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Social and Cultural Factors that Influence the Knowledge, Attitudes, and Safe Sexual Practices of Rural Nicaraguan Teenagers

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Abstract

The purpose of this honors thesis project is to characterize the sexual practices of rural Nicaraguan teenagers and the cultural and social factors that influence these practices. Previous studies have only sampled rural Nicaraguan populations on a limited basis and many of these studies were done in the 1990s and early 2000s and may not paint an accurate picture any more. In order to update this information, an anonymous survey was administered to secondary school students at two different institutions in Chacraseca, Nicaragua (n=193). The survey investigated the relationship between sexual practices and religion, “machismo” culture, media, knowledge, and family and peer pressure. Based on results from this study, recommendations have been made to the Health Outreach for Latin America (HOLA) Foundation and other non-profit organizations that work in rural Nicaragua about how to improve sexual health education programs.
Introduction

Sexual health and education is an important area of study for researchers in Nicaragua, especially among adolescents, ages 12-21. Nicaragua has one of the highest adolescent fertility rates in the world with about half of Nicaraguan women giving birth before age 20 (Lion, Prata, & Stewart, 2009). HIV/AIDS is also a growing issue, with adolescents representing 9% of all new HIV infections in 2009, up from 6.8% in 2006 (Pan American Health Organization, 2012). Although contraceptive use has increased in recent years (30.7% of adolescents with a partner reporting having used a contraceptive method at some point), condom use is still low and female sterilization continues to be the primary method of birth control (Pan American Health Organization, 2012; Zelaya et al., 1996). This is problematic because sterilization does not prevent the spread of sexually transmitted diseases and is typically only considered by women who are older than 20 and already have families. Potential reasons cited by previous studies for high adolescent fertility in Nicaragua include socioeconomic status, education levels, the prevalence of Catholicism, machismo culture, and peer influence (Lion et al., 2009; Samandari & Speizer, 2010; Gutierrez et al., 2009; Blandon et al., 2006; Zelaya et al., 1996).

Socioeconomic status is the most commonly mentioned factor associated with high adolescent fertility rates because Nicaragua is the second poorest country in the Western Hemisphere. About 48% of the population lives below the national poverty line (“Rural Poverty in Nicaragua,” n.d.). Even among the Nicaraguan population there is a disparity between the urban and rural areas. Women in rural communities are more likely to have a child at a younger age than their urban counterparts (Blandon et al., 2006). This is consistent with global public health trends that demonstrate the role of socioeconomic status gradients in explaining differences in health. Access to education is a contributing factor with poorer communities having lower education levels.
Another factor that may contribute is that Nicaragua is a predominantly Catholic country. Although the Nicaraguan constitution provides for freedom of religion, over 80% of the population is Christian with at least 60% of the population identifying as Catholic (U.S. State Department, 2010). The Roman Catholic Church does not recommend sex before marriage, does not advocate any use of contraceptives other than Natural Family Planning, and views abortion as an excommunicable sin. In previous studies done in the United States, Catholicism has been associated with delayed timing of first sexual intercourse which would decrease teenage pregnancy rates (Jones, Darroch, & Singh, 2005). However, non-contracepting behavior among teenage girls has also shown to be higher among teenagers raised in a religious home (Kramer, Hogue, & Gaydos, 2007). Non-contracepting behavior could account for higher teenage pregnancy rates and an increase in rates of sexually transmitted diseases such as HIV/AIDS.

Other reasons for high fertility rates, such as machismo culture, are less certain. Machismo is defined as a sense of being manly (“Machismo”, n.d.). It is commonly used to describe the gender roles in Latin American cultures such as in Nicaragua. Machismo culture promotes both positive and negative implications. On a positive note, it promotes honor, female respect, responsibility, and hard work. Its negative implications include violence, unbalanced power gender roles, and the promotion of a man to be sexually experienced which can lead to infidelity and the spread of sexually transmitted diseases. Machismo culture has been cited by previous studies as a barrier to HIV prevention because it promotes male infidelity and denies women the opportunity to make decisions regarding their sexual health (Cianellie, Ferrer, & McElmurry, 2008).

Peer influence is another factor that has been cited in studies as a potential reason for high teenage pregnancy rates in Nicaragua. Peer influence is a broader theme in teenage sexual health, and research is mixed about the connection between peer pressure and age of sexual initiation. For
example, one study done in the United States found that peer pressure affected teens’ attitudes about sex, but not their actual practices and that parents were a larger influence among teenager’s sexual practices, especially among girls (Sneed, Tan, & Meyer, 2015). However, other research found that there was a connection between peer attitudes’ about sex and age of sexual initiation (White & Warner, 2015; Sieving, Eisenberg, Pettingell, & Skay, 2006). With mixed results from these studies, it is difficult to decisively conclude how influential peer pressure is on teenage sexual practices. The differing results could be explained by differences in the sample communities for these studies.

While there is a large base of information regarding sexual health and education in Nicaragua, most of the previous studies either did not sample a rural Nicaraguan population or did so on a limited basis. Many of the large studies were also conducted in the 1990s and early 2000s and may not paint an accurate picture. Additionally, only some of the studies focused solely on adolescents. Almost none of the studies looked at television/media as a factor that influences sexual attitudes and practices. To address these concerns, this study focuses on rural Nicaraguan adolescents exclusively by asking questions about numerous factors including knowledge, religion, “machismo” culture, media, and peer pressure, and how they influence the sexual knowledge, attitudes, and practices of the study participants.

Methods

This study sampled 193 male and female students between the ages of 12 and 21 who attended secondary schools in Chacaraseca, Nicaragua. The two secondary schools were selected because they agreed to participate in the Health Outreach for Latin America (HOLA) Foundation’s sexual health education program. The HOLA Foundation is a non-profit organization whose mission is to “provide integrated and sustainable health care solutions to developing countries in Latin America through the establishment of acute care clinics and promotion of community health improvement by means of
veterinary care and public health education” (“About Us,” n.d.). The organization, based in Boulder, CO USA primarily works in Nicaragua. The HOLA Foundation facilitated this study by providing local connections and gathering approval from the Nicaraguan government in order to conduct this research project at the two secondary schools. After providing an overview of the study and how their information would be used by trained HOLA Foundation volunteers, students were asked to complete a written survey at their desks in their home classroom. Survey responses were collected anonymously and required approximately 30 minutes time.

The written survey included five different sections of questions. The first section asked respondents basic information about their gender, age, family, religious practices, and education level. The second section contained questions about where students learn information about sex and how much students believe that they know about sexual health topics. It inquired about family, friends, school, and forms of media such as television, magazines, and music as possible sources of information regarding sex. The third section assessed the student’s actual knowledge on sexual health topics. It asked questions about how a woman can get pregnant, types of birth control, and sexually transmitted diseases. The fourth section inquired about the respondent’s personal sexual history. This included questions about whether the respondent had engaged in sexual intercourse before, number of partners, methods of birth control used, prior pregnancies, and sexually transmitted disease infections. This section also contained questions for students that had not engaged in sexual intercourse previously such as why they had chosen to abstain from having sexual intercourse. The fifth and final section of the survey had a series of opinion questions to assess the respondent’s attitudes about certain sexual issues such as: sex outside of marriage, love, peer pressure, birth control, the culturally appropriate roles of men and women, and domestic abuse. A copy of the survey in English can be found in Appendix A.
Almost all of the questions on the survey were multiple choice. The survey data was compiled and analyzed using the statistical program R (Gentleman & Ihaka, 2015). Standard statistical procedures such as chi-squared tests and a Welch two-sample t-test were used to process the data. An alpha level of 0.05 was used for all tests conducted.

This study was approved by the Institutional Review Board (IRB) at the University of Colorado, Boulder; the Health Outreach for Latin America Foundation; and the Medical General of Chacraseca which is appointed by Nicaragua’s Ministry of Health (MINSA).

**Results**

**Demographic Characteristics**

One hundred ninety three people participated in the study with about equal males and females (Table 1). The mean age was 15 (range 12-21) (Table 1). All of the participants lived and attended one of two secondary schools in the rural community of Chacraseca, Nicaragua. Student participation was about equal from both schools. Nearly all of the students (91%) reported attending school regularly (p=2.20E-16) (Table 1). Most students identified being raised by their mothers (80%) with only 58% of students reporting that their father was involved in raising them (p=2.20E-16) (Table 1). About one third (34%) of students noted that a grandparent had helped raise them (p=2.20E-16) (Table 1). The subjects rated religion as an “important” part of their lives with Catholicism as the predominant religion (76%) and other denominations of Christianity as the second most popular selection (22%) (p=2.20E-16) (Table 1). Although most students stated that religion was an important part of their lives, just less than half (45%) of students attended a religious service once per week (p=2.20E-16) (Table 1). A few participants (7%) attended services more than once per week, but most students (66%) attended a religious service less than once per month if ever (p=2.20E-16) (Table 1).
Sources of Information about Sex

When asked where students get information about sex, participants most commonly selected a school teacher (85%). Other top choices included: friends (47%), the internet (45%), their mother (36%), films/television (36%), and health professionals (32%). When asked which of these sources of information were the most important the top three choices were teachers (69%), mothers (20%), and friends (16%) \( (p=2.20E^{-16}) \) (Fig. 1).

Despite school teachers being selected as one of the top sources of information for students, 56% of students reported only receiving a day or less of sexual health education in school \( (p=0.01346) \). How much sexual education a student reported differed between the two schools. At School A, 55% of students reported getting more than 1 day of sexual education, while only 33% of students at School M reported more than 1 day of sexual education \( (p=0.0296) \).

When it came to discussing sex with family, most students stated that they did not feel comfortable talking to a parent about sex (61%) \( (p=3.57E^{-15}) \). Although uncomfortable, many students noted that they had a conversation about sex with a family member at least once. Mothers most commonly spoke with their children about sex (40%), but other siblings (25%) and fathers (18%) did too \( (p=5.08E^{-14}) \). Nonetheless, one third of all subjects had never spoken to a family member about sex.

Interestingly, most students did not feel comfortable talking to a significant other about sex either. About 45% of students who had a partner reported not feeling comfortable discussing sex with them \( (p=0.00581) \). There was a stark contrast between how males and females answered this question. Of participants who had a significant other, males were nearly three times more likely than females to feel comfortable discussing sex with a partner \( (p=0.0003153) \).
Study participants did not identify with any type of media as an important source of information about sex. Seventy four percent of students felt that the sexual relationships depicted on television were only a little realistic, if realistic at all (p=6.75E-10). However, 36% of students noted that sexual scenes were always in the television programs that they watched and almost 31% of students responded that sexual references were always included in the music that they listened to (p=2.20E-16, p=2.41E-16). Violence against women was even more often portrayed than sexual scenes in television with 43% of students stating that it was always in the television programs that they watched (p=2.20E-16). Males and females responded differently on this question, with females reporting high prevalence of violence against women in television shows than males (p=0.001916).

Finally, students were asked about how confident they were about how much information they knew about sex. A majority of students (44%) reported knowing almost everything or everything about sex, while about one quarter of the students stated that they knew nothing or nearly nothing about sex (p=2.81E-16). Despite the split in knowledge confidence, almost all students (93%) wanted to know more about sex (p=2.20E-16). Students commented anecdotally that they wanted more information about infertility, sexually transmitted infections, pregnancy, contraceptives, domestic abuse, masturbation, types of sex, premature ejaculation, and sexuality.

**Sexual Knowledge**

Most students had at least some knowledge about pregnancy. Almost all students (92%) correctly identified that a woman can become pregnant from vaginal intercourse (p=2.20E-16). However, 16% of students thought that a woman could become pregnant from oral sex and 6% believed that a woman could become pregnant from anal sex (p=2.20E-16). Most study participants (77%) did know that a woman can get pregnant the first time that she has sexual intercourse (p=2.20E-16).
When it came to knowledge about sexually transmitted diseases, students knew more about some types of diseases than others. Asked to circle the sexually transmitted diseases from a list, subjects most commonly selected HIV/AIDS (93%), followed by Gonorrhea (71%), Syphilis (61%), and Herpes (53%) \(p=2.20\times10^{-16}\). Fewer students selected HPV (31%) and some students incorrectly selected urinary tract infections (24%) \(p=2.20\times10^{-16}\). Subjects clearly understood that STDs could be transmitted during vaginal intercourse (90%), but were less confident about anal (40%) and oral sex (47%) \(p=2.20\times10^{-16}\). Subjects were also less confident about whether an individual had to be showing symptoms or look unhealthy in order to transmit the disease with only 57% correctly answering “no” and 33% answering “unsure” \(p=4.64\times10^{-5}\). Regarding AIDS, most students (73%) recognized that it was an incurable disease \(p=2.20\times10^{-16}\). However, females were more likely than males to answer “unsure” to whether AIDS is a curable disease or not \(p=0.01949\).

Study participants were knowledgeable about condom uses. About 83% of students correctly identified that a condom could effectively prevent pregnancy and 89% of students recognized that condoms could prevent the spread of STDs (Table 2) \(p=2.20\times10^{-16}\). Study participants were more knowledgeable about condoms than other forms of contraceptives. Only about one third of students knew that the birth control pill, birth control injection, and abstinence were other forms of contraceptives \(p=2.20\times10^{-16}\). Additionally, only 28% of subjects identified abstinence as another method to prevent the spread of STDs \(p=2.20\times10^{-16}\). Most students did recognize that the birth control pill and injection would not prevent the spread of STDs with only 12-13% of students selecting this option \(p=2.20\times10^{-16}\). In addition to knowing condom uses, 95% of subjects reported having seen a condom before and 96% knew that a condom could only be used once (Table 2) \(p=2.20\times10^{-16}\). However, only 55% of students reported knowing how to use a condom and more than twice as many females than males reported not knowing how to use a condom \(p=2.20\times10^{-16}, p=2.24\times10^{-9}\). Furthermore 22% of
students incorrectly believed that it was appropriate to use more than 1 condom at the same time (p=2.20E-16).

**Sexual History**

Students were asked about their personal dating and sexual histories. Just over a third of subjects said that they were currently dating (p=2.20E-16). Twenty respondents reported having had sex before, but 98 subjects abstained from answering this question. Regarding birth control usage: 81% of respondents reported using condoms, 29% selected abstinence and 24% used birth control pills (p=2.20E-16). Less than 5% of respondents said that they had gotten pregnant or gotten someone else pregnant and less that 3% admitted to having contracted an STD (p=2.02E-14, p=2.20E-16).

Students were also asked about their sexual health concerns. Only 64% of participants reported concern about sexual health issues (p=2.20E-16). However, 77% stated that they were concerned about contracting an STD (p=2.20E-16). Despite the majority of students being concerned about their sexual health, only 34% reported visiting a doctor at least annually (p=5.15E-6).

Of particular interest, students who had not had sex yet were asked about why they had chosen to wait. The most popular answer was because they did not feel ready to have sex yet. The other top answers were that they were afraid of getting pregnant or getting someone else pregnant and they were afraid of contracting an STD (p=2.20E-16). Males and females responded differently to this question. Among males, 27% chose that they were not ready to have sex yet, 20% reported that they just had not had the opportunity to have sex, and 18% were afraid of contracting STDs (p=9.52E-10). Among females, 41% reported not feeling ready to have sex, 21% were concerned about becoming pregnant, 17% felt that sex before marriage was wrong, and 0% reported that the reason that they had not had sex yet was because they had not had the opportunity to do so (p=9.52E-10). Additionally, when
asked directly about waiting to have sex before marriage, 61% of respondents said that they planned to wait with 3 times as many females reporting wanting to wait than males (p=2.60E-11).

**Sexual Attitudes and Opinions**

This section of the survey asked participant’s opinions about a number of different topics including: the importance of sexual acts, the nature of sexual relationships, religion and sex, peer pressure, the roles of men and women, and domestic violence.

When asked how “big of a deal” sexual intercourse, anal sex, and oral sex were on a scale from 1-5, subjects typically picked one extreme or the other. For example, 22% of subjects stated that sexual intercourse was not a big deal, while 21% of subjects stated that sexual intercourse was a very big deal (p=1.87E-9). With anal sex and oral sex about 25% of respondents selected that it was not a very big deal while about 10% said that it was a very big deal (p=2.20E-16). Female respondents were about 3 times more likely than males to select “unsure” as their answer for these opinion questions (Fig. 2) (p=0.00528, p=0.000612, and p=0.000768).

Subjects were also asked about whether marriage, being in a committed relationship and love are necessary to have a sexual relationship. Half of all respondents stated that it was not okay to have sex outside of marriage (p=7.29E-13). Females were ten times more likely than males to believe that sex outside of marriage was not okay, but females were twice as likely as males to answer “I do not know” to this question (Fig. 2) (p=7.95E-5). The majority of male and female (68%) respondents did believe that it was wrong to have more than 1 sexual partner at a time (p=2.20E-16). Subjects were more split when it came to answering whether love was necessary for a sexual relationship. Just under half (43%) chose that love was necessary for a sexual relationship while 30% said that love was not necessary (p=6.79E-8). Furthermore, males were about twice as likely as female respondents to say that love was necessary for
a sexual relationship. However, females were 2.5 times more likely to answer “I do not know” than males (Fig. 2) (p=0.02846).

Subjects were prompted to evaluate how their religious beliefs played into their sexual decision making. About half of respondents said that their religion did not believe that it was okay to have sex before marriage, but 4 times more males reported that their religion was okay with sex before marriage than females (p=2.20E-16, p=0.01262). Despite half of the students acknowledging that their religion did not believe in sex before marriage, only 11% of students who felt pressure to not have sex said that it came from their church (p=1.17E-8). In regards to contraception usage, 46% of students reported that their religion approved of the use of birth control (p=2.08E-11).

Peer pressure was another factor that students were asked to consider in how they make sexual health decisions. Of students who felt pressure to have sexual intercourse, 31% recorded that it came from their friends and 44% said that it came from their partner (p=7.32E-10). However, friends and partners were also the top two influencers for students who felt pressure to not have sex. Among students who felt pressure to not have sex, 37% reported that it came from their friends and 44% said that it came from their partner (p=1.17E-8). Subjects were asked to guess how many of their female and male classmates were having sex. Participants perceived that 58% of their female classmates were not having sex and 42% of their male classmates were not having sex (p=2.20E-16, p=6.61E-12).

Study participants were questioned about the perceived roles of men and women as well. When asked about whether women could say no to sex, 41% of respondents selected yes and 27% selected “it depends” (p=1.17E-6). Females were twice as likely as males to report that it was okay for a woman to say no to sex (p=0.001469). When asked about whether men could say no to sex only 34% of respondents said yes and 29% said no (p=9.63E-4). Males were twice as likely as females to say that men could not say no to sex (p=0.017). As far as who should initiate sex, 51% of respondents thought that
either the man or woman could initiate sex (p=4.16E-14). However, more males than females thought that the man should initiate sex and females were nearly 4 times more likely to select “unsure” as their answer (Fig. 2) (p=0.001494). In regards to taking responsibility for sex, study participants most commonly thought that both the man and woman were equally responsible. Over half (61%) of respondents thought that both sexes were responsible for preventing an unplanned pregnancy and three quarters of respondents thought that both sexes were responsible for caring for any children that resulted from an unwanted pregnancy (p=2.20E-16, p=2.20E-16).

Opinions on domestic violence was the final topic of the survey. The majority of students did not condone physical violence in relationships. Almost all respondents did not believe that it was acceptable for a man to hit his wife or a wife to hit her husband (p=2.20E-16, p=2.20E-16). Additionally, 85% of study participants thought that physical violence was unacceptable in order to have sex and half of all students thought that neither men nor women should use force in order to have sex (p=2.20E-16, p=7.90E-11, and p=9.82E-13). Males and females did differ slightly in response to the questions about force. Females were 2-3 times more likely than males to be “unsure” about whether a man or woman should use force to have sex (Fig. 2) (p=0.004603, p=0.0003351).

Discussion

Although there is a large base of information about the sexual attitudes and practices in Nicaragua, many prior studies are over ten years old, include very few teenagers, and sampled primarily urban areas. This survey was designed in order to clarify the sexual knowledge, attitudes, and practices of rural Nicaraguan teenagers in Chacraseca because Chacraseca is a popular region for non-profit organization intervention including by the Health Outreach for Latin America (HOLA) Foundation. This survey identified how factors such as socioeconomic status, education, Catholicism, machismo culture,
peer influence, and media influence rural Nicaraguan teenagers in Chacraseca, as well as offers suggestions about how to improve sexual health education programs.

**Socioeconomic Status**

All study participants lived and attended school in Chacraseca, Nicaragua, a rural and relatively poor sector. Rural living and lower socioeconomic status have been shown to increase a woman’s risk of becoming pregnant as a teenager (Blandon et al., 2006). Lower socioeconomic status can also restrict individual’s access to goods and services such as condoms and birth control. Condoms and birth control appeared to be an access issue for many individuals in this study. Although most students were knowledgeable about condoms and willing to use them, they reported infrequent use if any use at all. Condoms can prevent pregnancy and the spread of STDs which are both growing issues in Nicaragua, especially among teenagers. Non-profit organizations should consider how they could increase teenager’s access to condoms as part of their sexual health education programs.

**Education**

This study also sought to evaluate how knowledgeable students were about sexual health topics. Participants in this study correctly answered questions about condoms and HIV/AIDS (Table 2). However, fewer students correctly answered questions about other sexually transmitted diseases or prevention methods. Non-profit organizations should continue to present information about pregnancy, STDs, and prevention method options including abstinence.

Participants identified their teachers as the most important source of information on sexual health topics, but most students reported only receiving one day of sexual health education at school. One strategy that non-profit organizations might use in developing their sexual health education programs is to incorporate the teachers more. It could be worthwhile to provide teachers with the
resources in order to facilitate the sexual education programs themselves as this information would then be coming from a trusted source as self-reported by students.

**Catholicism**

Prior studies have demonstrated that Catholicism has both a positive and negative influence on teenagers’ sexual practices. Catholicism has been shown to delay age of sexual initiation, but it also promotes non-contracepting behavior (Jones et al., 2005; Kramer et al., 2007). Among students who participated in this survey, Catholicism did not seem to strongly influence sexual attitudes or practices. A majority of students identified that their religion did not believe in sex before marriage, which is consistent with Roman Catholic beliefs. However, a small minority of students who felt pressure to not have sex reported that the pressure came from their church. This suggests that since most of the participants are Catholic, Catholicism does not have a strong influence on teen sexual attitudes and practices. Furthermore, almost half the students in this study reported that their religion approved of birth control use. This would be inconsistent with Roman Catholic rules, suggesting that students may not be clear about some of their religions’ beliefs regarding sexual behavior. These are important issues to consider when non-profit organizations partner with churches and religious organizations on sexual health and education.

**Machismo Culture**

Prior studies have found a negative correlation between machismo culture and safe sexual practices, but little research has been done on how large of an influence it is among sexual attitudes in rural Nicaraguan teenagers (Cianellie et al., 2008). Students who participated in this survey identified machismo culture as a major factor in their sexual attitudes through their question responses. For example, machismo culture promotes sexually experienced men and sexually naïve women. When asked why they had not had sex yet, 20% of males said that they had not had the opportunity where as 0% of
females chose that answer. Furthermore, females were three times more likely to want to wait to have sex than males. This demonstrates that more teenage boys than girls have a desire to engage in sexual activity and would likely do so given the opportunity. Students also reported that it was less appropriate for a man to say no to sex than a woman, which illustrates the pressure on teenage boys to be sexually active and the pressure on teenage girls to abstain.

Machismo culture has also been suggested to promote acceptance of domestic violence. Both males and females in this study did not condone domestic violence. This suggests that these students adhere to the concept of machismo culture that promotes chivalry over blatant male dominance.

Perhaps most interestingly, machismo culture appeared to even influence how males and females answered sexual opinion questions. Teenage girls were 3 times more likely to answer “unsure” about an answer to an opinion question than teenage boys in this study (Fig. 2). This demonstrates the pervasiveness of machismo culture that men are supposed to have an opinion about sexual topics and that women should remain naive.

Of note, participants reported that love was more important in a relationship to males than females. This sexual attitude might appear to contradict the pervasiveness of machismo culture on the surface, but it may have to do with females placing a higher value on security in a relationship. If this is the case, this attitude would be consistent with a male dominant, patriarchal society.

Overall, machismo culture appears to be a large influencing factor on participants’ sexual attitudes. Non-profit organizations should be aware of the prevalence of this thought pattern and consider that these attitudes may present a barrier for women to self-advocate in a sexual relationship as well as promote men to make risky sexual health decisions in order to gain experience. It is recommended that sexual health education programs in Chacraseca incorporate information about
decision making skills as well as promote self-awareness among students about machismo culture beliefs.

Peer Influence

Peer influence appeared to both promote and obstruct safe sexual practices among teenagers. This is consistent with previous research on the influence of peer pressure (Sneed et al., 2015; White et al., 2014; Sieving et al., 2006). Students felt equal pressure to have sex from friends than to not have sex. This suggests that peer pressure is dependent on the types of friends that students surround themselves with. Non-profit organizations can likely minimize peer pressure influence by teaching their sexual health education programs to entire schools and classes which would thus provide most students’ friends with the same information.

Students actually reported that parents, especially mothers, had a larger influence on their sexual attitudes than peers (Fig. 1). However, a third of all participants had never had a conversation about sex with a family member. It could be worthwhile to have greater parental involvement in sexual health education programs in Chacraseca. Non-profit organizations could consider teaching parents how to talk to their children about sex as part of their programs.

Media

Little to no research had previously been conducted on how media influences sexual attitudes among rural Nicaraguan teenagers. In this survey, students noted that they did not think that sexual scenes depicted in the media were realistic, but that violence against women was a prevalent theme in the media. This suggests that media does not seem to have a large influence on teenager’s sexual attitudes in Chacraseca, but that it may shape some of their opinions on domestic violence. More
research would need to be done to identify what type of influence the media has on teen attitudes about domestic violence.

Limitations

Some methodological limitations of this cross-sectional study may affect the interpretation of the results. All of the data were self-reported by study participants. Participants may have misrepresented their attitudes in order to justify their behavior or to shape the opinions of the Health Outreach for Latin America Foundation which provides services in Chacralseca. Additionally, the survey only sampled students who were still in school. It is likely that students who had already become pregnant or gotten someone pregnant were no longer attending school and instead working or staying at home. Moreover, students had limited privacy while completing the survey independently at their desk in a classroom. If students had been completely isolated from their peers it is likely that they would have felt more comfortable providing answers to the sexual history questions. And, furthermore, the survey is descriptive and can only demonstrate correlations, not causal relationships.

Finally, the implications of how far reaching this study is should be considered. Two secondary schools in Chacralseca, Nicaragua were sampled. Chacralseca is a rural and agricultural community that shares many characteristics with other rural sectors in Nicaragua. In this way the results of this study can be applied to most rural Nicaraguan teenagers. However, the rural Nicaraguan sectors are run highly independent of national government by local committees. These local committees can regulate access to resources such as in the schools and promote certain values. This can lead to subtle differences between the rural sectors in addition to those differences already present due to geography. Despite subtle difference that may exist between many of the rural sectors, Nicaragua is a relatively small country and only has a total population of just over six million. The differences between the rural sectors
are likely minimal and thus the results of this study should be applicable to most rural Nicaraguan teenagers.

**Conclusion**

Findings from this study provide relevant and current information about the factors that influence rural Nicaraguan teenager’s sexual attitudes and practices. In particular, socioeconomic status may be limiting teen access to condoms, which could help prevent pregnancy and the spread of sexually transmitted diseases. This could be remedied by increasing access to condoms. Another factor to consider is that parents and teachers should be more involved in the sexual education process as they are considered an underutilized important source of information among secondary school students. On the other hand, peer influence and Catholicism were reported as having minimal influence on teenagers’ sexual attitudes and practices. However, participants reported that machismo culture had a large influence on their sexual attitudes. To address machismo culture, non-profit organizations should discuss how gender roles affect risk taking behavior among men and remove decision making power from women in their sexual education programs. Further research should be done to evaluate the role that media plays on shaping attitudes about relationships. Additionally, future research should evaluate the effectiveness of specific educational programs on teaching sexual health to secondary school students in rural Nicaragua.
References


Tables and Figures

*Table 1.* Demographic characteristics of Chacruseca, Nicaragua secondary school students who participated in the study (n=193)

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<th>Characteristics</th>
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<tr>
<td>Male</td>
<td>51.30%</td>
</tr>
<tr>
<td>Female</td>
<td>48.70%</td>
</tr>
<tr>
<td>Average Age</td>
<td>15 years</td>
</tr>
<tr>
<td>Attend School Regularly</td>
<td>91%</td>
</tr>
<tr>
<td>Raised by Mother</td>
<td>80%</td>
</tr>
<tr>
<td>Raised by Father</td>
<td>58%</td>
</tr>
<tr>
<td>Raised by Grandparent</td>
<td>34%</td>
</tr>
<tr>
<td>Catholic</td>
<td>76%</td>
</tr>
<tr>
<td>Other Christian</td>
<td>22%</td>
</tr>
</tbody>
</table>
Table 2. Percentage of respondents among rural Nicaraguan teenagers that correctly answered questions about condom use.

<table>
<thead>
<tr>
<th>Condom Knowledge Statement</th>
<th>Percentage of Respondents that Answered Correctly (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condoms prevent pregnancy</td>
<td>83</td>
</tr>
<tr>
<td>Condoms prevent the spread of STDs</td>
<td>89</td>
</tr>
<tr>
<td>A condom cannot be used more than once</td>
<td>96</td>
</tr>
<tr>
<td>More than one condom should not be used at the same time</td>
<td>62</td>
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</tbody>
</table>
Figure 1. A comparison of the types of sources that students use for information about sex as compared to the source that students identified as the most important for learning information about sex. School teachers were selected as the most important source of information about sex as confirmed by a chi square analysis with a \( p \leq 0.05 \).
Figure 2. A comparison of the percentage of male versus female respondents who answered ‘unsure’ to survey questions in section 5. The survey questions in section 5 pertained to sexual attitudes about the importance of sex, whether love is necessary for a sexual relationship, and gender roles. A chi-square analysis was used with a $p < 0.05$ for all questions. A copy of the survey questions in English can be found in Appendix A.
Appendix A

Sexual Health Questionnaire

We would like to ask you some questions about your personal background, opinions, knowledge of sexual health, and your sexual health behavior. Your answers to these questions will help us understand how your background, opinions, and knowledge are related to your sexual behavior. Your answers will help us create a better sexual health education program for other teenagers in Nicaragua. We realize that the following questions are very personal. Your answers will remain strictly confidential and will be associated only with a numerical identification code, not your name. However, if you would prefer not to answer an item, please skip that question, and move on to the next question. Please answer the questions carefully. Some questions will require you to circle one or more options while others will ask you for a short written response.

Section 1: Socioeconomic and family characteristics

1. Please select the gender that you most closely identify with.
   a. Male
   b. Female

2. How old are you?

3. Who were you raised by? (Circle all that apply)
   a. Mother
   b. Father
   c. Grandparent
   d. Sibling
   e. Other family member
   f. Other

4. Which religion most closely resembles your religious beliefs?
   a. Catholic
   b. Other Christian
   c. Islam
   d. Hindu
   e. Jewish
   f. None
   g. Other: ________________________

5. How important is religion in your life? (1=Very Unimportant and 5=Very Important)
   1 2 3 4 5

6. How often do you attend religious services (such as going to mass or attending bible study)?
   a. Every day
   b. At least once per week
   c. At least once per month
   d. At least once per year
   e. Less than once per year
   f. Never

7. Including this school year, how many years have you been in school?

8. Do you attend school regularly?
   a. Yes
   b. No
   c. Sometimes
Section 2: Sources of Information

1. Where do you get information about sex? (Circle all that apply)
   a. School teacher
   b. Mother
   c. Father
   d. Sibling
   e. Other family member
   f. Friends
   g. Health Professional
   h. Church
   i. Books/Magazines
   j. Films/Television
   k. Internet
   l. Other: ________________

2. What has been the most important source of information for you on this topic? (Circle one)
   a. School teacher
   b. Mother
   c. Father
   d. Sibling
   e. Other family member
   f. Friends
   g. Health Professional
   h. Church
   i. Books/Magazines
   j. Films/Television
   k. Internet
   l. Other: ________________

3. Has a family member talked to you about safe sexual practices?
   a. Yes
   b. No
   c. A little

4. Which family member talked to you about sex? (Circle all that apply)
   a. Mother
   b. Father
   c. Brother
   d. Sister
   e. I have not talked with a family member about sex
   f. Other: ________________

5. Do you feel comfortable discussing sex with your parent(s)?
   a. Yes
   b. No
   c. Sometimes

6. Have you had sexual health education in school?
   a. Yes
   b. No
   c. A little

7. How many days approximately were spent covering sexual health education?
   a. Less than 1
   b. 1 day
   c. 1-5 days
   d. More than 5 days

8. Do you feel comfortable discussing sex with a health care provider (doctor, nurse, etc.)?
   a. Yes
   b. No
   c. Sometimes

9. Do you feel comfortable discussing sex with your boyfriend/girlfriend?
   a. Yes
   b. No
   c. Sometimes
   d. Do not have a boyfriend or girlfriend

10. Do you think that sexual relationships depicted on television/film are realistic?
    a. Very realistic
    b. Mostly realistic
    c. Only a little realistic
    d. Not realistic at all

11. Approximately how many hours of television/film do you watch per week?
    a. Less than 3 hours
    b. 3-8 hours
    c. 8-14 hours
    d. Over 15 hours

12. How often do the television/film programs that you watch contain sexual scenes? (1=Never and 5=Always)
    ______________________
13. How often do the television/film programs that you watch contain violence against women? 
   \[(1=Never \ and \ 5=Always)\]

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<td>4</td>
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I do not watch television/films

14. What type of music do you like to listen to? (Circle all that apply)
   a. Hip Hop/Reggaeton
   b. Pop
   c. Rock
   d. Heavy Metal
   e. Rap
   f. Folk
   g. Other: ________________

15. How often does the music that you listen to contain sexual references? \[(1=Never \ and \ 5=Always)\]

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I do not listen to music

16. How often does the music that you listen to contain violence against women? \[(1=Never \ and \ 5=Always)\]

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I do not listen to music

17. Do you read magazines?
   a. Yes
   b. No
   c. Sometimes

18. How often do magazines have sexy images? \[(1=Never \ and \ 5=Always)\]

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Unsure/I do not read magazines

19. How much do you know about sex? \[(1=Nothing \ and \ 5=Everything)\]

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20. How much do you know about sexually transmitted diseases? \[(1=Nothing \ and \ 5=Everything)\]

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21. How much do you know about condoms? \[(1=Nothing \ and \ 5=Everything)\]

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<tbody>
<tr>
<td>1</td>
<td>2</td>
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22. Would you like more information about sex?
   a. Yes
   b. No
   c. A little
   d. I do not know

23. What topics would you like more information on?

---

**Section 3: Sexual Knowledge**

1. Which of the following ways can a woman get pregnant? (Circle all that apply)
   a. Oral sex
   b. Abstinence
   c. Vaginal sex
   d. Anal sex
   e. Other: ________________

2. Can a woman get pregnant the first time that she has intercourse?
   a. Yes
   b. No
   c. Unsure

3. Which of the following methods can effectively prevent pregnancy? (Circle all that apply)
   a. Condom
   b. Birth Control Pill
   c. Birth Control Injection
   d. Withdrawal (pulling the penis out before ejaculation)
   e. Abstinence
   f. Intrauterine Device (IUD)
   g. Rhythmic planning or safe period
   h. Other: ________________
4. Which of the following are sexually transmitted diseases? (Circle all that apply)
   a. Influenza
   b. Syphilis
   c. Gonorrhea
   d. Chlamydia
   e. Urinary Tract Infection
   f. HIV/AIDS
   g. Human Papillomavirus
   h. Herpes
   i. Meningitis

5. How can you get a sexually transmitted disease? (Circle all that apply)
   a. Kissing
   b. Oral sex
   c. Vaginal sex
   d. Anal sex
   e. Holding hands

6. Which of the following prevent the spread of sexually transmitted diseases? (Circle all that apply)
   a. Condom
   b. Birth Control Pill
   c. Birth Control Injection
   d. Withdrawal (pulling the penis out before ejaculation)
   e. Abstinence
   f. Intrauterine Device (IUD)
   g. Rhythmic planning or safe period
   h. Other: ________________________

7. Does a person with a sexually transmitted disease always look unhealthy?
   a. Yes
   b. No
   c. Unsure

8. Is it possible to get a sexually transmitted disease without the person showing symptoms?
   a. Yes
   b. No
   c. Unsure

9. Are there treatments for some sexually transmitted diseases? (Circle all that apply)
   a. Yes
   b. No
   c. Unsure

10. Where could a friend with a sexually transmitted disease get treatment? (Circle all that apply)
    a. Clinic
    b. Shop
    c. Pharmacy
    d. At Home Remedy
    e. Other: ________________________

11. Is it possible to cure AIDS?
    a. Yes
    b. No
    c. Unsure

12. Have you ever seen a condom?
    a. Yes
    b. No
    c. Unsure

13. Do you know how to use a condom?
    a. Yes
    b. No
    c. Unsure

14. Should the same condom be used more than once?
    a. Yes
    b. No
    c. Unsure

15. Should more than one condom be used at a time?
    a. Yes
    b. No
    c. Unsure

Section 4: Sexual History

1. Are you dating?
   a. Yes
   b. No
   c. Unsure

2. Are you concerned about sexual health issues?
   a. Yes
   b. No
   c. Unsure

3. Have you ever had vaginal sexual intercourse?
   a. Yes (Continue to question 4)
   b. No (Skip to question 6)

4. How old were you when you first had vaginal sexual intercourse?
5. Did you regret the first time you had sex?
   a. Yes  
   b. No  
   c. Unsure

6. What types of sex have you had? (Circle all that apply)
   a. Oral sex  
   b. Vaginal sex  
   c. Anal sex  
   d. None (Skip to question 8)

7. How many sexual partners have you had?

8. Do you use birth control?
   a. Yes  
   b. No  
   c. Sometimes

9. Which method(s) of birth control do you and/or your partner use? (Circle all that apply)
   a. Condom  
   b. Birth Control Pill  
   c. Birth Control Injection  
   d. Withdrawal (pulling the penis out before ejaculation)  
   e. Abstinence  
   f. Intrauterine Device (IUD)  
   g. Rhythmic planning or safe period  
   h. Other: ____________________

10. How often do you use birth control? (1=Never and 5=Every time)
    1 2 3 4 5

11. Are you concerned about becoming pregnant or getting someone pregnant?
    a. Yes  
    b. No  
    c. Unsure

12. Do you want to become pregnant in the next year or get someone pregnant in the next year?
    a. Yes  
    b. No  
    c. Unsure

13. Have you ever gotten pregnant or gotten someone pregnant?
    a. Yes  
    b. No  
    c. Unsure

14. How many times have you been pregnant or how many people have you gotten pregnant?

15. Have you ever had a sexually transmitted disease?
    a. Yes (Continue to question 16)  
    b. No (Continue to question 17)

16. If so, what type of sexually transmitted disease(s) have you had?

17. Are you concerned about contracting a sexually transmitted disease?
    a. Yes  
    b. No  
    c. Unsure

18. Do you see a doctor regularly (at least annually)?
    a. Yes  
    b. No  
    c. Sometimes

19. If you have not had sex, what are the reasons that you chose not to have sex? (Circle all that apply) (Skip to Section 5 if you have had sex)
    a. I don’t feel ready to have sex  
    b. I have not had the opportunity  
    c. It is against my family’s wishes  
    d. I think that sex before marriage is wrong  
    e. I am afraid of getting pregnant  
    f. I am afraid of getting HIV/AIDS or another sexually transmitted disease  
    g. Other: ____________________

20. Do you plan to wait to have sex until after marriage?
    a. Yes  
    b. No  
    c. Does not apply
Section 5: Sexual Attitudes

1. Is having sexual intercourse a big deal? (1=Not a big deal and 5=A very big deal)  
   1  2  3  4  5  I do not know

2. Is having oral sex a big deal? (1=Not a big deal and 5=A very big deal)  
   1  2  3  4  5  I do not know

3. Is having anal sex a big deal? (1=Not a big deal and 5=A very big deal)  
   1  2  3  4  5  I do not know

4. Is it okay to have sex outside of marriage?  
   a. Yes  
   b. No  
   c. Depends  
   d. I do not know

5. Does your family think that it is okay to have sexual intercourse before marriage?  
   a. Yes  
   b. No  
   c. Depends  
   d. I do not know

6. Do your friends think that it is okay to have sexual intercourse before marriage?  
   a. Yes  
   b. No  
   c. Depends  
   d. I do not know

7. Does your religion think that it is okay to have sexual intercourse before marriage?  
   a. Yes  
   b. No  
   c. I am not religious  
   d. I do not know

8. Is it okay to have sex when you are not in a committed relationship?  
   a. Yes  
   b. No  
   c. Depends  
   d. I do not know

9. Is it okay to have more than one sexual partner at the same time?  
   a. Yes  
   b. No  
   c. Depends  
   d. I do not know

10. Is love essential in order to have sex?  
    a. Yes  
    b. No  
    c. Sometimes  
    d. I do not know

11. Do you feel pressure to have sexual intercourse?  
    a. Yes (Continue to question 12)  
    b. Sometimes (Continue to questions 12)  
    c. No (Continue to question 13)

12. If you feel pressure to have sexual intercourse, who do you feel pressure from? (Circle all that apply)  
    a. Friends  
    b. Boyfriend/Girlfriend  
    c. Family  
    d. Television/Film  
    e. Internet  
    f. Books/Magazines  
    g. Music  
    h. Church  
    i. Other: __________________

13. Do you feel pressure to not have sexual intercourse?  
    a. Yes (Continue to question 14)  
    b. Sometimes (Continue to question 14)  
    c. No (Continue to question 15)
14. If you feel pressure to not have sexual intercourse, who do you feel pressure from? *(Circle all that apply)*
   a. Friends
   b. Boyfriend/Girlfriend
   c. Family
   d. Television/Film
   e. Internet
   f. Books/Magazines
   g. Music
   h. Church
   i. Other: ________________________

15. Is it okay for a woman to say no to sex?
   a. Yes
   b. No
   c. Depends
   d. Unsure

16. Is it okay for a man to say no to sex?
   a. Yes
   b. No
   c. Depends
   d. Unsure

17. How many of your classmates that are girls do you think are having sex?
   a. None
   b. 1-2
   c. 3-5
   d. 6-10
   e. 10+

18. How many of your friends that are boys do you think are having sex?
   a. None
   b. 1-2
   c. 3-5
   d. 6-10
   e. 10+

19. Do your friends use birth control?
   a. Yes
   b. No
   c. Unsure

20. What type of birth control do you think your friends use? *(Circle all that apply)*
   a. Condom
   b. Birth Control Pill
   c. Birth Control Injection
   d. Withdrawal (pulling the penis out before ejaculation)
   e. Abstinence
   f. Intrauterine Device (IUD)
   g. Rhythmic planning or safe period
   h. Other: ________________________

21. Does your religion think that it is acceptable to use birth control?
   a. Yes
   b. No
   c. I am not religious
   d. Unsure

22. Do you think that condoms reduce sexual pleasure?
   a. Yes
   b. No
   c. Unsure

23. Who should initiate sex?
   a. The man
   b. The woman
   c. Both
   d. Unsure

24. Who is responsible for preventing an unplanned pregnancy?
   a. The man
   b. The woman
   c. Both
   d. Unsure

25. Do men have to use force to have sex?
   a. Yes
   b. No
   c. Depends
   d. Unsure

26. Do women have to use force to have sex?
   a. Yes
   b. No
   c. Depends
   d. Unsure
27. Is it acceptable for a man to hit his wife?
   a. Yes
   b. No
   c. Depends
   d. Unsure

28. Is it acceptable for a woman to hit her husband?
   a. Yes
   b. No
   c. Depends
   d. Unsure

29. Is physical violence acceptable in order to have sex?
   a. Yes
   b. No
   c. Depends
   d. Unsure

30. Is it a man’s responsibility to care for any children that result from an unwanted pregnancy?
   a. Yes
   b. No
   c. Depends
   d. Unsure

31. Is it a woman’s responsibility to care for any children that result from an unwanted pregnancy?
   a. Yes
   b. No
   c. Depends
   d. Unsure