ABSTRACT

OBJECTIVE. To identify factors associated with unprotected sexual activity in females under the age of 15 years.

METHODS. Cross-sectional observational study of sexually active adolescents under the age of 15 seen at a public outpatient gynecology clinic. Data were collected by means of semi-structured interviews (personal information and data on sexuality), clinical examination, and laboratory tests for diagnosis of sexually transmitted infections. Data were analyzed by frequency testing, association of variables (with p < 0.05) and multiple correspondence analysis.

RESULTS. One hundred sexually active adolescents between the ages of 11 and 14 were interviewed and examined. Of these, 71% declared themselves black; one-third were behind in school; 80% began sexual activity before the age of 13; 58% reported having been victims of violence within the family environment, and 13% had suffered sexual abuse; 77% did not use condoms regularly; and 22% had STIs. Unprotected sexual activity was more frequent with first sexual intercourse before the age of 13, commercial sexual exploitation, multiple sexual partners, intrafamily violence and school delay, as well as black race, unexpected pregnancy, and STIs.

CONCLUSION. The multiple types of violence suffered by teenagers, including structural, intrafamily, and sexual violence, increase their vulnerability to early, unprotected sexual activity and to STIs and unexpected pregnancy. The synergistic effects of poverty, low educational achievement, and low self-esteem reduces the odds that adolescents will build the tools required for self-protection and exposes them to further victimization outside the family environment.

found an association between poverty/violence/female gender and increased risk of STIs/AIDS. Women are submissive during sexual intercourse, and know less about their bodies than do men. The systemic violence of society, in which opportunities are not equal for all, engenders other forms of violence, and evidence clearly shows that social inequalities are associated with increased vulnerability to STIs/AIDS. In societies with high levels of systemic violence (such as Brazilian society), violence is also present in the family setting and in interpersonal relationships, including intimate relationships.

Violence against women is common in Brazil, and is usually the product of unequal gender relations in which men hold greater power and use this circumstance to impose their will. The additive effect of these two conditions—gender violence and biological and psychosocial immaturity—has contributed to a reversal in the gender distribution patterns of the AIDS epidemic and of other STIs. In 1986, the male-to-female ratio of AIDS-affected individuals was 15:5:1. By 2005, this ratio was down to 1:5:1, and, as mentioned above, the number of girls with AIDS aged 13 to 19 years had already exceeded that of infected boys in the same age range.

The present study sought to identify which factors co-occurred most frequently with unprotected sexual activity in female adolescents under the age of 15 seen at the NESA-UERJ Outpatient Gynecology Clinic and provide inputs for public health policies directed at this segment of the population.

**population and methods**

This is a cross-sectional observational study. Data were collected by means of semi-structured interviews and clinical and laboratory testing for diagnosis of sexually transmitted infections (STIs). The target population comprised sexually active female adolescents under the age of 15 years who sought care at the NESA-UERJ Outpatient Gynecology Clinic, regardless of presenting complaint or reason for seeking medical attention. One hundred interviews were conducted in this convenience sample between August 2005 and June 2007. All adolescents meeting the study criteria were invited to take part. The exclusion criteria consisted of failure to undergo the proposed physical examination and laboratory tests or respondent inability to understand the interview questions.

Adolescents were interviewed at the NESA-UERJ offices, in the presence of the investigator alone, to ensure privacy. The interview followed a script containing open- and closed-ended questions that inquired on topics such as personal information, family history, puberty and puberty-related issues, sexual activity and practices, sexual abuse, contraception, biological and psychosocial immaturity, and psychological intimidation. Relationship with sexual partners was defined as follows: “no affective ties”, when there was no affective relationship whatsoever (including sexual intercourse with “make-out” partners and “players”); “affective ties and no commitment” when the respondent had an affective relationship with the partner, but engaged in sexual intercourse only occasionally, in so-called “hook-ups”; and “affective ties and commitment” when partners were referred to as “boyfriends”. Sexual practices were also assessed as to frequency of intercourse, use of protective measures, and gender and number of partners, in addition to a series of questions on commercial sexual exploitation.

“Sexual abuse” was defined as any situation in which the respondent was used against her will or without consent for the sexual gratification of an adult or older adolescent, whether by fondling, inappropriate touching of the genitals, breasts, or anus, sexual exploitation, voyeurism, pornography, exhibitionism, and penetrative or non-penetrative sexual intercourse. Sexual abuse was identified when respondents reported situations consistent with these descriptions, when asked whether they had ever been abused or when reporting their sexual experiences.

Interviews were followed by physical examination and laboratory testing in all respondents. Diagnosis of STIs followed the syndrome-based approach recommended by the STD / AIDS Guidance Manual of the Brazilian Federation of Obstetrics and Gynecology Associations (Federação Brasileira das Associações de Ginecologia e Obstetricia, Febrasgo), aided by Gram staining, gonorrhea culture, and Pap smear for screening of subclinical lesions indicative of HPV infection, such as low grade squamous intraepithelial lesion (LSIL) or high grade squamous intraepithelial lesion (HSIL). VDRL and HIV ELISA (with Western blot confirmation of all positive results) were also performed for syphilis and HIV screening respectively. Hepatitis B serology was not performed, as it is unavailable at the Hospital Universitário Pedro Ernesto Immunology Laboratory.

Data were evaluated using multiple correspondence analysis (MCA). This method involves a multivariate study of categorical data that allows joint observation of a vast number of variables, identifies factors that can be used in grouping various characteristics, and attempts to establish a profile capable of suggesting a predisposition to certain situations. Analysis was conducted in the Stata/SE 8.0 for Windows software package, which performs various mathematical procedures to define the best organization of variables and allocate variables into a four-quadrant plot divided by two axes. Results are interpreted by observation of clusters formed by variables. These clusters represent relations between the variables; the closer they are on the plot, the greater the frequency of their co-occurrence. The two axes separate variables plotted on the left upper quadrant from those in the right lower quadrant and those in the right upper quadrant from those in the left lower quadrant, establishing groups of variables with opposing profiles. This stage gives an overview
of the study, allows verification of some a priori knowledge hypotheses, and provides an outline of profiles in the study population. It also gives a representation of the absolute contribution of each variable according to its distance from the axis, both towards the positive and towards the negative side; the greater the distance, the greater its significance in the interpretation of results.

The present study was approved by the UERJ Hospital Universitário Pedro Ernesto Research Ethics Committee and was conducted in compliance with the ethical principles set forth in the Declaration of Helsinki. All respondents and their legal guardians signed Free and Informed Consent forms prior to participation in the study.

RESULTS

One hundred sexually active female adolescents under the age of 15 were assessed. The mean duration of each interview was 47 minutes. Mean age was 14 years and 1 month (range, 11–14 years). According to self-reported race/ethnicity, 71% of respondents were Afro-Brazilian (self-reported skin color, black or brown) and 29% were white. None reported indigenous or Asian ethnicity. Concerning socioeconomic level, many participants were unaware of their family income, but the fact they sought care at a public outpatient clinic suggests they belonged to the lower socioeconomic strata.

Nearly one-third of adolescents in the study sample were behind in school. Eighty per cent had a mother figure present at home, whereas only 41% had a father or father figure present. Inquiry as to violence revealed that 58% reported having been victims of intrafamily violence; 13% had been sexually abused, whether at home or in other environments, most often by someone known. A family history of alcoholism was reported by 44% of respondents, and 43% stated that relatives engaged in consumption or trade of illegal drugs. The mean age of first sexual intercourse was 13 years, and in 80% of respondents, the time elapsed between start of intimate relationship and first sexual intercourse was one year or less. In 63% of respondents, first sexual intercourse occurred more than one year after menarche. Regarding first sexual partner, 72% reported losing their virginity to boyfriends, and 46% of partners were over the age of 18. Fourteen adolescents in the sample were already in a conjugal relationship.

A concern with safer sex measures was reported by 93% of respondents; 44% feared only pregnancy, 9% feared only STIs, and 40% feared both. Nonetheless, 77% of respondents reported only irregular condom use, and the incidence of STIs in the study sample was 22%.

Twenty-two respondents admitted to having had two or more sexual partners in the past year. Eighty per cent had a mother figure present at home, whereas only 41% had a father or father figure present. Inquiry as to violence revealed that 58% reported having been victims of intrafamily violence; 13% had been sexually abused, whether at home or in other environments, most often by someone known. A family history of alcoholism was reported by 44% of respondents, and 43% stated that relatives engaged in consumption or trade of illegal drugs. The mean age of first sexual intercourse was 13 years, and in 80% of respondents, the time elapsed between start of intimate relationship and first sexual intercourse was one year or less. In 63% of respondents, first sexual intercourse occurred more than one year after menarche. Regarding first sexual partner, 72% reported losing their virginity to boyfriends, and 46% of partners were over the age of 18. Fourteen adolescents in the sample were already in a conjugal relationship.

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between variables on the plot, the greater the frequency of co-occurrence. For clarity, variable clusters were circled on the plot; in the event of overlap, a callout with the list of variables contained in the cluster was placed beside it.

Forced first sexual intercourse was reported by 12% of interviewees. The absence of affective ties with the partner at first sexual intercourse (including first sexual intercourse with a “make-out” partner or “player”) was reported by 12% of adolescents; first sexual intercourse with affective ties to the partner but no commitment (including so-called “hook-ups”) occurred in 16% of cases; and loss of virginity to a committed partner (“boyfriend”) was reported by 72% of interviewees. Figure 1 shows that forced onset of first sexual intercourse and absence of affective ties is associated with sexual abuse. Prime examples of this association included such testimonials as: “My neighbor took me to his house and forced himself on me. He told me he would hit me if I screamed or told anyone”. Likewise, to the left of the chart, clusters show proximity between the variables earlier sexual initiation (less than one year after menarche or before menarche), shorter relationship duration, lack of commitment to partner, partner age >18 years, intrafamily violence, and black ethnicity. This group included one respondent that ran away and started living on the streets after constant, longstanding physical abuse at home. While homeless, she was raped by two men at the age of 11 and once again at 13. At the time of the interview, the respondent had had 11 partners, was infected with HIV, and lived at a shelter with her son.

The following variables were clustered past axis 1 of the plot: consensual first sexual intercourse, later onset of sexual intercourse, sexual intercourse after closer relationship with and greater commitment to the partner, first sexual intercourse more than one year after menarche, first sexual intercourse with a partner closer in age, absence of violence in the family environment, and white race.

Figure 2 shows two clusters on the left. The first shows a close relationship between commercial sexual exploitation, group sex (sexual intercourse with more than two partners simultaneously) and relationships with male and female partners alike. The cluster below it shows forced first sexual intercourse, sexual abuse, STD infection, multiple partners (more than two over the past 12 months), pregnancy, conjugal life, falling behind in school, no awareness of the need for safer sex practices, irregular condom use, intrafamily violence, and black race.

Several remarkable testimonials were provided in this group, such as “My cousin found out... you know... I did it for money. He said family gets it for free and forced himself on me”. A teenager raped at 12 by her uncle, a 23-year-old drug...
dealer, stated: “My uncle was high and made me a woman, now I do it for a living, but my mother hits me whenever she finds out I’m going to the clubs”. At 14, she was a victim of commercial sexual exploitation, engaged in group sex and sexual intercourse with male and female partners, was a frequent user of illicit drugs and alcohol, had had one abortion and was diagnosed with syphilis.

In another case, the respondent—also aged 14 at the time of the interview—had her first sexual intercourse at the age of 11, raped by her 22-year-old neighbor, who molested her repeatedly until she became pregnant at 12. She told no one of what had happened until she talked to a therapist two or three months after giving birth. She had had six partners in the 12 months preceding the interview and did not use condoms regularly. A Pap smear showed Grade I cervical intraepithelial neoplasia (CIN 1).

One of the respondents, father unknown, lost her stepfather (killed by a rival drug dealer during a gang war) at the age of two. She had been raised by her mother, a cocaine-dependent prostitute. The interviewee spontaneously reported: “My mother took me on her tricks since I was four, to give blow jobs, but I only started really having sex and snorting cocaine with her when I was nine”. At the age of 12, after the death of her mother due to complications of AIDS, she moved in with her grandmother, who, powerless to prevent her from leaving the house at will and being exposed to the danger of sexual exploitation, chose to commit her to a shelter when she was 13.

Further analysis of the chart shows that adolescents who were not behind in school had not been exposed to violence, were white, used condoms regularly, had few partners, and had never become pregnant or contracted an STI.

**DISCUSSION**

The present study shows that most respondents experienced various types of violence that placed them at risk of

<table>
<thead>
<tr>
<th>Variáveis</th>
<th>%</th>
<th>Variáveis</th>
<th>%</th>
</tr>
</thead>
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<tr>
<td>Abuso sexual</td>
<td>Não 87</td>
<td>Relação com parceiros de ambos os sexos</td>
<td>Não 94</td>
</tr>
<tr>
<td></td>
<td>Sim 13</td>
<td></td>
<td>Sim 6</td>
</tr>
<tr>
<td>Atraso escolar</td>
<td>Não 69</td>
<td>Sexo grupal</td>
<td>Não 92</td>
</tr>
<tr>
<td></td>
<td>Sim 31</td>
<td></td>
<td>Sim 8</td>
</tr>
<tr>
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<td>Não 94</td>
<td>Situação conjugal</td>
<td>Nunca teve 86</td>
</tr>
<tr>
<td></td>
<td>Sim 6</td>
<td></td>
<td>Tem/teve 14</td>
</tr>
<tr>
<td>Faixa etária da sexarca</td>
<td>&lt;=13 anos 8</td>
<td>Situação da sexarca</td>
<td>Forçada 12</td>
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<td></td>
<td>&gt;=13 anos 92</td>
<td></td>
<td>Espontânea 88</td>
</tr>
<tr>
<td>Intervalo sexarca X menarca</td>
<td>&lt;=1 ano 13</td>
<td>Tempo de relacionamento p/sexarca</td>
<td>&lt;=1 ano 80</td>
</tr>
<tr>
<td></td>
<td>&gt;1 ano 87</td>
<td></td>
<td>&gt;1 ano 20</td>
</tr>
<tr>
<td>Já engravidaram</td>
<td>Não 85</td>
<td>Uso regular de preservativo</td>
<td>Não 77</td>
</tr>
<tr>
<td></td>
<td>Sim 15</td>
<td></td>
<td>Sim 23</td>
</tr>
<tr>
<td>Maioridade do parceiro</td>
<td>Não 54</td>
<td>Violência na sexarca</td>
<td>com vínculo e com compromisso 16</td>
</tr>
<tr>
<td></td>
<td>Sim 46</td>
<td></td>
<td>com vínculo e com compromisso 72</td>
</tr>
<tr>
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<td>Não 78</td>
<td>Violência intrafamiliar</td>
<td>Não 42</td>
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<td></td>
<td>Sim 58</td>
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<tr>
<td>Paciente com DST</td>
<td>Não 78</td>
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<td></td>
<td>Sim 22</td>
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<tr>
<td>Preocupação com contracepção</td>
<td>Não 16</td>
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</tr>
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<td>Raça / etnia</td>
<td>branca 29</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>negra 71</td>
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</tbody>
</table>

Tabela - Prevalência das variáveis
earlier sexual activity and, consequently, STIs or unwanted pregnancy. Those with sexually transmitted infections were also the ones most perversely victimized.

The co-occurrence of various forms of violence and unprotected sexual activity in adolescents has been previously reported in the literature. The association between early onset of sexual intercourse and sexual abuse described by Edgardh is supported by the results of the present study. Both form the type of sexual and gender violence to which these adolescents are most exposed, alongside forced sexual initiation (sometimes before menarche), sexual intercourse with no affective ties in the context of a short-lived or absent relationship, and lack of condom use.

The prevalence of STIs and unexpected pregnancy was highest among respondents self-identifying as having black and brown skin color. This may signal poorer living conditions for Afro-Brazilian girls, which, according to other authors, are due to the racial discrimination to which this segment of the population is subjected in the country. This leads to greater vulnerability to STDs/AIDS and unexpected pregnancy and higher maternal mortality rates.

Sexual abuse and rape, particularly at the stage of life in which one’s personality is still being shaped, lead to psychological traumas with myriad potential consequences, such as unsafe sexual practices and greater vulnerability to commercial sexual exploitation. In addition to the possibility of pregnancy, depression, or even suicide, adolescents exposed to these and other types of violence are more likely to engage in or encounter poor condom use, and are thus more vulnerable to sexually transmitted infections.

In parallel, other forms of violence were also found, such as intrafamily violence, which often occurred concomitantly with a history of alcoholism, illegal drug use or involvement with the illegal drug trade. Violent acts perpetrated by family members, mentioned countless times by the girls in this group, were often practiced under the guise of “educating” or “correcting” undesired behavior, corroborating the findings of prior studies. Psychological violence, as other forms of violence, gives rise to feelings of powerlessness and undermines self-esteem, making it difficult for young women to find their own way and turning them into easy prey for the desires and objectives of others. Faced with this hostile environment, adolescents are compelled to seek a better life outside the home, and parental inability to support them eventually enables this stance. Patients driven to a life on the streets in search of freedom from an adverse environment were then faced with other threats and forms of violence. Some appear to view conjugal relationships as an opportunity to break free from these issues and start a new phase in life, in another setting. However, some simply trade one violent environment for another, and the cycle begins once again.

Unlike adolescents engaging in unprotected sexual activities, who were exposed to more damaging and frequent instances of violence, those from better-structured family backgrounds, with greater interaction and affection, had safer sexual initiations and were aware of the need for safer sex practices to prevent pregnancy and sexually transmitted diseases.

**Conclusion**

The joint occurrence of several forms of violence, including structural, intrafamily, and sexual violence, increases the vulnerability of adolescent girls to earlier, unprotected sexual activity and, consequently, STIs and unexpected pregnancy. The synergistic effects of poverty, low educational achievement, and low self-esteem reduces the likelihood that these girls will develop the necessary tools for self-protection, and exposes them to victimization outside the family environment. Unwanted pregnancy, coupled with the often insidious and subclinical manifestations of sexually transmitted diseases and physical and psychological trauma, require objective and purposeful preventive conduct in order to avoid delayed and costly hospital treatment, which is also often unable to prevent major sequelae.

The present study revealed the environment of violence to which adolescents under the age of 15 in lower socioeconomic strata are often exposed, and exposed the pressing need for providing greater care for this segment of the population. The results reported herein may serve as inputs for the implementation of public policies that meet the specific demands of this population and contribute to the development of prevention strategies and strategies to foster health in adolescence.

The population has yet to become aware of the legal framework available for facing the issue of violence against adolescent women, and the relevant laws are rarely acted upon to protect this segment of the population. Noteworthy laws addressing the matter include the Brazilian Child and Adolescent Statute and Law no. 11,340 (known as the “Maria da Penha Law”). The latter, enacted in 2006, was created in an attempt to curb domestic and intrafamily violence against women. The Statute compiles provisions on child and adolescent rights and provides mechanisms that seek to protect minors and ensure their healthy growth and development. Failure to follow the procedures described in these laws can lead to irreparable damage.

It bears stressing that violent acts perpetrated against adolescents are often not reported to the authorities, whether by the victims themselves or by the people who know them, due to the social stigma attached or to fear of threats from the perpetrator. Underreporting may also be due to growing mistrust in child protection services, leading to a gradual reduction in notifications to Child Protection Boards, as well as the possibility that these agencies may create a sort of “filter” due to the large number of complaints, prioritizing “highly serious” occurrences only. Furthermore, some healthcare professionals are wary of involvement in legal issues, and may also fear for their own safety when faced with “hostile families”.

Despite the limitations inherent to any investigation conducted on a convenience sample, the results of the present study provide valuable inputs for public policies seeking to reduce the prevalence of STIs/AIDS in this segment of the population, by pointing out the factors that most often co-occur and lead adolescents to engage in early, unprotected sexual activity.

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