Regarding same-sex relationships, 97.7% of men and 90.6% of women report having had sex only with a member of the opposite sex and never with someone of their own sex.

In the area of sexual risk-taking, gender differences are again significant. While 96.4% of women reported never using alcohol or drugs during sex, only 89.9% of men reported the same. Among sexually-active respondents, the finding that 93.0% of males and 91.4% of females report having had vaginal sex is not surprising. However, the finding that 14.0% of men and 2.9% of women report having had anal sex is quite surprising and may relate to the fact that 21.7% of men report having paid for sex, in contrast to no women. Only 3.7% of men and 3.7% of women report having been paid for sex. High rates of anal sex and high rates of commercial sex have important implications for this study population, as commercial sex workers have the highest rates of HIV in Guatemala.¹³⁶

g. CONTRACEPTIVE USE & ACCESS

For sexually-active survey participants, 66.7% of men and 42.3% of women reported having used some form of contraception the last time they had sex (Table 7). Of those, 2.6% of men and no women used the pill, 62.8% of men and 30.8% of women used a condom, 3.8% of men and no women used the rhythm method, and no men and 15.4% of women used some other form of contraception. When asked how frequently they use condoms, 28.4% of men and 61.5% of women said never, whereas 33.3% of men and 11.5% of women said they always use condoms. Of all survey participants, only 47.1% of men and 11.9% of women said that they have access to condoms.

h. MULTIVARIATE ANALYSIS

Multivariate analysis demonstrates significant differences between ladino and Mayan respondents' knowledge and behavior, as well as numerous gender differences that are evident throughout the analysis (Table 8).

School-Based Sexuality Education

Ladinos are significantly less likely than Mayans to first learn about sex in school (odds ratio, 0.45), especially ladina women (odds ratio, 0.13). Overall, women are significantly more likely than men to have first learned about sex in school (odds ratio, 2.0). Young people who live with their parents are significantly more likely to have first learned about sex in school (odds ratio, 2.7), especially young men (odds ratio, 3.2). Young women who talk with their friends about HIV/AIDS are less likely to have first learned about sex in school (odds ratio, 0.3). Young women who first learned about sex in school are significantly less likely to plan to attend university after graduating from high school (odds ratio, 0.3).

Sexual Activity

Ladinos are significantly more likely than Mayans to ever have had sex (odds ratio, 2.6), especially ladino men (odds ratio, 4.2). Overall, women are significantly less likely than men to ever have had sex (odds ratio, 0.5). Respondents who attend church once or twice per week are less likely to ever have had sex (odds ratio, 0.5) than those who attend church less frequently, especially women (odds ratio, 0.3). Having first learned about sex in school is associated with lower odds of ever having had sex (odds ratio, 0.51). For gender-disaggregated analyses, this effect remains significant for young men (odds ratio, 0.48), but not for young women. There is no significant difference between the mean age of respondents who first learned about sex in school and those who first learned about sex from another source, eliminating the possibility that the association between first learning about sex in school and delaying sexual activity is driven by a counterfactual.

V. DISCUSSION

a. KEY FINDINGS

This study supports existing findings concerning the differing experiences and realities of Mayan and ladino youth in Guatemala. Significant disparities are evident between Mayan and ladino survey respondents concerning several revealing social and economic indicators, in addition to sexual knowledge and behavior. Similar to findings concerning economic disparities in Guatemala, the mean income of Mayan respondents is \$1,725 (standard error = \$200), in contrast

to \$4,745 (standard error = \$1,426) for ladino respondents. On a conservative values scale of 1-9, the mean score of Mayans is 8.4 (standard error = 0.05), in contrast to 7.9 (standard error = 0.23) for ladinos. Echoing research into health service accessibility in Guatemala, this study found that only 28.2% of Mayan respondents surveyed have access to condoms, in contrast to 51.1% of ladino respondents. Of sexually-active respondents, the average age of first sex was 17.0 (standard error = 0.23) for Mayans, in contrast to 15.4 (standard error = 0.55) for ladinos. The lifetime number of sexual partners for Mayans was 1.7 (standard error = 0.12), in contrast to 2.7 (standard error = 0.69) for ladinos. Further, 60.0% of ladinos reported that they used contraception the last time they had sex, in contrast to only 46.9% of Mayans. In addition, 15.3% of Mayans responded that they had paid to have sex, in contrast to only 6.7% of ladinos.

Beyond these important differences between Mayans and ladinos, this analysis also demonstrates that gender and ethnicity interact in important and complicated ways, setting different cultural standards for expected and accepted behavior among young women and men. Extremely conservative gender norms within the Mayan community penalize young people, young women especially, for becoming sexually active prior to marriage. These gender differences build on existing research highlighting how ladino norms of masculinity require young men to conform to 'macho' stereotypes by having sex early, often, and with multiple partners, while penalizing young women who do the same.¹³⁷

Paradoxically, while sexual activity among young ladino men is accepted and even encouraged, young women who are sexually-active risk being labeled as promiscuous for failing to conform to social standards of purity and chastity.¹³⁸ In some Mayan communities, families still require newlywed couples to provide blood evidence on the sheets to prove the tearing of the woman's hymen and thereby confirm her virginity. This cultural pressure is so severe in some communities that 'virginity reconstruction' is an elective surgery available in Guatemala, whereby a woman who has had premarital sex undergoes a surgical procedure to reconstruct her hymen prior to marriage so that her husband will not know that she is not a virgin on their wedding night. Some Guatemalan gynecologists estimate that 2% of women have undergone this dangerous procedure, which often results in infection, hemorrhaging, incontinence, and fistulas.¹³⁹

The simultaneous pressures that require young women to remain virginally pure while demanding that young men demonstrate their macho sexual prowess may in part contribute to the study findings concerning high rates of commercial sex; more than one-fifth of male respondents have paid for sex, with even higher percentages of Mayan men paying for sex than ladino men. As in many Latin American countries, anecdotal evidence in Guatemala indicates that fathers, uncles, and older male relatives often bring adolescent boys to sex workers so that they can 'become men,' a long-standing tradition that has dangerous new health implications as HIV/AIDS rates continue to increase among sex workers throughout the region. These survey variations in sexual activity and commercial sex merit further investigation into the complex and interconnected cultural norms in ladino and Mayan communities that create disparate social pressures, risks, and opportunities for young men and women.

This study demonstrates that having first learned about sex in school, in contrast to any other setting, is associated with increased likelihood that young people will delay sexual debut, a key

factor for reducing adolescent childbearing. Similar to findings from previous studies demonstrating that knowledge does not influence sexual behavior,^{140,141} this study did not find a relationship between survey participants' knowledge about contraception or HIV prevention and their likelihood of ever having had sex. Further, there was no significant association between survey participants' levels of knowledge about HIV and contraception and their sources of information about sexuality. One possible explanation for the link between learning about sex in school and delayed sexual debut may be a relationship between educational success, future academic plans, and delayed sexual debut – those students who first learned about sex in school may pay closer attention in school and delay sexual activity because they have greater perceived future academic potential. Despite the logic of this theory, the multivariate analysis demonstrates that young people who plan to attend university, a likely proxy for perceived future academic potential, are less likely to have first learned about sex in school than those who did not. These contradictory findings highlight the need to further explore exactly why first learning about sex in school, independent of actual knowledge gained or future academic plans, is associated with delayed sexual debut.

This study supports earlier findings concerning the crucial role played by parents in influencing youth sexuality.¹⁴² Survey participants who currently live with their parents are significantly more likely to first learn about sex in school, which is directly associated with lower likelihood of ever having had sex. These findings build upon existing research concerning the importance of relationships with parents; young people who live with their parents are less likely to be socially isolated, have greater educational and economic resources, and are less vulnerable to abuse and exploitation.¹⁴³

Beyond the importance of school-based sexuality education, this study demonstrates a relationship between religion and young people's sexual knowledge and practices in Guatemala. Multivariate analysis indicates that young people who attend church once or twice a week are less likely to ever have had sex than their less religious counterparts. This finding is not surprising, given that bivariate analysis demonstrates that survey respondents who attend church frequently also have more conservative beliefs concerning premarital sex, abortion, and same-sex behavior than their less religious counterparts (odds ratio, 1.3).

VI. CONCLUSIONS AND RECOMMENDATIONS

These study findings demonstrate a relationship between five principal factors – gender, ethnicity, religion, relationships with parents, and sources of information about sex – and young Guatemalans' sexual knowledge and behavior. These study findings also demonstrate significant disparities between Mayan and ladino youth's sexual knowledge and behaviors, underscoring the importance of better understanding and responding to the unique needs of Guatemala's diverse populations. This research validates the efforts of the Ministerial Declaration, highlighting the need to provide Guatemalan youth with comprehensive school-based sexuality education and services in order to reduce rates of unwanted pregnancy and adolescent childbearing.

Since Guatemala signed the Ministerial Declaration in 2008, the Ministries of Health and Education have made significant progress in increasing access to comprehensive sexuality education and sexual and reproductive health services for young people, fulfilling 51.2% and

53.8% of their health and education commitments, respectively.¹⁴⁴ Longitudinal studies examining how young people's sexual knowledge and practices change as a result of the Ministerial Declaration will be critical to understanding how different types of comprehensive sexuality education programs and services affect youth sexuality in Guatemala.

Study findings concerning the disparities between Mayan and ladino youth indicate that fulfillment of the Ministerial Declaration will be especially challenging in the case of Guatemala. Effective implementation will require that the Guatemalan government develop culturally-competent sexuality education curricula and services that respond to the very differing contexts and needs of Mayan and ladino youth. Although the Guatemalan government's commitment to the Ministerial Declaration has the potential to improve youth sexual and reproductive health outcomes, these efforts will only achieve maximum impact by responding to the divergent cultural norms and socio-economic realities of Mayan and ladino populations. Further, achieving the objectives set forth in the Ministerial Declaration will require policymakers, educators, and health practitioners to both recognize and address the significant cultural differences and socio-economic disparities characterizing the various communities they serve. Unlike some signatory countries in Latin America, a one-size-fits-all approach will not work in Guatemala – therefore, the Ministries of Health and Education must adapt their standardized curriculum and service delivery models to respond to the specific needs of marginalized indigenous communities.

TABLE 1:
Percentage distribution of respondents aged 18–24 in a sample of young adults
in Guatemala, by selected characteristics, by gender

	MEN		WOMEN	
	mean	sd	mean	sd
Sex				
Age (Average, St Dev)	18.76	1.10	18.76	1.19
Have ever had sex	26.9%		15.1%	
Ethnicity				
Indigenous Ethnicity	91.2%		95.4%	
Mestizo Ethnicity	8.2%		4.6%	
Creole Ethnicity	0.0%		0.0%	
Garifuna Ethnicity	0.0%		0.0%	
Other Ethnicity	0.6%		0.0%	
Religion				
Catholic	56.0%		53.7%	
Protestant	42.3%		46.3%	
Other Religion	1.6%		0.0%	
Church Attendance				
Attend Church more than once per week	33.7%		44.9%	
Attend Church once per week	35.3%		32.2%	
Attend Church twice per month	7.3%		8.6%	
Attend Church once per month	11.6%		9.4%	
Attend Church once per year	3.6%		0.8%	
Never attend Church	8.6%		4.1%	
Family Income (USD)	\$2,405	\$4,169	\$1,213	\$1,941
Number of Siblings	4.86	2.43	5.24	2.52
Live With Parents	91.1%		93.4%	
Currently Married	2.7%		6.3%	
Work and Attend School	38.6%		25.7%	
N	338		265	

TABLE 2:
Percentage distribution of responses to questions on sources of information about sex, knowledge of HIV transmission, pregnancy prevention, and emergency contraception, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
First Sources of Information				
First learned about sex from Mother	3.6%		11.2%	
First learned about sex from Father	3.0%		1.6%	
First learned about sex from Brothers/Sisters	0.9%		1.2%	
First learned about sex from Friends	16.8%		5.0%	
First learned about sex from School	46.5%		62.4%	
First learned about sex from Church	0.9%		0.8%	
First learned about sex from Television	16.8%		11.6%	
First learned about sex from Books	7.2%		5.0%	
First learned about sex from Other Source	4.2%		1.2%	
Age when they learned about sex for the first time	13.08	3.07	13.25	2.71
Additional Sources of Information				
Also learned about sex from Mother	10.6%		29.5%	
Also learned about sex from Father	14.9%		10.5%	
Also learned about sex from Brothers/Sisters	5.5%		8.5%	
Also learned about sex from Friends	44.1%		25.2%	
Also learned about sex from School	60.8%		70.2%	
Also learned about sex from Church	6.1%		7.8%	
Also learned about sex from Television	53.8%		49.4%	
Also learned about sex from Books	52.0%		53.7%	
Also learned about sex from Other Source	12.5%		12.0%	

TABLE 2a:
Percentage distribution of responses to questions on sources of information about sex, knowledge of HIV transmission, pregnancy prevention, and emergency contraception, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Knowledge About HIV Transmission				
Think that HIV can be transmitted by:				
Shaking hands with an infected person	3.4%		5.8%	
Mosquito bites	20.0%		18.6%	
Having vaginal sex with an infected person	9.5%		12.0%	
Kissing an infected person	13.2%		14.0%	
Blood	22.8%		17.8%	
Sharing utensils with an infected person	9.5%		13.2%	
Smoking marijuana with an infected person	13.5%		17.8%	
Knowledge About Pregnancy Prevention				
Think that pregnancy can be prevented by:				
Washing with vinegar	97.8%		97.4%	
Using the pill	42.9%		45.4%	
Using emergency contraception	29.8%		37.0%	
Abstinence	17.0%		14.5%	
Using a condom	83.0%		79.3%	
Having sex standing up	93.6%		96.0%	
Having sex during the woman's period	80.1%		80.5%	
Having sex for the first time	91.3%		90.7%	
Knowledge About Emergency Contraception				
Think that emergency contraception is:				
A monthly method used to prevent pregnancy	55.0%		53.0%	
A method used to cause abortion	74.4%		80.0%	
A method used to prevent HIV/AIDS	79.4%		82.2%	
A method used to prevent pregnancy up to 5 days after sexual intercourse	29.8%		33.0%	
N	338		265	

TABLE 3:
Percentage distribution of responses to questions on premarital sex, same-sex behavior, abortion, and community values, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Perceptions of Community Values				
Believe it is important in his/her community for a woman to be a virgin when she gets married	79.4%		91.7%	
Believe it is important in his/her community for a man to be a virgin when he gets married	67.3%		80.2%	
Opinions About Same-Sex Behavior				
Believe that when two people of the same sex have intercourse, it is always wrong	87.7%		89.4%	
Believe that when two people of the same sex have intercourse, it is sometimes wrong	6.9%		7.8%	
Believe that when two people of the same sex have intercourse, it is never wrong	5.4%		2.7%	
Opinions About Pre-Marital Sex				
Believe that when a woman has sex before marriage, it is always wrong	78.6%		88.2%	
Believe that when a woman has sex before marriage, it is sometimes wrong	18.4%		9.0%	
Believe that when a woman has sex before marriage, it is never wrong	3.0%		2.7%	
Believe that when a man has sex before marriage, it is always wrong	75.1%		87.1%	
Believe that when a man has sex before marriage, it is sometimes wrong	21.6%		10.1%	
Believe that when a man has sex before marriage, it is never wrong	3.3%		2.8%	
Opinions About Abortion				
Believe that when a woman has an abortion, it is always wrong	94.9%		93.3%	
Believe that when a woman has an abortion, it is sometimes wrong	3.6%		6.3%	
Believe that when a woman has an abortion, it is never wrong	1.5%		0.4%	
Believe teen pregnancy is a national problem	96.0%		92.4%	
Believe HIV/AIDS is a national problem	91.7%		92.9%	
N	338		265	

TABLE 4:
Percentage distribution of responses to questions on perceptions and experiences
with HIV/AIDS, by gender

	MEN		WOMEN	
	mean	sd	mean	sd
Perception of Friends' Risk for HIV				
Believe that their friends have very high risk for HIV	23.7%		18.0%	
Believe that their friends have little risk for HIV	29.9%		19.0%	
Believe that their friends have no risk for HIV	46.4%		63.0%	
Perception of Self Risk for HIV				
Believe that they themselves have very high risk for HIV	9.9%		8.1%	
Believe that they themselves have little risk for HIV	15.8%		10.5%	
Believe that they themselves have no risk for HIV	74.3%		81.3%	
Is personally concerned about getting HIV/AIDS	95.7%		95.0%	
Think their friends are concerned about getting HIV/AIDS	94.8%		92.7%	
Believe the possibility of getting HIV/AIDS affects their sexual practices	32.1%		19.1%	
Know someone who is HIV positive	11.0%		12.8%	
Number of people he/she knows who has HIV/AIDS	0.29	1.07	0.34	1.45
Have been tested for HIV/AIDS	6.6%		1.8%	
Number of times he/she has been tested for HIV/AIDS	0.17	0.70	0.09	0.62
N	338		265	

TABLE 5:
Percentage distribution of responses to questions on relationships and communication with parents, peers, and future plans, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Relationship With Parents				
Think that parents support the majority of their decisions	88.3%		85.5%	
Share personal aspects of their private life with their parents	50.0%		54.3%	
Talk to parents about sex	36.9%		48.2%	
Parents know he/she is sexually active	12.1%		27.6%	
Relationship With Peers				
Friends also know she/he is sexually active	80.0%		57.1%	
Sibling also knows she/he is sexually active	12.0%		21.4%	
Other person also knows she/he is sexually active	8.0%		21.4%	
Talk to current partner about sex	71.0%		73.3%	
Talk with their friends about sex	86.2%		71.4%	
Talk with friends about HIV/AIDS	82.4%		73.7%	
Work and Educational Plans				
After completing college, plans to attend university	77.0%		76.0%	
After completing college, plans to work	41.5%		51.2%	
After completing college, plans to do other	11.5%		11.6%	
Marriage Plans				
Plans to get married in the next five years	37.8%		40.8%	
Plans to get married in the next ten years	42.6%		36.9%	
Plans to get married in more than ten years	17.4%		17.3%	
Never plans to get married	2.1%		5.1%	
Family Plans				
Plan to have children	96.0%		90.4%	
Total number of children plan to have	2.72	0.99	2.67	0.90
N	338		265	

TABLE 6:
Percentage distribution of sexually experienced respondents who reported selected sexual behaviors and experiences, by gender

	MEN		WOMEN	
	mean	sd	mean	Sd
Have ever had sex	26.9%		15.1%	
Age – Average (Standard Deviation)	19.17	1.38	19.72	1.98
Age at first sex – Avg (St Dev)	16.65	2.21	16.94	2.48
Have been forced to have sex	5.8%		12.1%	
Sexual Attraction				
Feel sexual attraction for men only	1.6%		88.7%	
Feel sexual attraction for men and women	8.7%		10.8%	
Feel sexual attraction for women only	89.6%		0.5%	
Types of Sexual Partners				
Has had sex with only men	1.2%		90.6%	
Has had sex with both men and women	1.2%		9.4%	
Has had sex with only women	97.7%		0.0%	
Age of current (or last) partner – Avg (Stdev)	17.73	2.47	20.69	4.81
Current partner is male	0.0%		100.0%	
Current partner is female	100.0%		0.0%	
Types of Sexual Activity				
Have had vaginal sex	93.0%		91.4%	
Have had anal sex	14.0%		2.9%	
Have had oral sex	16.3%		17.1%	
When he/she has sex, it is unplanned	48.2%		57.1%	
When he/she has sex, it is planned	51.8%		42.9%	
Number of Sexual Partners				
Number of lifetime sexual partners – Avg (St Dev)	1.98	1.65	1.27	0.62
Number of partners last year – Avg (St Dev)	1.76	3.34	0.59	0.50
Number of partners last month – Avg (Stdev)	0.58	1.28	0.59	0.50
Number of sexual acts last month – Avg (Stdev)	1.09	2.03	1.11	1.50
Drug and Alcohol Use During Sex				
Use drugs/alcohol during sex never	89.9%		96.4%	
Use drugs/alcohol during sex sometimes	8.9%		0.0%	
Use drugs/alcohol during sex almost always	1.3%		3.6%	
Use drugs/alcohol during sex always	0.0%		0.0%	
Commercial Sex				
Has paid to have sex	21.7%		0.0%	
Has been paid to have sex	3.7%		3.7%	
N	87		36	

TABLE 7: Percentage distribution of contraceptive use by sexually experienced respondents, by gender

	MEN		WOMEN	
	mean	sd	mean	sd
Frequency of Contraceptive Use Last Year				
Never	34.2%		63.3%	
Sometimes	34.2%		20.0%	
Almost always	15.2%		10.0%	
Always	16.5%		6.7%	
Frequency of Contraceptive Use Last Month				
Never Used Contraception	50.9%		62.5%	
Used Contraception Sometimes	14.5%		16.7%	
Used Contraception Almost Every Time	3.6%		0.0%	
Used Contraception Every Time	30.9%		20.8%	
Type of Contraception Most Frequently Used				
Contraceptive pill	3.4%		0.0%	
Condom	75.9%		39.3%	
Diaphragm	1.1%		3.6%	
Rhythm method	5.7%		0.0%	
Other	1.1%		10.7%	
None	24.1%		50.0%	
Any Form of Contraception	3.4%		3.4%	
Type of Contraception Used During Last Sex				
Any Contraception	66.7%		42.3%	
Contraceptive pill	2.6%		0.0%	
Condom	62.8%		30.8%	
Diaphragm	1.3%		0.0%	
Rhythm method	3.8%		0.0%	
Other	0.0%		15.4%	
No Contraception	33.3%		57.7%	
Condom Use				
Never use condoms	28.4%		61.5%	
Rarely use condoms	12.3%		15.4%	
Sometimes use condoms	17.3%		11.5%	
Frequently use condoms	8.6%		0.0%	
Always use condoms	33.3%		11.5%	
Have access to condoms	47.1%		11.9%	
Feels comfortable getting condoms	46.8%		14.2%	
Carry condoms in case of a possible sexual encounter	32.1%		9.8%	
N	87		36	

TABLE 8: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Selected Characteristics and Sexual Experience and First Learning About Sex in School, by Gender

	FIRST LEARNED ABOUT SEX IN SCHOOL			EVER HAD SEX		
	AGG or/se	MALE or/se	FEMALE or/se	AGG or/se	MALE or/se	FEMALE or/se
Age	1.17 0.114	1.176 0.145	1.177 0.202	1.766*** 0.199	1.665*** 0.233	1.970** 0.411
Female	2.003** 0.436			0.532* 0.157		
Evangelical Protestant	1.245 0.267	1.192 0.332	1.138 0.401	0.956 0.267	0.64 0.229	1.763 0.979
Ladino	0.446* 0.18	0.717 0.333	0.125* 0.114	2.627* 1.141	4.245** 2.211	0.249 0.405
Talk to Parents About Sex	0.925 0.212	0.879 0.265	0.892 0.331	1.403 0.412	1.877 0.683	0.606 0.349
Share Personal Life With Parents	0.981 0.217	1.12 0.323	0.83 0.307	0.654 0.187	0.743 0.27	0.491 0.277
First Learned About Sex in School				0.511* 0.14	0.475* 0.159	0.428 0.247
Live with Parents	2.661* 1.035	3.227* 1.732	1.78 1.164	2.001 1.147	7.065 7.591	0.48 0.411
Talk to Friends about Sex	0.865 0.236	0.798 0.307	1.073 0.444	1.443 0.602	2.134 1.309	1.256 0.828
Talk to Friends About HIV	0.643 0.175	1.028 0.376	0.332* 0.156	0.997 0.354	0.922 0.417	1.12 0.775
Knowledge About HIV / AIDS	1.13 0.112	1.207 0.173	1.043 0.153	1.289 0.188	1.46 0.294	1.191 0.28

TABLE 8a: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Selected Characteristics and Sexual Experience and First Learning About Sex in School, by Gender

	FIRST LEARNED ABOUT SEX IN SCHOOL			EVER HAD SEX		
	AGG or/se	MALE or/se	FEMALE or/se	AGG or/se	MALE or/se	FEMALE or/se
Plan to Attend University after Graduation	0.557* 0.158	0.931 0.349	0.296* 0.143	1.066 0.393	1.467 0.722	0.724 0.458
Plan to Work after Graduation	0.774 0.182	1.01 0.313	0.579 0.218	0.901 0.277	0.625 0.25	1.997 1.205
Attend Church Weekly or More	1.13 0.263	1.2 0.351	0.875 0.371	0.549* 0.154	0.616 0.215	0.268* 0.153
Knowledge About Pregnancy Prevention	1.055 0.086	1.081 0.122	1.076 0.134	0.967 0.103	1.001 0.142	0.921 0.176
N	427	248	179	406	240	166

* p = < .05, ** p = < .01, *** p = < .001

CHAPTER 5:

Youth Sexual Risk-Taking in Mesoamerica: A Comparative Analysis of Youth Sexual Knowledge, Attitudes, and Practices in Mexico, Belize, and Guatemala

I. BACKGROUND

The merits of school-based sexuality education have been hotly debated in the academic literature, among policymakers, and within the field of public health. Proponents assert that comprehensive, age-appropriate sexuality education beginning in elementary school is the most effective way to provide young people with the evidence-based information they need to make healthy decisions, avoid unwanted pregnancy, and prevent sexually transmitted infections (STIs) including HIV/AIDS.¹⁴⁵ Opponents argue that comprehensive sex education programs encourage young people to engage in sexual risk-taking by providing them with information about contraception and argue instead for abstinence-only curricula emphasizing sexual abstinence as the only effective and moral way to prevent pregnancy and STIs/HIV.¹⁴⁶

Building upon existing research and program evaluations analyzing the effects of sexuality education, this study explores the diverse factors that influence the sexual knowledge, attitudes, and practices of young adults in the Mesoamerican region of Mexico, Belize, and Guatemala.¹⁴⁷ The central aim of this study is to identify predictors of youth sexual activity by examining a range of possible factors, including: relationships and communication with family and peers, knowledge about contraception and HIV prevention, future plans, ethnicity, religion, and sources of information about sexuality, including school-based programs. This study offers some initial insights into the principal factors that influence youth sexuality in the Mesoamerican region.

Analysis of school-based sexuality education in Mesoamerica is needed and timely, responding to the 2008 launch of the Mexico City Ministerial Declaration ‘Prevenir Con Educación’ (Preventing Through Education), a regional initiative to expand young people’s access to comprehensive sexuality education and services.¹⁴⁸ The Ministerial Declaration emerged from the XVII International AIDS Conference held in Mexico City in August 2008, during which the Ministries of Health and Education of all Latin American governments committed to expanding access to comprehensive sexuality education and integrated sexual and reproductive health services for youth. This path-breaking Ministerial Declaration is the first of its kind, formally recognizing that “Sexuality is an essential part of being human..... it is necessary to provide quality education that includes comprehensive education on sexuality both as a human right, as well as one that contributes to present and future quality of life.”¹⁴⁹ Beyond recognizing the inherent value of sexuality education and the need to increase access to information and services, the signatory countries committed to “Implement and/or strengthen multi-sectoral strategies of comprehensive sexuality education and promotion of sexual health, including HIV/STI prevention.”¹⁵⁰

The Ministerial Declaration is one of the most progressive efforts of its kind, requiring the Ministries of Health and Education of Mexico, Belize, Guatemala, and all other signatory countries to update sexuality education curricula to reflect evidence-based best practices within

the field of youth sexual and reproductive health and expand these improved programs nationally.¹⁵¹ By 2015, all participating countries have committed to reducing the number of schools that have not institutionalized comprehensive sexuality education by 75%, and reducing the number of young people who do not have access to sexual and reproductive health services by 50%. To date, Mexico, Guatemala, and Belize have all achieved differing degrees of progress in fulfilling their commitments to the Ministerial Declaration.

Throughout Mesoamerica, support for the Ministerial Declaration stems from a growing movement of advocates working to improve the sexual and reproductive outcomes of young people, who comprise a large proportion of the region's total population. In Mexico, approximately 29% of Mexico's 110 million inhabitants are under the age of 14.¹⁵² Belize also has a very large youth population, with 39% of the population currently under the age of 15.¹⁵³ In Guatemala; 42% of the total population is under the age of 15, making it one of the youngest populations in the region.¹⁵⁴ In addition to forming a large subset of the region's total population, young people's sexual and reproductive health needs are great. For example, only 48% of Mexican women ages 15-24 who are sexually active use modern methods of contraception.¹⁵⁵ Further, Belize's national HIV prevalence rate is 2.3%, with young Belizeans accounting for 40% of all new infections.^{156, 157} In addition, 44% of young Guatemalan women give birth before age 20. However, despite the clear need to reduce adolescent childbearing and HIV infection rates throughout the region, numerous political and cultural obstacles limit efforts to expand sexual and reproductive health education and services. Successful implementation of the Ministerial Declaration will therefore depend not only on increased national political commitment and ongoing advocacy efforts, but also greater understanding of the sexual and reproductive health knowledge, attitudes, and practices of Mesoamerican youth.

Around the world, the potential consequences of early sexual debut – including adolescent childbearing and HIV/AIDS – are not only severe for young adults, but also for their families and communities. Unwanted pregnancies have harsh consequences for young mothers and their infants, both for their immediate health status as well as for their long-term educational and employment opportunities.¹⁵⁸ Early childbearing has been associated with lowered socio-economic status, curtailed educational achievement, and limited earning potential for young mothers.¹⁵⁹ In addition to unwanted pregnancy, sexually-active young adults are at risk of STIs, including HIV/AIDS. When young adults cut short their studies or drop out of the work force due to unplanned pregnancies or HIV infections, their potential economic productivity is reduced, contributing to higher rates of poverty for their families and communities over the long term.¹⁶⁰ These challenges are exacerbated by limited educational and employment opportunities and conservative gender norms that heighten the negative consequences associated with sexual activity among youth.¹⁶¹

Beyond examining the influence of socio-cultural factors on sexual activity, this study also explores how knowledge about HIV prevention and contraception affect young people's sexual practices. To date, the relationship between young people's knowledge and sexual practices is unclear, as studies examining the relationship between sexual knowledge and behavior have reported mixed results.¹⁶² Some have found positive associations,¹⁶³ others have found negative associations,¹⁶⁴ and still others demonstrate no association when controlling for social and demographic indicators.¹⁶⁵ This existing research suggests the need to better understand the

linkages between knowledge and behavior within the context of broader social norms that influence youth sexual and reproductive health outcomes.¹⁶⁶ To that end, this study explores the diverse social factors that influence youth sexuality in the Mesoamerican region by examining key similarities and differences between Mexico, Belize, and Guatemala.

II. METHODS

a. SAMPLE

Data collection was conducted between May 2007 and July 2009 in Mexico, Belize, and Guatemala and is based on a written survey of 1686 young adults aged 18 to 24 years who were completing their final year of high school at the time of the study. Study participants include 239 young men and 303 young women in Mexico, 249 young men and 293 young women in Belize, and 337 young men and 265 young women in Guatemala. In Mexico, the survey was administered in Chetumal, a town located in the state of Quintana Roo on the Yucatan Peninsula of southern Mexico. In Belize, the survey was administered in each of Belize's six districts, including the towns of Belize City, Belmopan, Dangriga, San Ignacio, Orange Walk, Corozal, and Punta Gorda. In Guatemala, the survey was administered in the department of Sololá, a rural area in the Western highlands of Guatemala. Although the majority of high school seniors (1539) participating in the study are between the ages of 18 and 20, the age range for analysis has been extended to age 24, as many students in the region do not finish their schooling until they are in their early twenties.

Using a stratified sampling method, the 31 schools selected for participation are representative of the socio-economic spectrum in the three countries and reflect the realities of a broad cross-section of school-based youth in their communities. In identifying schools for participation, the study author ensured that the sample included schools with students whose backgrounds and experiences are substantively representative of the region. While some participating schools have very little resources and serve students from extremely poor families, others are known for providing high-quality education to students who come from more economically stable families, and some schools fall in between. Within each participating school, all students between the ages of 18 and 24 who attended school on the day that the survey was administered participated in the study and are representative of their peers concerning numerous important factors, including ethnicity, race, religion, and socio-economic background. Therefore, the study findings are substantively representative of the broader population of young adults attending high school throughout the region.

This sample includes respondents from all the region's major ethnic groups, including indigenous Mayans, Mestizos (also known as Ladinos in some countries), Creoles, and Garifunas. Ethnicity in Mesoamerica is a historically shifting social construct that has been defined not just by physical appearance alone but also by cultural identity. This cultural identity varies widely both across and within groups, and may include several practices such as speaking an indigenous language, wearing native dress, and participating in traditional ceremonies and dances that incorporate specific foods and music. Due to the significant cultural, social, and economic differences between the region's diverse ethnic groups, this study explores the ways in which different ethnic identities shape youth sexuality.

Within Mesoamerica, indigenous Mayans include a broad range of the native American peoples of southern Mexico and northern Central America. Although the term Mayan refers to a broad ethnic group within Mesomaerica that shares some degree of cultural and linguistic heritage, it also includes numerous distinct smaller ethnic groups that have their own languages, traditions, and historical identity. Across the region, indigenous Mayans are socially, economically, linguistically, and geographically marginalized, and have far worse demographic, health, literacy, and economic indicators than other ethnic groups.¹⁶⁷ The region's Mestizo or Ladino population is made up of descendants of the Spanish conquerors and indigenous Amerindian groups who identify as having cultural heritage that combines European and indigenous traditions. These terms are often used to refer to non-indigenous ethnic groups throughout Mesoamerica that now form the region's upwardly mobile middle class who are economically and politically dominant and live primarily in urban areas. Within Mesoamerica, Creoles were originally the descendents of African slaves and Scottish loggers who colonized Belize. More recently, the term Creole has been used to describe any person who speaks Kriol and is at least partially of African descent, but who is not Garifuna. Creoles live throughout the country of Belize and are found predominantly in urban areas such as Belize City. The Garifuna population is a small and marginalized sub-population that are descendents of Carib, Arawak, and West African people that live primarily on the Atlantic coast of Belize and other Central American countries. Like Mayans and Creoles, the Garifuna have maintained their own language and practice their own unique cultural traditions.

b. SURVEY

Surveys were implemented in students' classrooms by the US-based study author and/or a local researcher. To ensure the confidentiality and comfort of students participating in the study, the study author and local researchers asked teachers to leave the room during administration of the survey and remained in the classroom to answer questions and address students' concerns.

The research centered on results from a structured questionnaire containing 95 variables, including a combination of multiple choice and open-ended questions. The first part of the survey instrument included questions on personal plans and goals, relationships with parents and peers, social support, and sources of information about sex. The second part included questions on sexual experience, frequency and types of contraceptive use, number of sexual partners, and interpersonal communication about sex. The third part addressed attitudes and beliefs concerning sexuality, premarital sex, teen pregnancy, abortion, and same sex behaviors. The fourth part explored perceived risk for HIV infection for self and peers, interpersonal communication about HIV/AIDS, and direct experience with HIV-positive acquaintances and HIV-testing. The fifth part examined knowledge concerning contraception and modes of HIV transmission. The final part included social, demographic, and economic characteristics of the surveyed respondent's personal and family background. In most cases, study participants completed the questionnaire within one hour.

c. MEASURES

Building on measures from previous studies, the study author used multiple questions to examine discrete constructs from a range of angles.¹⁶⁸ For example, to understand survey participants' relationships and communication with their parents and peers, five single-item indicators serve

as measures using the following wording: “Do you share personal aspects of your private life with your parents?”; “Do you talk with your parents about sex?”; “Do you live with your biological mother and father?”; “Do you talk to your friends about sex?”; “Do you talk to your friends about HIV/AIDS?” All five items are coded dichotomously.

Two questions examined how and when respondents first learned about sex. The first question used the following wording: “Where did you learn about sex for the first time?” with the following response choices: From my mother, From my father, From my brothers/sisters, From my friends, In school, In church, On television, Books, and Other. The second question used the following wording: “How old were you when you learned for the first time about sex, or sexual intercourse?” One question explored survey respondents’ future academic and professional plans: “What are your plans after completing high school?” with the following response choices: Attend university, Work, Other.

Two questions explored knowledge about HIV and contraception, for which respondents were asked to circle all correct possible responses. Seven items assessed participants’ knowledge of HIV transmission (eg. “HIV/AIDS is transmitted by mosquitoes” and “HIV/AIDS is transmitted by having vaginal sex with an infected person”). The range of possible scores was 1-7, with higher scores pointing to greater knowledge about effective mechanisms to prevent HIV. Eight items assessed participants’ knowledge of contraception (eg. “A couple can prevent an unwanted pregnancy by washing with vinegar” and “A couple can prevent an unwanted pregnancy by using a condom”). The range of possible scores was 1-8, with higher scores pointing to greater knowledge about contraception. The question “Do you know someone who has HIV/AIDS?” was coded dichotomously.

Five variables examined contraceptive use among sexually-active survey participants. “Did you use contraception the last time you had sex?” is coded dichotomously. “In case you had sex during the last month, how frequently did you use contraception?” used a four-point scale where 1=Always, 2=Almost Always, 3=Sometimes, 4=Never. “In case you use contraception, what type of contraception do you use most frequently?” and “If you used contraception the last time you had sex, what type of contraception did you use?” had six pre-coded answers with the following response choices: Contraceptive pill, Condom, Diaphragm, Rhythm method, Other, None. The question “How frequently do you use condoms?” used a five-point scale where: 1=Never, 2=Rarely, 3=Sometimes, 4=Frequently, and 5=Always. In the multivariate analysis of consistent condom usage, the study author coded those who responded Never, Rarely, and Sometimes as 0 and those who responded Frequently or Always as 1.

Three single-item indicators serve as measures reflecting whether respondents engage in specific high-risk behaviors that further heighten their vulnerability to HIV. “When you have sex, how frequently are you under the influence of alcohol or drugs?” used a four-point scale where 1=Never, 2= Sometimes, 3=Almost always, 4=Always. “Have you ever paid to have sex?” and “Have you ever been paid to have sex?” were coded dichotomously.

The author created a Conservative Sexual Morality Scale to assess respondents’ agreement with more traditionally conservative views about human sexuality. This composite indicator consisted of four Likert-type items exploring perceptions about premarital sex among men and women,

same-sex behavior, and abortion. The possible score for this scale ranged from 1 to 9, with higher scores pointing to more conservative views of sexuality. Mean scores varied significantly by country – 6.04 in Mexico (standard deviation = 0.095), 5.75 in Belize (standard deviation = 0.089), and 8.35 in Guatemala (standard deviation = 0.048). Across the three countries, the mean score was 6.76 (standard deviation = 0.054) and Cronbach’s alpha was 0.80.

The survey included questions concerning gender, age, ethnicity, and religion. The study author sought to examine differences between respondents who were very religious and those who were less religious, using frequency of church attendance as a proxy for religiosity. In the multivariate analysis of church attendance, the study author coded those who responded “Once per week” or “Twice per week” as 1 and those who responded “Twice per month,” “Once per month,” “Once per year,” and “Never” as 0.

d. DATA ANALYSIS

Study data were analyzed using STATA-10. For bivariate analysis, t-tests and chi-square tests were used to determine significant differences at $p < 0.05$. Logistic regression was used for multivariate analysis. All results were analyzed jointly and separately for females and males.

III. RESULTS

a. SAMPLE CHARACTERISTICS

Table 1 demonstrates that the mean age of male survey participants was the same in all three countries (18.8), and very similar for female survey participants (18.6 in Mexico, 18.7 in Belize, and 18.8 in Guatemala). Slightly higher proportions of survey respondents were female in Mexico (55.9% female and 44.1% male) and Belize (54.1% female and 45.9% male) than in Guatemala, where a slightly higher proportion of survey respondents was male (44.0% female and 56.0% male).

Ethnic differences were substantial across the three countries. In Mexico, a small proportion of respondents identified as indigenous Mayan (17.7% of men and 22.5% of women), which was similar to Belize (18.7% of men and 18.1% of women), and very different from Guatemala (91.2% of men and 95.4% of women). Many more Mexicans identified as mestizo (74.2% of men and 69.9% of women), with a smaller proportion in Belize (44.3% of men and 42.0% of women), and a much smaller proportion in Guatemala (8.2% of men and 4.6% of women). While there are no Creoles or Garifuna in either Mexico or Guatemala, a relatively large proportion of Belizeans identify as Creole (22.4% of men and 25.6% of women) and a small proportion of Belizeans identify as Garifuna (6.1% of men and 2.7% of women).

Male respondents in all three countries identified predominantly as Catholic (73.8% in Mexico, 44.9% in Belize, and 56.0% in Guatemala), as did female respondents (75.0% in Mexico, 52.2% in Belize, and 53.7% in Guatemala). Despite the predominance of Catholicism, relatively large proportions of male survey respondents identified as Protestant (16.4% in Mexico, 38.0% in Belize, and 42.3% in Guatemala), similar to rates for female respondents (19.1% in Mexico, 36.9% in Belize, and 46.3% in Guatemala). Church attendance varied widely across the three countries and by sex. Varying proportions of male respondents attend church one or more times

per week (30.1% in Mexico, 33.2% in Belize, and 69.0% in Guatemala), as did female respondents (39.7% in Mexico, 50.1% in Belize, and 77.1% in Guatemala).

In all three countries, men were more likely than women to work while attending school. Among men, 38.4% of Mexicans, 54.1% of Belizeans, and 38.6% of Guatemalans concurrently work and attend school. These figures are lower among women, with 19.5% of Mexicans, 39.2% of Belizeans, and 25.7% of Guatemalans concurrently working and attending school.

b. KNOWLEDGE

Participants' knowledge of HIV/AIDS varied both by sex and across the three countries (Table 2). Among men, 81.6% of Mexicans, 91.1% of Belizeans, and 80.0% of Guatemalans correctly responded that HIV could not be transmitted by mosquitoes; among women, 89.9% of Mexicans, 91.8% of Belizeans, and 81.4% of Guatemalans correctly responded that mosquitoes do not transmit HIV. The majority of males correctly responded that HIV can be transmitted by vaginal sex (94.4% of Mexicans, 86.6% of Belizeans, and 90.5% of Guatemalans), as did the majority of females (91.9% of Mexicans, 90.8% of Belizeans, and 88.0% of Guatemalans). The majority of males also correctly responded that HIV can be transmitted by blood (90.6% of Mexicans, 85.0% of Belizeans, and 77.2% of Guatemalans), as did the majority of females (91.3% of Mexicans, 91.1% of Belizeans, and 82.2% of Guatemalans). However, larger proportions of male survey respondents incorrectly believed that HIV can be transmitted by kissing, especially in Belize (6.4% of Mexicans, 29.6% of Belizeans, and 13.2% of Guatemalans), with similar proportions evident for females (5.4% of Mexicans, 35.5% of Belizeans, and 14.0% of Guatemalans).

Participants' knowledge of the ways in which a couple can prevent unwanted pregnancy varied substantively, demonstrating widespread misunderstanding and lack of knowledge concerning effective contraceptive methods, both by sex and across the three countries (Table 2). Among men, knowledge of the effectiveness of the pill as a means to prevent unwanted pregnancy varied from 77.7% for Mexicans, 65.2% for Belizeans, and 42.9% for Guatemalans. Similarly, knowledge of the pill varied widely among women, ranging from 81.1% of Mexicans, 74.3% of Belizeans, and 45.4% of Guatemalans. Knowledge of emergency contraception was low among men, with 52.0% of Mexicans, 37.2% of Belizeans, and 29.8% of Guatemalans correctly responding that emergency contraception can be used to prevent an unwanted pregnancy. Among women, knowledge of emergency contraception was higher, with 60.3% of Mexicans, 40.1% of Belizeans, and 37.0% of Guatemalans correctly responding that emergency contraception can be used to prevent an unwanted pregnancy. Additional confusion was evident concerning a common myth about preventing pregnancy by having sex standing up. Among men, 14.8% of Mexicans, 16.2% of Belizeans, and 19.9% of Guatemalans believed that having sex standing up would prevent pregnancy, in contrast to somewhat lower proportions of women – 9.4% of Mexicans, 14.4% of Belizeans, and 19.5% of Guatemalans. With the majority of questions about contraception, female respondents had higher correct response rates than male.

For sources of knowledge about sex, proportions varied both by sex and by country (Table 3). Among men, 12.7% of Mexicans, 3.2% of Belizeans, and 3.6% of Guatemalans first learned about sex from their mother, substantially less than the proportions of women (25.9% of Mexicans, 22.8% of Belizeans, and 11.2% of Guatemalans). Varying proportions of men first learned about sex from their father (6.1% of Mexicans, 4.9% of Belizeans, and 3.0% of

Guatemalans), with very few women first learning about sex from their father (1.4% of Mexicans, 0.3% of Belizeans, and 1.6% of Guatemalans). Substantive proportions of men first learned about sex from their friends (14.8% of Mexicans, 34.8% of Belizeans, and 16.8% of Guatemalans), in contrast to lower proportions of women (5.5% of Mexicans, 14.8% of Belizeans, and 5.0% of Guatemalans). Large proportions of men first learned about sex in school (50.7% of Mexicans, 32.8% of Belizeans, and 46.5% of Guatemalans), as did large proportions of women (57.6% of Mexicans, 45.5% of Belizeans, and 62.4% of Guatemalans).

c. RELATIONSHIPS WITH PARENTS AND PEERS

Table 4 demonstrates that most male respondents report their parents support the majority of their decisions and actions (88.2% in Mexico, 66.7% in Belize, and 88.3% in Guatemala), as do most females (86.7% in Mexico, 65.3% in Belize, and 85.5% in Guatemala). Much lower proportions of male respondents in all three countries report that they share personal aspects of their private lives with their parents (55.5% in Mexico, 38.2% in Belize, and 50.0% in Guatemala), similar to their female counterparts (59.1% in Mexico, 44.0% in Belize, and 54.3% in Guatemala). Among men, even fewer talk to their parents about sex (46.0% in Mexico, 27.4% in Belize, and 36.9% in Guatemala), in contrast to some variability among women (61.4% in Mexico, 48.5% in Belize, and 48.2% in Guatemala).

In the area of peer relationships, the majority of men talk with their friends about sex (83.5% in Mexico, 82.1% in Belize, and 86.2% in Guatemala), as do the majority of women (81.8% in Mexico, 62.3% in Belize, and 71.4% in Guatemala). Slightly lower proportions of men talk with their friends about HIV/AIDS (69.8% in Mexico, 77.8% in Belize, and 82.4% in Guatemala), while the proportions of women who talk with their friends about HIV/AIDS varied in relation to those who talk to friends about sex (75.9% in Mexico, 71.9% in Belize, and 73.7% in Guatemala). Much lower proportions of male respondents reported that they know someone who is HIV-positive (19.7% in Mexico, 48.2% in Belize, and 11.0% in Guatemala), similar to their female counterparts (18.2% in Mexico, 46.1% in Belize, and 12.8% in Guatemala).

d. FUTURE PLANS

Table 5 illustrates interesting differences across the three countries concerning respondents' future plans. The majority of young men plan to attend university following high-school graduation (81.7% in Mexico, 57.9% in Belize, and 77.0% in Guatemala), as do the majority of women (79.7% in Mexico, 67.8% in Belize, and 76.0% in Guatemala). Lower proportions of men plan to work following graduation (19.1% in Mexico, 38.4% in Belize, and 41.5% in Guatemala), relatively similar to women (19.9% in Mexico, 30.8% in Belize, and 51.2% in Guatemala). Very high proportions of men plan to get married within the next ten years (75.3% in Mexico, 63.4% in Belize, and 80.4% in Guatemala), as do very high proportions of women (80.3% in Mexico, 79.7% in Belize, and 77.7% in Guatemala).

e. SEXUAL BEHAVIOR

Rates of sexual activity vary substantially, both by country and by sex (Table 6). Across the three countries, men are much more likely to have had sex (71.8% in Mexico, 75.8% in Belize, and 26.9% in Guatemala) than women (46.9% in Mexico, 41.3% in Belize, and 15.1% in Guatemala). Of the 756 survey respondents who are sexually active, numerous distinctions between the 459 men and 297 women were notable in the realm of behaviors and experience.

The mean age of male respondents who are sexually active in Mexico and Belize is younger (15.4 years in Mexico and 14.8 years in Belize) than females (16.7 years in Mexico and 16.2 years in Belize). By contrast, the mean age of first sex among male and female respondents in Guatemala is very similar (16.7 years for men and 16.9 years for women).

Rates of commercial sex also vary widely by country and sex. Men are significantly more likely to have paid for sex (9.5% in Mexico, 14.1% in Belize, and 21.7% in Guatemala) than women (2.2% in Mexico, 1.7% in Belize, and 0% in Guatemala). Surprisingly, men are also significantly more likely to have been paid to have sex in both Mexico and Belize (11.9% in Mexico and 12.4% in Belize) than women (1.5% in Mexico and 5.3% in Belize). In Guatemala, rates of men and women being paid to have sex were the same (3.7%). These findings concerning commercial sex among men are astonishing – although numerous studies have investigated men’s use of commercial sex workers, existing research has not yet shown such high rates of men being paid to have sex. In the survey, two questions explored commercial sex practices. The first question asked “Have you ever paid to have sex?” and the following question asked “Have you ever been paid to have sex?” In light of the ordering and directness of these questions, the study author does not doubt these findings, despite the surprising nature of these results. Instead, it seems likely that the unexpectedly high rates of male respondents being paid to have sex may be related to high levels of sex tourism in Mexico and Belize. Relative to other countries within the region, sex tourism in southern Mexico and Belize are common due to limited prosecution and short prison terms.¹⁶⁹ Further research is needed to explore the relationship between sex tourism and commercial sex practices among young men and women in Mesoamerica.

f. MULTIVARIATE ANALYSIS

Table 8 demonstrates a few striking similarities across the three countries, and other important differences concerning the factors that most influence young people’s likelihood of ever having had sex. Not surprisingly, young women are less likely than young men to ever have had sex in Mexico, Belize, and Guatemala (odds ratios = 0.33 in Mexico, 0.30 in Belize, and 0.48 in Guatemala). In addition, in all three countries, young people who first learn about sex in school are less likely to ever have had sex than those who first learn about sex from any other source (odds ratios = 0.55 in Mexico, 0.48 in Belize, and 0.56 in Guatemala). Although first learning about sex in school generates similar effects for both men and women in all three countries when broken down by gender, this influence is only statistically significant for Belizean women (odds ratio = 0.42), likely due to the smaller sample size of the gender disaggregated data. In the three countries, there is no significant difference between the mean age of respondents who first learned about sex in school and those who first learned about sex from another source, eliminating the possibility that this association is driven by a counterfactual.

Across the three countries, neither knowledge about contraception nor HIV prevention influence young people’s likelihood of ever having had sex in either the combined analysis or the gender disaggregated analysis. Further, future plans concerning marriage, education, and employment do not influence young people’s likelihood of ever having had sex in either the combined or gender disaggregated analyses. In addition, the possibility of contracting HIV has no influence on young people’s likelihood of ever having had sex in either the combined or gender disaggregated analysis.

In addition to these important similarities across the three countries, numerous significant differences are evident in the factors that influence young people's likelihood of ever having had sex in Mexico, Belize, and Guatemala. For example, relationships with parents influence young people's likelihood of ever having had sex in various ways in the three countries. In the combined analysis, young Belizeans who talk to their parents about sex are significantly less likely to ever have had sex (odds ratio = 0.51), an effect that is driven primarily by young women (odds ratio = 0.43) and is not evident for young men. While the influence of talking with parents about sex is not significant in the combined analysis for either Mexico or Guatemala, young Guatemalan men who talk to their parents about sex are more likely to have had sex than those who do not (odds ratio = 2.18), although this effect is not evident for Guatemalan women. Young Mexican women who report sharing aspects of their personal lives with their parents are much less likely to ever have had sex than those who do not (odds ratio = 0.39), although this effect is not evident for Mexican men or in either of the other countries. Whether or not young people report that their parents support the majority of their decisions and actions does not influence their likelihood of ever having had sex in any of the countries.

Young people's relationships with their peers influence their likelihood of ever having had sex to an even greater extent than their relationships with parents. In Mexico, young people who talk to their friends about sex are significantly more likely to have had sex than their peers (odds ratio = 3.70), an effect driven primarily by Mexican men (odds ratio = 7.24). Similar effects are evident in Belize, where young people who talk to their friends about sex are significantly more likely to have had sex than their peers (odds ratio = 3.95), although this effect is driven primarily by Belizean women (odds ratio = 4.83). By contrast, talking to friends about sex does not influence either Guatemalan men's or women's likelihood of ever having had sex. Talking to their friends about HIV is significantly associated with young Belizeans' likelihood of ever having had sex (odds ratio = 2.33), an effect driven primarily by young Belizean men (odds ratio = 2.83). Similarly, knowing someone who is HIV positive is associated with young Belizeans' likelihood of having had sex (odds ratio = 1.73), although this effect is not evident in the gender disaggregated data. Talking to peers about HIV or knowing someone who is HIV positive does not influence sexual behavior in either Mexico or Guatemala.

Religion affects young people's sexual behavior in the three countries in varying ways. Specifically, young people in both Belize and Guatemala who attend church one or more times per week are less likely to have had sex than those who do not (odds ratios = 0.31 for Belize and 0.55 for Guatemala), although this effect is not evident in Mexico. In the gender disaggregated analysis in Belize, effects are even stronger for men (odds ratio = 0.12) than for women (odds ratio = 0.49), although these effects are not statistically significant for Guatemalan men and women in the gender disaggregated analysis. Despite the important role of church attendance, religious affiliation with Catholicism, Protestantism, or another religion does not affect young people's likelihood of having had sex in any of the three countries.

Ethnicity also plays an important role in influencing young people's sexual behavior in the three countries. Young people who identify as Mestizo in Guatemala are significantly more likely to have had sex (odds ratio = 3.11) than indigenous Mayans; this effect is driven primarily by Guatemalan men (odds ratio = 7.40) and is not statistically significant for Guatemalan women. While identifying as Mestizo is not significantly associated with sexual behavior in either

Mexico or Belize, young women who identify as Creole in Belize are more likely to have had sex than indigenous Mayans (odds ratio = 3.01), although this effect is not evident for Belizean men.

IV. DISCUSSION

a. NATIONAL SIMILARITIES

School-Based Sexuality Education

Table 8 demonstrates by country how the independent variables used in the analysis affect the likelihood of young people ever having had sex. Across the three countries, a few shared characteristics are evident, as well as other key distinctions. This study demonstrates that having first learned about sex in school, rather than in any other setting, increases the likelihood that young people will delay sexual activity. Across the three countries, young people who first learn about sex in school are approximately half as likely to ever have had sex as those who first learn about sex from any other source. Young people who first learn about sex in school are significantly more likely to delay sexual debut than their peers; as a result, they are much less likely to be forced to confront an unwanted pregnancy, sexually transmitted infection, or HIV during adolescence. This finding has important implications for public health initiatives seeking to improve youth sexual and reproductive health outcomes in Mesoamerica and validates the aims of the Ministerial Declaration by providing evidence to policymakers and advocates seeking to expand school-based sexuality education programs.

Knowledge

Despite the importance of school-based sexuality education, this study also demonstrates that young people's knowledge about contraception and HIV prevention does not affect their sexual practices. Consistent with previous studies demonstrating that knowledge does not influence behavior,¹⁷⁰ this study did not find a relationship between survey participants' knowledge about HIV or contraception and their likelihood of ever having had sex. Although this finding supports existing evidence demonstrating that knowledge does not influence behavior,¹⁷¹ it also goes against many long-held theories within the field of public health concerning the links between individual knowledge and action. Specifically, numerous sexual risk-reduction models premise that knowledge is a prerequisite to recognizing the potential negative outcomes associated with risky sexual behaviors and therefore that effectively promoting positive behavior change depends on increased individual knowledge about contraception and HIV prevention.¹⁷² Despite the apparent logic of this public health model, this study shows no association between respondents' knowledge about contraception and HIV prevention and their likelihood of ever having had sex within any of the individual countries, either in the combined or gender disaggregated analyses. Given this evidence that knowledge does not influence sexual behavior, the study finding concerning the significant influence of school-based sexuality education on young people's likelihood of ever having had sex presents a surprising paradox. Additional research is needed to explore why first learning about sex in school contributes to delayed sexual debut, even though young people's knowledge about sex does not influence their behavior. These findings require further research to better understand the relationships between sources information about sex, sexual knowledge, and sexual behavior.

Future Plans

Another similarity across the three countries is that future plans do not influence young people's likelihood of ever having had sex in either the combined or gender disaggregated analyses. Specifically, there is no association between survey respondents' plans to attend university, work, or marry following graduation from high school and their likelihood of ever having had sex. This finding differs from existing research demonstrating that young people who have greater perceived current or future educational or employment opportunities are less likely to engage in sexual activity for fear that an unwanted pregnancy or HIV may limit their capacity to achieve their future aspirations.¹⁷³ In addition, the self-perceived possibility of contracting HIV has no influence on young people's likelihood of ever having had sex in either the combined or gender disaggregated analysis, despite the fact that the majority of survey respondents in all countries reported that they are personally concerned about getting HIV.

b. NATIONAL DIFFERENCES

Parental Relationships

In addition to these important similarities across the three countries, several substantive differences are evident in the factors that are associated with young people's likelihood of ever having had sex in Mexico, Belize, and Guatemala. Relationships with parents influence young people's likelihood of ever having had sex in contradictory ways in the three countries. Young men in Guatemala who talk to their parents about sex are more than twice as likely to have had sex as those who do not, even though this effect is not evident for women. On the contrary, young women in Belize who talk to their parents about sex are less than half as likely to ever have had sex, although this effect is not evident for young men. In Mexico, talking to parents about sex is not associated with either young men's or women's likelihood of ever having had sex. Despite the contradictory nature of these findings, these results are not surprising given the very differing social norms concerning sexuality in Guatemala and Belize and the resulting pressures and incentives for young people. Specifically, in the area of sexual attitudes and gender norms, Guatemala is the most conservative and Belize is the least conservative. On a conservative values scale of 1-9, the mean score for Guatemala was 8.35, significantly higher than both Mexico at 6.04 and Belize at 5.75 (Table 7). These extremely conservative gender norms in Guatemala have differing consequences for young men and women.

While families and communities may turn a blind eye to sexual activity among young men, young women who are sexually-active risk being labeled as promiscuous for failing to conform to social standards of purity and chastity.¹⁷⁴ Given these extreme pressures for young women to maintain their virginity, it is not at all surprising that young women do not talk with their parents about sex, especially those who choose to become sexually active prior to marriage. Further, because beliefs about sexuality in Guatemala are so conservative and because having sexual intercourse before marriage is such a major social taboo, young men who talk with their parents about sex most likely do so only once they have already become sexually active. In addition, many of these young men who talk with their parents about sex likely do so because their fathers have encouraged them to engage in commercial sex. As in numerous Latin American countries, anecdotal evidence in Guatemala indicates that fathers, uncles, and older male relatives often bring adolescent boys to sex workers so that they can 'become men,' a long-standing cultural tradition that is borne out by survey finding that more than one-fifth of male Guatemalan

respondents have paid for sex, with even higher percentages of Mayan men paying for sex than ladino men.

Belize's social context for youth sexuality is drastically different from that of Guatemala. In contrast to Guatemala's extreme social conservatism, more liberal attitudes regarding sexuality are much more prevalent in Belize. Therefore, the influence of talking with parents about sex may work in the opposite direction in Belize than it does in Guatemala. Rather than only talking with their parents about sex once they have already become sexually active, young Belizean women may be more likely to perceive their parents as a viable source of information concerning sexuality and therefore may receive parental support that encourages them to delay sexual debut. This possibility is supported by survey findings demonstrating that 23% of young Belizean women first learned about sex from their mother, in contrast to Guatemala where only 11% of young women first learned about sex from their mother. Further, because the mean age of first sex in Belize is by far the youngest of the three countries (15.3 years in Belize, in contrast to 15.9 in Mexico and 16.8 in Guatemala), Belizean parents are much more likely to recognize and accept the probability that their adolescent children will become sexually active prior to marriage, in contrast to the majority of parents in Guatemala who view pre-marital sexual activity as a very slim possibility to be avoided at all costs. Given this greater acceptance of youth sexual activity and the much greater prevalence of HIV/AIDS, Belizean parents may also be more willing to talk with their children about sex as a mechanism to encourage them to protect themselves from unwanted pregnancy and HIV/AIDS.

Although talking to parents about sex is not associated with youth sexual activity in Mexico, young Mexican women who report sharing personal aspects of their private lives with their parents are much less likely to ever have had sex than those who do not. Given that attitudes regarding sexuality in both Mexico and Belize are significantly less conservative than they are in Guatemala, this relationship is likely similar to the above described phenomenon of young women who talk with their parents about sex in Belize. Specifically, young Mexican women who have close, supportive relationships with their parents are more likely than those who do not to feel comfortable and safe in talking with their parents about sex, rather than feeling intimidated or assuming they will be punished or stigmatized. Again, this possibility is supported by survey findings demonstrating that 26% of young Mexican women first learned about sex from their mother, in contrast to Guatemala where only 11% of young women first learned about sex from their mother. These findings concerning the positive influence of parental relationships in Belize and Mexico build upon existing research demonstrating the critical role of parents in reducing youth sexual-risk taking. Additional research is needed to explore why these effects are not consistent for male study participants in Guatemala, as well as to better understand how parents can effectively encourage and support delayed sexual debut among their adolescent children across differing cultural settings.¹⁷⁵

Peer Relationships

Young people's communication with their peers influences their likelihood of ever having had sex to an even greater extent than their relationships and communication with parents in both Mexico and Belize, although this effect is not evident in Guatemala. And while the vast majority of young people in all three countries talk to their friends about sex, the effects on sexual activity differ for men and women. In both Mexico and Belize, young people who talk with their friends

about sex are almost four times as likely as those who do not to have had sex. Using gender disaggregated analyses, the survey findings demonstrate even stronger effects – young Mexican men who talk with their friends about sex are more than seven times as likely to ever have had sex as those who do not and young Belizean women who talk with their friends about sex are almost five times as likely to have had sex as those who do not, even though these effects are not statistically significant for the Mexican women or Belizean men.

The findings concerning Mexico are likely the result of young men experiencing peer pressure to have sex – the more that young men talk to their friends about sex, the more they may feel the need to conform to perceived social norms by also engaging in sexual activity. These results build on existing research highlighting how Latin norms of masculinity require young Mexican men to conform to ‘macho’ stereotypes by having sex early, often, and with multiple partners.¹⁷⁶ The findings concerning the influence of peer communication in Belize are more difficult to explain and may well work in the opposite direction. Rather than feeling pressure to have sex as a result of talking with their friends about sex, Belizean women may begin talking with their friends about sex after they have already become sexually active. Because youth sexuality is both more common and more socially accepted in Belize than it is in Guatemala, young Belizean women may feel more comfortable discussing their sexuality with their peers, seeking out information concerning contraception, HIV/AIDS, and other topics about which they need information because they have already become sexually active. Additional research is needed to better understand the relationship between peer communication about sex and young women’s sexual decision-making.

In contrast to both Mexico and Belize, peer communication does not influence young people’s likelihood of ever having had sex in Guatemala. Again, Guatemala is so conservative concerning sexual norms and it is not surprising that talking with peers about sex is not associated with increased sexual activity. Specifically, because pre-marital sex is such a major cultural taboo, the social risk of stigmatization likely serves as a major disincentive for young people who are sexually active to share this information with their peers. Because young people, especially young women, who are sexually active in Guatemala are so often labeled and ostracized, they are much more likely to keep this information to themselves rather than telling even their closest friends. Although this phenomenon likely influences young women to a much greater extent than young men, the social pressure for young men to tout their sexual conquests is nonetheless most likely lower in Guatemala than the other two countries. In addition, Guatemalan men may have more incentive to show discretion about their own sexual behavior to protect the reputation of their girlfriends.

HIV/AIDS

Communication with peers about HIV is associated with young Belizeans’ sexual activity in differing ways. Young Belizeans who talk with their friends about HIV are more than twice as likely to have had sex as their peers. In the gender disaggregated analysis, young Belizean men who talk with their friends about HIV are almost three times as likely to have had sex as those who do not. Although young women in Belize are not statistically more likely to have had sex if they talk with their friends about HIV, the effects are of similar magnitude. On the contrary, there is no association between talking with peers about HIV and sexual activity among either young men or young women in Mexico or Guatemala.

Analysis of the influence of HIV on young people's sexual activity in Mesoamerica requires greater understanding of the epidemiological and social context for the disease in the three countries. Belize's national HIV prevalence rate is 2.3%, among the highest in the Western hemisphere and drastically higher than Guatemala's prevalence of 0.8% or Mexico's prevalence of 0.3%.^{177 178,179} HIV disproportionately affects Belizean youth and this age group accounts for 40% of all new infections, making it the demographic group most vulnerable to the disease.¹⁸⁰ As a result of this national trend, Belize has implemented numerous prevention campaigns and HIV/AIDS has become an issue that is discussed widely in the media and the public sphere.

Given the prevalence of the disease and the salience of HIV/AIDS in Belize's public discourse, it is not surprising that the vast majority of young Belizeans talk with their friends about the disease. However, it seems unlikely that talking to friends about HIV generates peer pressure that increases the likelihood of young Belizeans having had sex. On the contrary, it is more probable that male survey respondents who are already sexually active are more likely to talk to their friends about HIV. This relationship is likely similar to that of peer communication about sex for Belizean women – rather than feeling pressure to have sex as a result of talking with their friends about HIV, Belizean men are more likely to begin talking with their friends about HIV after they have already become sexually active. Because HIV is both a widespread problem in Belize and because there have been numerous public health campaigns to increase knowledge about the epidemic, young men who are sexually active most likely begin talking to their friends about HIV in order to obtain additional information about a range of issues, including whether their friends use condoms, where they can get access to condoms, who might already be HIV positive, and other topics.

Beyond communication about HIV, young Belizeans who know someone who is HIV positive are almost twice as likely to have had sex, although this effect is not evident in the gender disaggregated data, likely due to the smaller sample size. Again, given Belize's high prevalence of the disease, as well as the greater awareness of the epidemic among the general public, it is not surprising that knowing someone with HIV/AIDS is associated with sexual activity in Belize but not in Mexico or Guatemala. These findings are borne out by the number of HIV-positive people that young Belizeans know – on average, young Belizeans know four times more people who are HIV positive than young people in either of the other countries. In addition, 34% of men and 26% of women in Belize have been tested for HIV, more than double the rates of testing in either of the other countries. Nonetheless, this finding differs somewhat from an existing study in Kenya demonstrating that knowing someone who has died of AIDS is associated with lower likelihood of young people having had sex.¹⁸¹ Beyond the qualitative difference between knowing someone who is living with HIV and knowing someone who has died of AIDS, another possible explanation for this difference may be the widespread prevalence of anti-retroviral medicines to treat HIV/AIDS in Belize that are not widely available in Kenya. Specifically, although HIV/AIDS is a major public health problem in Belize and the majority of young people surveyed reported that they are concerned about it, they may not view HIV as disastrous of an outcome as their Kenyan counterparts, in part due to the prevalence of life-prolonging treatment options. Further research is needed to explore how differences between knowing someone who is HIV-positive and knowing someone who has died of AIDS may have differing effects on youth sexual activity.

Religion

This study demonstrates that religion – which may serve as a proxy for both religious faith as well as connectedness to a broader community – influences young people’s sexual practices in the three countries in varying ways. Young people who attend church one or more times per week in Belize and Guatemala are less likely to ever have had sex than those who do not, although this effect is not evident in Mexico. These effects are even stronger among young Belizean men than women, although they are not evident in the gender disaggregated data for Guatemala. These findings for Belize and Guatemala are not surprising, as church attendance is associated with more conservative views about sexuality and the majority of churches in both countries broadly oppose premarital sex.¹⁸² However, despite the important role of church attendance overall, religious affiliation with Catholicism, Protestantism, or another religion does not affect young people’s likelihood of having had sex in any of the three countries.

Given the current social context for religion in Mexico, it is not surprising that church attendance does not influence youth sexual activity among Mexican respondents as it does for Belizeans and Guatemalans. This difference is likely due to the unique and declining influence of religion and the church within Mexico. Unlike both Guatemala and Belize in which the Church continues to strongly influence broader social norms and individual practices, the Church in Mexico has begun to play more of a symbolic role that does not mandate morality to the same extent as it has in the past. This shift is evident both in the growing number of Mexicans leaving the Church – more than 1,000 per day over the past decade – and in the Church’s shrinking political influence concerning key social issues such as abortion and gay marriage.¹⁸³ While academics in part attribute the Church’s decline to its handling of sexual abuse scandals and its antiquated position on contraception and sex education, they also recognize that Mexican society’s increasing secularism has strongly contributed to the Church’s declining authority. And although the Catholic Church has lost members throughout Belize and Guatemala due to the rise of evangelical Protestantism, the evangelical movement has failed to gain significant influence in Mexico.

These social trends are borne out in the survey sample data. Mexico has a higher number of survey respondents who identify as Catholic and a lower proportion of respondents who identify as Protestant than either Belize or Guatemala – 70.5% of Mexican respondents identify as Catholic, 17.0% identify as Protestant, and 7.2% identify as Other. At the same time, only 33.0% of Mexican respondents attend church once or more than once per week, in contrast to 41.7% of Belizeans and 66.0% of Guatemalans. In light of this survey data and the waning influence of religion in Mexico, it is not surprising that church attendance does not influence young adults’ likelihood of ever having had sex in Mexico, as it does in the two other countries.

Ethnicity

Ethnicity also plays an important role in influencing young people’s sexual behavior in Guatemala and Belize, but not in Mexico. Young people who identify as Mestizo (or ladino) in Guatemala are significantly more likely to have had sex than indigenous Mayans; Mestizo men are more than seven times as likely to have had sex as Mayan men, although this effect is not statistically significant for women. This finding is not surprising, given the bivariate analysis demonstrating that Mayans in Guatemala and in the other two countries have significantly more

conservative values concerning sexuality than all other ethnic groups. Gender differences in Guatemala concerning the influence of ethnicity on sexual behavior are likely attributable to the same social pressures that so harshly stigmatize young women who are sexually active. Whereas premarital sex is wholly unacceptable for young Guatemalan women regardless of their ethnicity, it is more tolerated for Mestizo men than it is for indigenous Mayan men. Beyond differences in sexual behavior among ethnic groups in Guatemala, Belizean Creole female survey respondents are more than three times as likely as Belizean Mayan females to ever have had sex. This finding is not surprising, as bivariate analysis demonstrates that Belizean Mayans, similar to their Guatemalan counterparts, have more conservative beliefs and attitudes concerning sexuality than other ethnic groups within Belize.

In addition to the results demonstrated by logistic regression analysis, these wider effects are clearly evident in the sample's descriptive statistics for the three countries – only 29.5% of Mayans have ever had sex, in contrast to 54.1% of Mestizos, 64.6% of Creoles, and 70.0% of Garifuna. These ethnic differences in youth sexual behavior in the three countries are likely attributable to a broad range of social and economic factors, including the various groups' differing cultural values and the ways in which their distinct historical heritages have shaped their current socio-economic position within each country. Further, the very differing expectations for young people in each group – set by their families, teachers, religious leaders, and broader communities – likely influence their own decision-making processes regarding sexual behavior. These social expectations are in turn shaped and reinforced by the drastically disparate opportunities available to youth from the different ethnic groups – for education, career advancement, and upward socio-economic mobility – and likely play an important role in influencing their decisions about sexuality. Due to the complexity of these interlocking social forces, additional research is needed to further explore how ethnicity shapes young people's understandings and practices regarding sexuality.

V. CONCLUSIONS AND RECOMMENDATIONS

These study findings demonstrate that four principal factors influence youth sexual behavior in Mesoamerica – school-based sexuality education, relationships and communication with parents and peers, church attendance, and ethnicity. This research validates the efforts of the Mexico City Ministerial Declaration by highlighting the need to provide Mesoamerican youth with comprehensive school-based sexuality education and services in order to reduce rates of unwanted pregnancy, adolescent childbearing, and HIV/AIDS.

Although the study findings support arguments by national and regional advocates that Ministries of Health and Education must prioritize effective implementation of the Ministerial Declaration, the governments of Mexico, Belize, and Guatemala have made vastly differing degrees of progress in fulfilling their commitments. While Mexico has achieved 38.5% of its targets and Guatemala has fulfilled 58%, Belize has lagged behind the rest of the region in implementation of the agreements set forth in the Ministerial Declaration.¹⁸⁴

While expanding ongoing work of the Ministerial Declaration is crucial to fulfilling targets in all three countries, broadening the existing scope of Ministerial Declaration efforts is necessary to not only reduce rates of adolescent childbearing and STIs/HIV in Mesoamerica but also

transform the broader social norms that heighten youth sexual risk-taking. Beyond working more effectively to increase youth access to comprehensive sexual and reproductive health services and sexuality education, this study demonstrates the importance of integrating parents into the purview of the Ministerial Declaration. Providing parents with training about how to establish and maintain positive, supportive relationships with their adolescent children, as well as talk to their children directly and openly about the importance of safer sex, could vastly expand the positive impacts of school-based sexuality education programs. Given the crucial role played by parents in influencing their children's decisions concerning sexual initiation, failure to include parents in national sex education efforts is a wasted opportunity to improve sexual and reproductive health outcomes in Mesoamerica.

This study also demonstrates the pivotal influence of peers on young people's sexual practices, highlighting the need to promote the social acceptability of delayed sexual activity among youth throughout Mesoamerica. These findings echo evaluations from peer education models illustrating the positive results of involving young people in efforts to reduce HIV transmission.¹⁸⁵ Because young people serve as role models for one another and strongly influence sexual norms for their peers, directly involving young people in the design and implementation of Ministerial Declaration initiatives could expand their effectiveness. For example, the Ministries of Health and Education could engage young people in the creation of popular marketing and social media campaigns that encourage delayed sexual debut. Incorporating lessons learned from peer education approaches and recognizing young people's inherent knowledge of their own needs for information and services may enhance the Ministerial Declaration's success throughout Mesoamerica.

Given the inter-connected forces that influence youth sexuality within Mesoamerica, the Ministerial Declaration should adopt a multi-faceted approach that not only provides young people with access to comprehensive sexuality education and services, but also goes beyond school-based settings by actively engaging parents and young people as allies in youth sexual risk-reduction efforts. Further, in light of the substantial differences that characterize both the socio-economic realities and the sexual practices of youth from various ethnic groups in Mesoamerica, effective implementation of the Ministerial Declaration will require that policymakers and practitioners develop culturally-competent sexuality education curricula and services that respond to the very differing contexts and needs of these different ethnicities. Although the Ministerial Declaration has the potential to improve youth sexual and reproductive health outcomes in the three countries, these efforts will only achieve maximum impact by responding to the divergent cultural norms and socio-economic realities of Mayan, Mestizo, Creole, and Garifuna populations. Therefore, the Ministries of Health and Education of the three countries must adapt their standardized sexuality education curricula and service delivery models to respond to the varying needs of their diverse ethnic communities.

TABLE 1: Percentage distribution of respondents aged 18–24 in a sample of young adults in Mexico, Belize, and Guatemala by selected characteristics, by gender

	MEN				WOMEN			
	MX		BEL		MX		BEL	
	mean	sd	mean	sd	Mean	sd	mean	sd
Sex	239		249	337	303		293	265
Age (Average, St Dev)	18.80	1.23	18.76	1.16	18.76	1.10	18.66	1.12
Have ever had sex	71.8%		75.8%	26.9%	46.9%		41.3%	15.1%
Ethnicity								
Indigenous Ethnicity	17.7%		18.7%	91.2%	22.5%		18.1%	95.4%
Mestizo Ethnicity	74.2%		44.3%	8.2%	69.9%		42.0%	4.6%
Creole Ethnicity	0.0%		22.4%	0.0%	0.0%		25.6%	0.0%
Garifuna Ethnicity	0.0%		6.1%	0.0%	0.0%		2.7%	0.0%
Other Ethnicity	8.1%		8.5%	0.6%	7.6%		11.6%	0.0%
Religion								
Catholic	73.8%		44.9%	56.0%	75.0%		52.2%	53.7%
Protestant	16.4%		38.0%	42.3%	19.1%		36.9%	46.3%
Other Religion	9.8%		17.1%	1.6%	5.9%		10.9%	0.0%
Church Attendance								
Attend Church more than once per week	12.3%		13.1%	33.7%	17.2%		17.6%	44.9%
Attend Church once per week	17.8%		20.1%	35.3%	22.5%		32.5%	32.2%
Attend Church twice per month	4.1%		16.4%	7.3%	8.1%		15.6%	8.6%
Attend Church once per month	20.1%		16.4%	11.6%	18.6%		18.0%	9.4%
Attend Church once per year	28.8%		20.5%	3.6%	22.8%		11.4%	0.8%
Never attend Church	16.9%		13.5%	8.6%	10.9%		4.8%	4.1%
Work and Attend School	38.4%		54.1%	38.6%	19.5%		39.2%	25.7%
N	239		249	337	303		293	265

TABLE 4: Percentage distribution of responses to questions on relationships and communication with parents and peers, and experience with HIV/AIDS, by gender

	MEN			WOMEN		
	MX		GT	MX		GT
	mean	sd		mean	sd	
Relationship With Parents						
Think that parents support the majority of their decisions	88.2%		88.3%	86.7%	65.3%	85.5%
Share personal aspects of their private life with their parents	55.5%		50.0%	59.1%	44.0%	54.3%
Talk to parents about sex	46.0%		36.9%	61.4%	48.5%	48.2%
Relationship With Peers						
Talk with their friends about sex	83.5%		86.2%	81.8%	62.3%	71.4%
Talk with friends about HIV/AIDS	69.8%		82.4%	75.9%	71.9%	73.7%
Experience With HIV/AIDS						
Possibility of getting HIV/AIDS affects their sexual practices	28.7%		32.1%	26.4%	67.2%	19.1%
Is personally concerned about getting HIV/AIDS	94.1%		95.7%	94.6%	63.6%	95.0%
Know someone who is HIV positive	19.7%		11.0%	18.2%	46.1%	12.8%
Number of people he/she knows who has HIV/AIDS	0.27	0.81	0.29	0.27	0.71	0.34
Have been tested for HIV/AIDS	16.5%		6.6%	10.8%	26.4%	1.8%
Number of times he/she has been tested for HIV/AIDS	0.26	0.82	0.17	0.14	0.43	0.09
N	239		337	303	293	265

TABLE 5: Percentage distribution of responses to questions on future plans for work, education, and marriage, by gender

	MEN						WOMEN					
	MX		BEL		GT		MX		BEL		GT	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Work and Educational Plans												
After completing college, plans to attend university	81.7%		57.9%		77.0%		79.7%		67.8%		76.0%	
After completing college, plans to work	19.1%		38.4%		41.5%		19.9%		30.8%		51.2%	
After completing college, plans to do other	4.7%		4.1%		11.5%		4.8%		3.1%		11.6%	
Marriage Plans												
Plans to get married in the next five years	30.7%		26.0%		37.8%		38.1%		38.5%		40.8%	
Plans to get married in the next ten years	44.6%		37.4%		42.6%		42.2%		41.2%		36.9%	
Plans to get married in more than ten years	16.9%		25.6%		17.4%		14.6%		13.7%		17.3%	
Never plans to get married	7.8%		11.0%		2.1%		5.1%		6.5%		5.1%	
N	239		249		338		303		293		265	

TABLE 6: Percentage distribution of sexually experienced respondents who reported selected sexual behaviors and experiences, by gender

	MEN				WOMEN							
	MX		BEL		GT		MX		BEL		GT	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Have ever had sex	71.8%		75.8%		26.9%		46.9%		41.3%		15.1%	
Age - Average (Standard Deviation)	18.92	1.33	18.88	1.23	19.17	1.38	18.86	1.29	18.96	1.32	19.72	1.98
Age at first sex - Avg (St Dev)	15.35	1.84	14.80	2.18	16.65	2.21	16.72	1.57	16.23	1.82	16.94	2.48
Types of Sexual Partners												
Has had sex with only men	1.2%		2.1%		1.2%		97.0%		88.8%		90.6%	
Has had sex with both men and women	6.6%		6.4%		1.2%		1.5%		6.0%		9.4%	
Has had sex with only women	92.2%		91.4%		97.7%		1.5%		5.2%		0.0%	
Types of Sexual Activity												
Have had vaginal sex	95.7%		95.7%		93.0%		97.7%		94.0%		91.4%	
Have had anal sex	28.7%		23.7%		14.0%		15.8%		22.4%		2.9%	
Have had oral sex	62.8%		44.1%		16.3%		39.1%		50.4%		17.1%	
Number of Sexual Partners												
Number of sexual partners in lifetime	4.47	5.22	6.48	7.83	1.98	1.65	2.36	1.90	2.80	2.78	1.27	0.62
Number of partners last year	1.84	1.76	2.46	2.76	1.76	3.34	1.21	0.95	1.36	1.40	0.59	0.50
Number of partners last month	1.14	1.37	1.06	1.10	0.58	1.28	0.94	0.63	0.86	0.63	0.59	0.50
Commercial Sex												
Has paid to have sex	9.5%		14.1%		21.7%		2.2%		1.7%		0.0%	
Has been paid to have sex	11.9%		12.4%		3.7%		1.5%		5.3%		3.7%	
N	172		190		97		139		120		38	

TABLE 7: Percentage distribution of responses to questions on premarital sex, same-sex behavior, and abortion, by gender

	MEN				WOMEN			
	MX		BEL		MX		BEL	
	mean	sd	Mean	sd	mean	sd	mean	sd
Opinions About Same-Sex Behavior								
Believe that when two people of the same sex have intercourse, it is always wrong	56.4%		62.3%	87.7%	46.0%		52.1%	89.4%
Believe that when two people of the same sex have intercourse, it is sometimes wrong	23.1%		23.1%	6.9%	30.9%		37.0%	7.8%
Believe that when two people of the same sex have intercourse, it is never wrong	20.4%		14.6%	5.4%	23.2%		11.0%	2.7%
Opinions About Pre-Marital Sex								
Believe that when a woman has sex before marriage, it is always wrong	23.5%		19.8%	78.6%	28.4%		22.3%	88.2%
Believe that when a woman has sex before marriage, it is sometimes wrong	46.9%		53.2%	18.4%	51.6%		54.5%	9.0%
Believe that when a woman has sex before marriage, it is never wrong	29.6%		27.0%	3.0%	20.1%		23.3%	2.7%
Believe that when a man has sex before marriage, it is always wrong	18.6%		15.3%	75.1%	27.7%		21.2%	87.1%
Believe that when a man has sex before marriage, it is sometimes wrong	42.5%		43.5%	21.6%	49.8%		46.6%	10.1%
Believe that when a man has sex before marriage, it is never wrong	38.9%		41.1%	3.3%	22.5%		32.2%	2.8%
Opinions About Abortion								
Believe that when a woman has an abortion, it is always wrong	78.2%		58.9%	94.9%	82.4%		56.2%	93.3%
Believe that when a woman has an abortion, it is sometimes wrong	15.8%		35.1%	3.6%	15.5%		40.1%	6.3%
Believe that when a woman has an abortion, it is never wrong	6.0%		6.0%	1.5%	2.0%		3.8%	0.4%
N	239		249	337	303		293	265

Table 8: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Select Characteristics and Sexual Experience, Aggregate and by Sex

	AGGREGATE			MALE			FEMALE		
	MX	BEL	GT	MX	BEL	GT	MX	BEL	GT
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Age	1.483**	1.473**	1.748***	1.571	1.937*	1.661***	1.603*	1.31	2.040**
Female	0.222	0.181	0.2	0.373	0.519	0.247	0.361	0.194	0.458
	0.334***	0.295***	0.484*						
	0.093	0.078	0.156						
Talk to parents about sex	0.942	0.511*	1.371	1.72	0.59	2.181*	0.818	0.430*	0.452
	0.292	0.138	0.42	0.893	0.305	0.832	0.363	0.144	0.301
Share personal life with parents	0.617	0.962	0.708	1.102	1.221	0.737	0.388*	1.021	0.704
	0.183	0.267	0.217	0.552	0.634	0.281	0.154	0.367	0.473
Parents support decisions and actions	1.174	1.132	0.468	2.107	1.142	0.57	0.617	1.088	0.249
	0.474	0.309	0.186	1.322	0.588	0.322	0.361	0.38	0.186
Talk to friends about sex	3.693***	3.946***	1.342	7.241**	2.729	1.613	1.961	4.833***	2.075
	1.422	1.169	0.589	4.835	1.714	1.024	0.975	1.825	1.538
Talk to friends about HIV	1.2	2.332**	1.107	1.088	2.830*	0.996	0.999	2.073	1.017
	0.384	0.718	0.409	0.568	1.498	0.481	0.437	0.844	0.758
First learn about sex in school	0.554*	0.482**	0.556*	0.661	0.586	0.504	0.586	0.424*	0.796
	0.146	0.128	0.156	0.286	0.295	0.176	0.218	0.145	0.502
Knowledge about HIV	0.944	1.263	1.208	0.675	1.335	1.367	1.137	1.164	1.294
	0.206	0.191	0.181	0.264	0.36	0.284	0.331	0.24	0.336
Knowledge about contraception	1.101	0.898	0.993	1.251	0.833	0.982	1.138	0.955	1.12
	0.138	0.101	0.111	0.267	0.166	0.148	0.201	0.144	0.249
Currently work and study	0.896	2.221**	1.534	1.006	2.34	1.534	0.608	1.976*	1.067
	0.277	0.572	0.444	0.477	1.126	0.542	0.284	0.666	0.708
Plan to marry in 5-10 years	0.988	0.833	1.141	0.83	0.565	2.489	1.387	1.047	0.304
	0.312	0.237	0.432	0.429	0.283	1.282	0.615	0.414	0.228

* p = < .05, ** p = < .01, *** p = < .001

Table 8A: Odds Ratios and Standard Errors from Logistic Regression Analysis to Identify Associations Between Select Characteristics and Sexual Experience, Aggregate and by Sex

	AGGREGATE			MALE			FEMALE		
	MX	BEL	GT	MX	BEL	GT	MX	BEL	GT
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Plan to attend university after graduation	0.571	0.633	1.177	0.488	0.866	1.496	0.564	0.382	1.408
	0.297	0.443	0.462	0.456	1.12	0.81	0.398	0.33	1.006
Plan to work after graduation	1.168	0.77	1.199	0.708	0.677	0.798	1.486	0.542	3.711
	0.641	0.545	0.393	0.623	0.902	0.348	1.183	0.47	2.731
Know someone who is HIV positive	1.489	1.726*	1.031	1.922	2.254	1.228	1.495	1.599	1.995
	0.492	0.439	0.449	1.193	1.092	0.671	0.668	0.529	1.86
HIV affects sexual practices	1.258	0.797	0.782	1.786	1.593	0.688	1.084	0.526	1.712
	0.36	0.224	0.245	0.912	0.797	0.257	0.425	0.2	1.236
Attend church frequently	0.873	0.305***	0.548*	0.787	0.117***	0.522	0.817	0.494*	0.369
	0.245	0.079	0.161	0.387	0.057	0.195	0.312	0.165	0.229
Protestant Religion	0.304	0.828	0.193	0.396	0.484	0.198	0.111	1.122	1.158
	0.215	0.352	0.251	0.432	0.338	0.266	0.136	0.672	0.699
Other Religion	0.36	0.801	0.282	0.511	0.724	0.451	0.12	0.93	
	0.221	0.331	0.363	0.474	0.513	0.599	0.134	0.534	
Mestizo Ethnicity	0.775	0.819	3.114*	0.655	0.62	7.402***	0.937	1.216	0.047
	0.246	0.278	1.513	0.386	0.375	4.408	0.394	0.57	0.095
Creole Ethnicity		1.55			1.304			3.013*	
		0.755			0.936			1.555	
Garifuna Ethnicity		1.845			0.305			1.715	
		0.72			0.3			1.67	
Other Ethnicity	1.449	0.695		0.528	2.961		2.501	1.864	
	0.83	0.449		0.579	3.85		1.768	1.132	
N	342	481	352	151	226	218	191	255	134

* p = < .05, ** p = < .01, *** p = < .001

CHAPTER 6: CONCLUSION

This research provides new insight into the principal factors that influence youth sexuality in Mexico, Belize, and Guatemala and has important implications for policy initiatives designed to improve youth sexual and reproductive health in the region. These study findings demonstrate that four principal factors influence youth sexual behavior across the three Mesoamerican countries – school-based sexuality education, relationships and communication with parents and peers, church attendance, and ethnicity. This research validates the efforts of the Mexico City Ministerial Declaration by highlighting the need to provide Mesoamerican youth with comprehensive school-based sexuality education and services in order to reduce rates of unwanted pregnancy, adolescent childbearing, and HIV/AIDS.

These findings also highlight additional factors necessary to ensure effective implementation of the Mexico City Ministerial Declaration by illuminating current gaps in existing efforts to improve youth sexual and reproductive health outcomes. Specifically, this study demonstrates that more directly involving parents and young people in comprehensive sexuality education efforts has the potential to increase the success of the Ministerial Declaration. Given the interconnected forces that influence youth sexuality within Mesoamerica, the Ministerial Declaration should adopt a multi-faceted approach that not only provides young people with access to comprehensive sexuality education and services, but also goes beyond school-based settings by actively engaging parents and young people as partners and allies in youth sexual risk-reduction efforts. Strengthening the capacity of parents to establish and maintain positive, supportive relationships with their adolescent children, as well as talk to their children directly and openly about the importance of safer sex, could vastly expand the positive impacts of school-based sexuality education programs. In addition, given the pivotal influence of peer relationships and communication on young people's sexual practices, engaging young people in strategies to reduce youth sexual risk-taking may enhance the success of policy and programmatic initiatives designed to improve youth sexual and reproductive health outcomes. Further, this study demonstrates that effective implementation of the Ministerial Declaration will require that policymakers and practitioners develop culturally-competent sexuality education curricula and services that respond to the very different socio-economic realities and the sexual practices of youth in Mexico, Belize, and Guatemala.

Since the Ministerial Declaration was launched in 2008, relatively little time has passed since Mexico, Belize, and Guatemala adopted the new policy platform and initiated their own efforts to fulfill targets to expand access to comprehensive sexuality education and services for youth. Therefore, longitudinal studies will be critical to understanding the influence of the Ministerial Declaration over time, both on youth sexual knowledge, attitudes, and behaviors in each of the three countries, and on broader sexual and reproductive health outcomes regarding unintended pregnancy, adolescent childbirth, and HIV/AIDS in the region. In addition, because the governments of Mexico, Belize, and Guatemala have made vastly differing degrees of progress in fulfilling their commitments, policy analysis of the various political, economic, and legal factors that influence governments' commitment and effectiveness in implementing the

Ministerial Declaration will provide useful information to better understand the principal factors that either contribute to or detract from the success of social policy initiatives of this magnitude.

Beyond the immediate implications for implementation of the Ministerial Declaration, this research also sheds light on the interconnected social and cultural forces that shape youth sexuality. This research reinforces some of what we already know about youth sexuality, in addition to raising new questions concerning the factors that influence youth sexual behavior. On the one hand, we already know that sexual norms for young people are constantly changing, exposing them to both new risks and realities concerning the consequences of their sexual practices. We also know that young people's sexual decision-making does not take place in a vacuum but instead occurs within the context of cultural and economic realities, family expectations, and community social norms. On the other hand, we still know very little about how the broader social forces of modernization and globalization shape young people's sexual knowledge, attitudes, and practices. Therefore, additional research is needed to understand how changing social and structural realities – including migration, unemployment, violence, and global media – have increasingly important implications for sexual risk-taking among young adults, both in Mesoamerica and around the world.

Additional research into a few key areas – migration, media, and commercial sex work – is needed to both expand upon the findings from this study and to further enrich understanding within the broader field of youth sexuality. Bridging the social and economic aspects of youth sexual risk-taking, additional research is needed to further explore the influences of migration upon youth sexuality, both for those who migrate and for those who stay at home. Young people who migrate have greater opportunity and incentive to engage in sexual risk-taking – away from the watchful eyes of their families, young people can explore their sexuality without facing many of the social repercussions in their communities. This relative anonymity also provides young people with a unique opportunity to engage in socially sanctioned sexual activity, including same-sex behavior and commercial sex. Especially in communities characterized by high levels of homophobia, migration affords gay and bi-sexual young people with one of the only avenues available to more freely explore their sexuality. In addition to consensual sexual risk-taking, young people who migrate are often more vulnerable to sexual coercion, assault, and exploitation, all of which have important consequences for unwanted pregnancy and HIV/AIDS transmission.

Migration also indirectly influences youth sexual risk-taking. Migrants who return home bring with them new experiences, knowledge, and beliefs; they thereby provide their home communities with greater access to outside practices, values, and norms that contribute to gradual shifts in cultural understandings over time. Further, migrants are much more likely to be exposed to HIV and other STIs, and often infect their partners and communities with these diseases upon returning home.¹⁸⁶ Migrants also send money back to their communities in the form of remittances, which are often a primary source of income for their families. In addition, migrants who work for several years in their host country often return to their families with greater financial assets than those who stayed behind, thereby shifting the economic resources circulating within a community and contributing to higher levels of income inequality within their home countries. High levels of migration also break down social controls and community level cohesion – migrants are not subject to community surveillance and therefore have the

opportunity to engage in a broad range of practices that would be unacceptable at home. Upon returning to their community, migrants' new practices and beliefs gradually contribute to broader shifts in cultural norms, expectations, and practices. Additional research is needed to understand the ways in which all of these factors may influence youth sexuality in Mexico, Belize, and Guatemala, all countries characterized by high levels of migration.

In addition to the need to better understand the effects of migration upon youth sexuality, further inquiry is needed into the influence of media and global youth culture on young people's sexual practices. Existing research demonstrates that young people's willingness to engage in sexual risk-taking is both grounded in local cultural understandings and expectations, and subject to increasingly globalized cultural and media influences.¹⁸⁷ Through this global youth culture, international media, films, and the internet expose young people to new norms and expectations concerning their own realities, opportunities, and desires. While in previous generations, norms and expectations for young people were created and enacted primarily within their own and neighboring communities, globalized forms of communication bring young people new cultural understandings, ideas, and opportunities. As access to the internet expands, young people are no longer merely reacting to global media; instead, they can actively seek out information, make connections with young people in other countries and cultures, and apply these new resources in their own previously isolated communities. Increasing penetration of global media drastically expands young people's access to information, providing young adults with new ideas and thereby gradually bringing about cultural changes within their communities in numerous areas, including sexuality.

Beyond the ways in which global media and youth culture affect young people's sexual practices broadly, they also have differing implications for young men and women – the majority of media images and narratives promote and sustain gender-based stereotypes concerning expected behaviors for young men as virile, sexually promiscuous, and dominating, and for young women as submissive sexual objects. Nonetheless, more progressive media and websites also provide young people with a window into the possible existence of more equitable relationships and opportunities. Norms for young people are generally much more permissive in the US and Europe, the primary sources of global media, than they are in Latin America. Over time, this access to global culture may lead to acceptance of new social norms, a breakdown in community-level controls, and more permissiveness concerning norms of sexuality and risk-taking for both young men and women. Greater research into the ways in which increasing access to global media contributes to shifting values, beliefs, and practices in the area of youth sexuality would be an invaluable contribution to the field's understanding of the diverse factors that influence youth sexual knowledge, attitudes, practices.

Additional research into the role of migration and global media may not only inform broader understanding of youth sexuality, but also shed light on the study findings concerning commercial sex work. Specifically, this study yields surprising empirical findings concerning high rates of commercial sex work among young men. Although it is not surprising that male survey respondents are significantly more likely to have paid for sex than females, the rates of men who report that they have been paid to have sex in Mexico and Belize are unprecedented. Although these findings can not be explained by the existing literature, anecdotal evidence indicates that the unexpectedly high rates of male respondents being paid to have sex may be

related to high levels of sex tourism in Mexico and Belize. Relative to other countries within the region, sex tourism in southern Mexico and Belize is common due to extensive tourism overall, in addition to limited prosecution and short prison terms for sex tourism crimes.¹⁸⁸ Given both the surprising nature of these findings and the negative implications for transmission of HIV/AIDS and other STIs, further research is needed to explore the drivers of commercial sex practices among young men in Mesoamerica.

Existing research in the fields of sociology and public health provides important insights into the principal factors that shape youth sexual practices and understandings. At the same time, the sexual and reproductive health challenges facing youth are great, both for young people's own individual welfare and for that of their families, communities, and countries. It is my hope that this empirical research contributes in some small way to the fields' collective understanding of the multi-faceted forces that influence youth sexuality, and may also help ensure effective implementation of the Ministerial Declaration and other policy initiatives designed to reduce young people's vulnerability to unwanted pregnancy, adolescent childbirth, and HIV/AIDS.

APPENDIX A: SURVEY INSTRUMENT

Please respond to each question by writing your answer in the space provided or marking the appropriate response with a circle. Thank you very much for your participation!

PLEASE DO NOT WRITE YOUR NAME ANYWHERE ON THIS DOCUMENT

SCHOOL: _____

1. How old are you?
2. Which is your sex?
 - a. Male
 - b. Female
3. What are your plans after completing college?
 - a. Go to the university (*please specify in which city*) _____
 - b. Work (*please specify what type of work*) _____
 - c. Other (*please specify*) _____
4. Do you plan to get married?
 - a. During the next five years
 - b. During the next ten years
 - c. In more than ten years
 - d. Never
5. In case you do plan to get married, do you know to whom?
 - a. Yes
 - b. No

6. Do you plan to have children?

a. Yes

b. No

7. In case you do plan to have children, how many children do you plan to have? _____

8. In your opinion, do your parents support the majority of your decisions and actions?

a. Yes

b. No

9. Do you share personal aspects of your private life with your parents?

a. Yes

b. No

10. In your opinion, what is the most serious social problem in Belize?

11. In your opinion, what is the most serious problem for the young people in Belize?

12. How old were you when you learned for the first time
about sex, or sexual intercourse? _____

13. Where did you learn about sex for the first time? (*Please circle only one response*)

- a. From my mother
- b. From my father
- c. From my brothers/sisters
- d. From my friends
- e. In school
- f. In church
- g. On television
- h. Books
- i. Other (*Please specify*) _____

14. Where else have you learned about sex? (*Please circle all relevant responses*)

- a. From my mother
- b. From my father
- c. From my brothers/sisters
- d. From my friends
- e. In school
- f. In church
- g. On television
- h. Books
- i. Other (*Please specify*) _____

15. Do you talk with your parents about sex?

- a. Yes
- b. No

16. Why or why not?

17. In case you do talk to your parents about sex, what do you talk about?

18. Do you talk to your friends about sex?

a. Yes

b. No

19. In case you do talk to your friends about sex, what do you talk about?

20. Do you feel sexually attracted to?

a. Men only

b. Men and women

c. Women only

21. Have you ever had sex?

a. Yes

b. No

**If you responded “YES” to this question, please continue with the following questions.
If you responded “NO” to this question, please move on to Question Number 50 on Page 9.**

22. How old were you when you had sex for the first time? _____

23. How many people have you had sex with in your life? _____

24. Of the people with whom you have had sex, have they been?:

- a. Only men
- b. Men and women
- c. Only women

25. What type of sex have you had (*Please circle all the responses that are relevant*)

- a. Vaginal
- b. Anal
- c. Oral

26. In case you use contraception, what type of contraception do you use most frequently?
(*Please circle all the responses that are relevant*)

- a. The contraceptive pill
- b. Condom
- c. Diaphragm
- d. Rhythm method
- e. Other (*Please specify*) _____
- f. None

27. How many sexual partners did you have in last year? _____

28. How frequently did you use contraception last year? *(Please circle only one response)*

- a. Never
- b. Sometimes
- c. Almost always
- d. Always

29. How many times have you had sex, or sexual intercourse, in the last month? _____

30. How many sexual partners did you have in the last month? _____

31. In case you had sex during the last month, how frequently did you use contraception?

- a. Always
- b. Almost always
- c. Sometimes
- d. Never

32. When you have sex, is it generally?:

- a. Unplanned
- b. Planned

33. Did you use contraception the last time you had sex?

- a. Yes
- b. No

34. Why or why not?

35. If you used contraception the last time you had sex, what type of contraception did you use? *(Please circle all the responses that are correct)*

- a. The pill
- b. Condom
- c. Diaphragm
- d. Rhythm method
- e. Other (Please specify) _____
- f. None

36. Approximately how many days/weeks/months do you usually wait before you have sex with a new partner? _____

37. How long have you been together with your current partner?
(In case you don't have a current partner, how long were you together with your last partner?) _____

38. How old is your current partner *(or your last partner)*? _____

39. Which is the sex of your current partner *(or your last partner)*?

- a. Male
- b. Female

40. Do you talk to your current partner *(or did you talk to your last partner)* about sex?

- a. Yes
- b. No

41. In case you do talk about with your current partner *(or your last partner)* about sex, what do you talk about?

42. Do your parents know that you are sexually active?

- a. Yes
- b. No

43. In case your parents don't know that you are sexually active, what would they say if they knew?

44. Does anyone else other than your partner know that you are sexually active?

- a. Yes
- b. No

45. If someone other than your partner knows you are sexually active, who is this person?

- a. A friend
- b. Brother/sister
- c. Other (*Please specify*) _____

46. When you have sex, how frequently are you under the influence of alcohol or drugs?

- a. Never
- b. Sometimes
- c. Almost always
- d. Always

47. Have you ever paid to have sex?

- a. Yes
- b. No

48. Have you ever been paid to have sex?

- a. Yes
- b. No

49. How frequently do you use condoms?

- a. Never
- b. Rarely
- c. Sometimes
- d. Frequently
- e. Always

50. Do you have access to condoms?

- a. Yes
- b. No

51. If you do have access to condoms, where can you get them from?

- a. In a store
- b. At the clinic
- c. At the pharmacy
- d. Other places (*Please specify*) _____

52. Do you feel comfortable getting condoms?

- a. Yes
- b. No

53. Why or why not?

54. Do you carry condoms with you in case you might have a sexual encounter?

- a. Yes
- b. No

55. In your community, is it important for the woman to be a virgin when she gets married?
- a. Yes
 - b. No
56. In your community, is it important for the man to be a virgin when he gets married?
- a. Yes
 - b. No
57. In your personal opinion, when two people of the same sex have sexual intercourse, is it?
- a. Always wrong
 - b. Sometimes wrong
 - c. Never wrong
58. In your personal opinion, when a woman has sexual intercourse before marriage, is it?
- a. Always wrong
 - b. Sometimes wrong
 - c. Never wrong
59. In your personal opinion, when a man has sexual intercourse before marriage, is it?
- a. Always wrong
 - b. Sometimes wrong
 - c. Never wrong
60. In your personal opinion, when a woman has an abortion, is it?
- a. Always wrong
 - b. Sometimes wrong
 - c. Never wrong

61. In your personal opinion, is teen pregnancy a problem in Belize?

- a. Yes
- b. No

62. Why or why not?

63. How many of your sisters and/or cousins became pregnant before age 18? _____

64. What did your sisters and/or cousins who got pregnant before the age of 18 do when they found out they were pregnant? *(Of the total number written in Question #63, please write the corresponding number of people next to each option listed below)*

- a. Had the baby and got married or lives with their partner _____
- b. Had the baby alone _____
- c. Had a miscarriage _____
- d. Had an abortion _____
- e. Gave the baby up for adoption _____

65. Are you concerned about getting HIV/AIDS?
(HIV is the virus that causes AIDS)

- a. Yes
- b. No

66. In your opinion, is HIV/AIDS a problem in Belize?

- a. Yes
- b. No

67. Why or why not?

68. Do you talk to your friends about HIV/AIDS?

- a. Yes
- b. No

69. Are your friends concerned about getting HIV/AIDS?

- a. Yes
- b. No

70. In your opinion, are your friends at risk for getting HIV/AIDS?

- a. They have a very high risk of contracting HIV/AIDS
- b. They have little risk of contracting HIV/AIDS
- c. They have no risk of contracting HIV/AIDS

71. Why or why not?

72. In your opinion, are you at risk of contracting HIV/AIDS?

- a. Yes, I have a pretty high risk of contracting HIV/AIDS
- b. I have little risk of contracting HIV/AIDS
- c. I have no risk of contracting HIV/AIDS

73. Why or why not?

74. Do you know anyone who has HIV/AIDS?

- a. Yes
- b. No

75. How many people do you know who have HIV/AIDS? _____

76. Does the possibility of getting HIV/AIDS affect your sexual practices?

- a. Yes
- b. No

77. Have you ever been tested for HIV/AIDS?

- a. Yes
- b. No

78. In case you have been tested, how many times have you been tested for HIV/AIDS? _____

79. Have you ever been forced to have sex?

- a. Yes
- b. No

80. How is HIV/AIDS transmitted? *(Please circle all the responses that are correct)*

- a. Shaking hands with an infected person
- b. Through mosquito bites
- c. Through vaginal sex with an infected person
- d. By kissing an infected person
- e. Through blood
- f. By having oral sex with an infected person
- g. Using the same eating utensils with an infected person
- h. Smoking marihuana with an infected person

81. What are the ways a couple can prevent an unwanted pregnancy?
(Please circle all the responses that are correct)

- a. Washing with vinegar
- b. Using the pill
- c. By using emergency contraception (the morning after pill)
- d. Abstinence
- e. Using a condom
- f. Having sex standing up
- g. Having sex during the woman's menstrual period
- h. Having sex for the first time

82. What is emergency contraception (or the morning after pill)?
(Please circle all the responses that are correct)

- a. It is a method used on a monthly basis to prevent unwanted pregnancies
- b. It is a method used to cause an abortion
- c. It is a method used to prevent HIV/AIDS
- d. It is a method used to prevent pregnancy up to five days after a sexual encounter without protection
- e. It is a method used to prevent pregnancies that can damage a woman's health

83. In which country and district were you born? _____

84. In which country and district were your parents born?

- a. Mother? _____
- b. Father? _____

85. What is your ethnicity?

- a. Mestizo / Ladino
- b. Creole
- c. Garifuna
- d. Mayan
- e. Other (*please specify*) _____

86. What is your family's approximate annual income? _____

87. What is your father's occupation? _____

88. What is your mother's occupation? _____

89. How many siblings do you have? _____

90. Do you live with your biological mother and father?

- a. Yes
- b. No

91. In case you don't live with your biological mother and father, who do you live with?

- a. My mother
- b. My father
- c. My partner
- d. Friends
- e. I live alone
- f. Other (*please specify*) _____

92. Are you married?

- a. Yes
- b. No

93. Do you have a job and go to school?

- a. Yes
- b. No

94. Which is your religious background?

- a. Catholic
- b. Anglican
- c. Evangelical
- d. Seventh Day Adventist
- e. Mormon
- f. Other (*please specify*) _____

95. How often do you go to church?

- a. More than once a week
- b. Once a week
- c. Once every other week
- d. Once a month
- e. Once a year
- f. Never

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