



# The Impact of Sex Education among Brazilian Adolescents

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## Research Article

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## Abstract

By entering into the reality of public schools in Juiz de Fora (MG), the present study aims to describe the scenario of adolescent's sexual experience altogether with its risks and consequences, considering previous researches about Sexually Transmitted Infections (STIs) rates among the youth. One particular topic that needs attention is the female context, due to the fact that these diseases often have more severe consequences in women's bodies, such as pelvic inflammatory disease (PID), ectopic pregnancy, and cervical cancer. Based on the assumption that well-informed people are more likely to adopt positive and healthy habits for themselves and considering the lack of knowledge on the topic among young Brazilians, schools symbolize an excellent place for having an informational dialogue. Therefore, the objective of the article is to describe the relation between health and education in the aforementioned scenario, from the perspective of the university extension project "Saber Viver", conducted in the Medicine School at the Federal University of Juiz de Fora (UFJF). It expands the merely preventive methodology centered on biology into a more human approach, compatible with the socio-cultural context of the young audience. The project is also a key tool to guide public health policies that aim at reducing rates of Sexually Transmitted Infections (STIs).

**Keywords:** Sexually transmitted infections; Sex education; Health promotion

**Abbreviations:** STIs: Sexually Transmitted Infections; PID: Pelvic Inflammatory Disease; CC: Cervical Cancer; HPV: Human Papilloma Virus; WHO: World Health Organization; FHS: Family Health Strategy.

## Introduction

By understanding the concept of health as a state of physical, mental and social well-being, and not only as the absence of disease, it is possible to identify aspects in human life that need to be considered for the wellness of the population, such as the access to knowledge. The close link between health and education is revealed by the fact that well-informed people are able to make better decisions,

reverting to the benefit of their health. Thus, is essential that health knowledge goes beyond the hospital territory and takes place in an environment closer to the community. This way, activities focusing on risk behaviors and disease prevention can shape individual and interpersonal attitudes.

In this scenario, educational centers symbolize an excellent opportunity for the confluence of education and health, especially in the context of young Brazilians. These places enable the occurrence of initiatives involving health education on relevant topics to this age group, such as Sexually Transmitted Infections (STIs). With regard to this issue, information is of utmost importance because it can impact in what Gillespie called a window of opportunities

[1]:

In a retrospective cohort of 75,273 high school students who participated in an STI screening program between 2003 and 2010. This study showed that the risk of HIV infection was at least three times higher in students with multiple gonococcal infections than students with no history of gonorrhea. Beyond that, among HIV- positive students, there was at least one year between the first STI and positive HIV test for 86 percent of girls and 96 percent of boys, suggesting a window of opportunity for preventive interventions.

In addition, the relevance of this action is directly related to the prevention of the severe consequences of these infections, especially in the female body. Among such repercussions, it is worth mentioning the increased risk of sterility, ectopic pregnancy, pelvic inflammatory disease, cervical cancer and congenital infections.

Accordingly, an excellent possibility for the propagation of knowledge within society is the university extension. This is because, once being committed to social transformation, it brings scientific knowledge to the population through its projects. So, this component of university education presents itself as an instrument that, acting in parallel with the public health system, diversifies the performance scenarios of the academic field in the social context.

Based on the relevance of the active methodology promoted by the university extension and on the importance of promoting the development of a healthy and conscious youth, the Saber Viver Project, conducted in the Federal University of Juiz de Fora, focuses on the dissemination of essential knowledge for the growth of young people. This is because, based on scientific data, the project addresses sexuality and STIs, with the main purpose of supporting a safe sexual experience for adolescents. In parallel, the students who compose the project apply their knowledge and expand their experiences when working on health promotion in Juiz de Fora (MG). Within this perspective, the present study intended to analyze the action field of that extension program with a focus on the influence of information for promoting public health.

### Methodology for Collecting Articles for the Study

A search was performed in the databases Up To Date, PubMed, Lilacs, SciELO and Google Academic for English-language and Portuguese-language articles containing the key words "sex education", "women's health", "sexarche", "ISTs" and "adolescence". Articles focusing on relevant contents were chosen for further review. Subsequently, a selection was made based on the relevance of the manuscript.

### The Anachronism between Sexarche and Responsibility

Adolescence is ratified in society as a period of transition marked by emotional instability and rebellion, and some difficulties are often experienced during decision-making, internal conflicts and the need to take part in some social group [2]. Such personality issues, when related to biological maturation and to the appearance of sexual characteristics, might intensify relevant vulnerabilities that involve this age group and impact public health [3].

In relation to the aforementioned, major epidemiological researches denounce a delay in the emergence of social responsibility, which is reflected in the sexual health of young people as it represents an unsatisfactory use of condoms and an early sexarche. In this context, according to the research "Youth, Behavior and STD / AIDS", four out of ten young Brazilians do not use a condom because they think it is unnecessary in a stable relationship, and three would be suspicious of their partner if he or she proposes the condom use [4].

Therefore, the vulnerability of adolescents to STIs is not only linked to biological determinants, but also to psychological aspects characterized by the perception of invulnerability, immortality and the influence of gender relations, factors that directly impact on the risk of transmitting these health problems [5]. For instance, an epidemiological survey carried out in Ribeirão Preto, São Paulo, revealed the lack of information about several STIs, with emphasis on syphilis and gonorrhea [6].

In the female context, repeated infections are common. In an observational study of urban women (14 to 17 years old), 25% were diagnosed with an STI within one year of the first sexual intercourse [7]. In addition, Surveillance in the United States suggests that approximately a quarter of all sexually active women have had an STI [8].

Furthermore, these data point to a delay in the development of responsibility, which is intricate to the increasing precocity of sexarche, since young people start their sexual life without the required information and care. Thus, it is evident that there is an anachronism between the beginning of sexual intercourse and the necessary responsibilities for such experience. In this scenario, we must understand that the knowledge needed for the practice of a safe sexuality is not limited to the recognition of the body as a physical element or to that of the sexual act itself. Additionally, information on STI prevention and contraceptive methods should also be used significantly [9].

Added to the lack of knowledge, individual risk behaviors and socio-political factors constitute risks that express the multidimensional character of this problematic. For example,

it is worth mentioning the hostile family environment, the poor educational system, the low quality of health services offered to this age group and the naturalization of some discourses and practices concerning gender roles. A study carried out in João Pessoa/Paraíba with adolescents, suggests that masculinity and gender issues have a negative impact on female sexual behavior, increasing their vulnerability to STIs [10].

The consequences of these biopsychosocial weaknesses are clearly pointed out in epidemiological studies: according to the Joint United Nations Program on AIDS, more than 50% of new HIV cases in the world affect young people aged 15 to 24 years. What is more, the World Health Organization (WHO) estimates that, in the age group of 15 to 24 years, in every 20 adolescents, one is affected by a STI (not including AIDS and hepatitis) every year [11].

Moreover, between 2017 and 2018, syphilis rates (primary and secondary) increased among male and female teenagers (from 10.1 to 10.9 and 3.2 to 4.3 cases per 100,000 inhabitants, respectively) as well as rates of genital chlamydia among female adolescents (from 3,265 to 3,307 cases per 100,000). These data highlights the consequences of their biopsychosocial weaknesses [8].

It is worth mentioning that the severe impact of STIs on reproductive health does not occur only episodically. Possible future consequences, whether related to the natural evolution of the disease or its sequels, are also severe, especially with regard to women's health.

### Women Deserve Special Attention in this Scenario

When talking about STIs, women's health deserves special mention, considering the relevant peculiarities involving the female body, which, together with the mechanism of disease pathology, can bring severe acute and chronic damage. It is known that the morphology of adolescent girls can be itself a risk factor. This is justified by the fact that several biological factors have been hypothesized to influence the susceptibility of this audience to the acquisition of STIs. According to Kleppa, et al. [12]:

One such factor is cervical ectopy or cervical immaturity, which refers to the area of ectocervix that is covered by columnar epithelium after puberty. Young women with immature cervical epithelium have higher levels of several cervicovaginal and regulatory cytokines and chemokines than women with mature cervical epithelium. Columnar epithelium is thought to be more susceptible than squamous epithelium (that replaces columnar epithelium upon maturation) to sexually transmitted organisms such as *N.*

*gonorrhoeae*, *C. trachomatis*, and HPV, although one study could not demonstrate an independent association of cervical ectopy with STIs among adolescent women.

In addition, the composition of the cervical and vaginal microbiome can influence adolescents' susceptibility to STIs, as it plays an important role in vaginal immune responses [13]. This microbiota is usually variable after puberty and after the first sexual experiences [14,15]. Considering the relationship between female physiology and the risk factor for acquiring STIs it is worth mentioning its consequences for the female audience, such as, infertility, pelvic inflammatory disease (PID), ectopic pregnancy, congenital infections and cervical cancer.

Infertility, which has been a growing reality, is associated with exposure to microbial agents, constituting a preventable cause. It is known, for example, that women with infections such as those caused by *Chlamydia trachomatis* and *Neisseria gonorrhoeae* can develop salpingitis and ovarian tube abscesses [16]. If not treated properly, they can progress to PID [17], which causes infertility in 20% of cases, in addition to ectopic pregnancy in 9% of cases [16,18,19].

Also noteworthy is the problem involving congenital infections which, amid the increasing incidence of certain STIs among young women, such as syphilis, has been presented as a public health problem. Furthermore, infection by STIs can cause the development of cervical cancer (CC), which is directly associated with infection by the human papilloma virus (HPV).

Thus, the aforementioned reality points to an alarming scenario involving the lack of knowledge among adolescents. Thereby, the need to invest in sex education programs has been presented as a public health matter, aiming at the prevention and improvement in the world rates of STIs [20].

### Schools as a Field of Action

The knowledge gap of adolescents in relation to STIs may be related to the lack of communication and difficulty in accessing health services. Thus, providing spaces for discussion and clarification of doubts is of great importance so that there is adequate guidance through the school, with a focus on disease prevention through the dissemination of information [21].

Although there are several sources of knowledge, some studies indicate that the family is hardly ever mentioned as a provider of information about sexuality and STIs [22]. It is known that parents have difficulties in approaching the topic of sexuality with their teenagers, as they themselves had no space for it in their youth [23]. Therefore, parents attribute

this role to the school and it, in turn, has certain challenges in fulfilling it, due to lack of whether human, financial or material resources [24].

One possible way to address this issue may be to implement quality sex education in schools. It can be done through university extension projects that could expand their biology centered methodology to a more humane approach, compatible with the socio-cultural context of the young audience [25]. This is because the application of the exposed information depends on an individual commitment, which makes the approach to the emotions and desires of this audience extremely important [26].

Therefore, extension projects, such as Saber Viver, extend the health service to the educational environment, enhancing an exchange between health and education that promotes a more relaxed conversation, in order to bring the target audience closer to academics, enhancing the impact of the project and reaffirming the availability of health professionals towards them.

In this context, schools are presenting themselves as a favorable space for the performance of such extension projects, since besides ensuring access to a large number of young people, it complements the National Curriculum Parameters (PCN), which often provide only a transversal approach to the subject. Furthermore, in the school environment, the health demands of this age group are more likely to reveal themselves than in Basic Health Units (UBS) and hospitals [27].

At the same time, health promotion for adolescents is a challenge for public health professionals, since they do not enter health facilities like other age groups on a daily basis. Thus, care practices such as the Family Health Strategy (FHS) have revealed difficulties in linking adolescents to the proposed actions. Therefore, it is essential to implement strategies in places that are already present in their everyday life, especially schools [28].

It is concluded, therefore, that the articulation between the spheres of health and education, contributes to the approximation of health professionals with schools and the young public. This allows active participation and autonomy in the experience of sexuality on the part of adolescents, intervening positively in the challenges related to public health actions [3].

### **The Performance of the Project and the Methods Used**

The Saber Viver project, from the Federal University of Juiz de Fora (UFJF), started in March 2013 and extends

to the present day, having impacted the lives of countless young citizens. It was created with the purpose of presenting 9th grade students from public schools in the city of Juiz de Fora (MG) with issues related to sex education, such as exposing the risks of unprotected sexual activities, seeking to encourage safe practices.

Through lectures lasting between 30-45 minutes, medical students use audiovisual resources, such as songs and parodies developed on the subject, to clarify the topic. In addition, exhibition of illustrative slides about the diseases and information on transmission and treatment are used to exalt their risks and guide the students on how to proceed in case of contact with any of these infections. Two essential actions to be explained are the need to perform the Pap smear and to vaccinate from HPV. Also, is provided information about when and where to be vaccinated, in an appropriate way for that community.

According to the National Curricular Guidelines for Nine-Year Elementary Education (Opinion CNE / CEB No. 7/2010 and Resolution CNE / CEB No. 4/2010) [29], the performance of activities in educational institutions with health professionals is a broad strategy for disseminating information on sex education. In this sense, educational actions have attracted attention to the importance of sexual health through an innovative approach that arouses the attention and the essential interest of students in knowledge. The Saber Viver project reflects this scenario, since 80.6% of the young spectators attributed a score of at least 9 in 10 to the lectures given by the project [30].

Therefore, it is perceived that the project promotes young people's awareness, in addition to stimulating security and well-being in the experience of sexuality. Also in these events, after carrying out the activities, a questionnaire authorized by the Human Research Ethics Committee of the Federal University of Juiz de Fora (UFJF) (Opinion 188.819. CAEE 07929912.3.0000.5133) is delivered to each of the students for the collection of information, including: demographic and sociocultural characterization; psycho-affective behavior; and qualitative evaluation of the lectures. We avoid stigma by keeping those involved confidential. This information is subsequently used to carry out an epidemiological study.

### **The Presence of Stis in the Community Studied in Juiz de Fora**

The current trend regarding the presence of STI in Juiz de Fora does not differ from the reality observed in the rest of the world. This perception is based on the epidemiological report of Juiz de Fora [31], which indicates an increase in the number of notifications of syphilis cases.



In addition to the lack of knowledge about diseases and their risks, vulnerability and fragility are crucial in raising rates and worsening this problem. A survey carried out at the Federal Institute of Southeast Minas Gerais - Campus Juiz de Fora among students in the 1st, 2nd and 3rd years of high school showed that 26%, 10% and 12% of the students, respectively, said they did not know any STI [32]. This fact demonstrates a high rate of neglect with this portion of respondents, since this is the stage of life that the first sexual intercourse usually takes place. This population is subject to the spread of diseases such as syphilis, gonorrhea, herpes and others. Regarding the seriousness of the theme and the importance of prevention in relation to STIs, the flaw in the school's curriculum in terms of content about care, symptoms and other information shows a weakness in the knowledge formation of these young people.

The present work directly impacts the reality of these teenagers, by encouraging a culture of care for their sexual health. The presentations surpass individual concerns by drawing adolescents' attention to the caution in observing the body and genitals of their partners. Care goes beyond the use of condoms, it involves matters of self-knowledge and includes notions of sexual needs.

In an article published by FERREIRA, et al. [32], the authors emphasize the importance of students having ownership over the information about the disease, and not only having heard about it, an issue that can be solved by information campaigns for young people in the school environment or community. In this sense, the dialogue between young people from public schools and medical students from the local University, brings together exchange relations and encourages a safe space for solving doubts. Collective health is exercised in its essence: the academics return to society the knowledge received throughout their courses and the welcoming is evident; the young people are happy about getting attention and some have their mentality completely changed about taking care of their bodies and about their claims to sexual life.

### **Articulation between Teaching, Extension and Research in the Field of Public Health**

Academic institutions have 3 pillars in their structure: teaching, research and extension. The present project, considering the importance of such constituents, acts in a way to enhance its inseparability [33]. For this reason, such articulation is made explicit as we go through the stages of performance of the Saber Viver project. At the population level, extension projects take part in the social responsibility, transmitting information and assisting the population, aiming at improving citizens' quality of life.

In the academic field, the benefits of extension are accomplished by providing a new acting space for students in order to understand the demands for knowledge of a wide and heterogeneous public. This model is based on active learning methodologies, by enabling students to apply the content acquired in the classroom, in addition to instigating a reflection on their social role in these scenarios [34].

The benefits for the target audience of the project go beyond the acquisition of knowledge for a safe sexual experience. With the application of a structured questionnaire to collect information, it was possible to outline a profile of adolescent students, with a focus on sexual health.

The epidemiological survey obtained provides the city with scientific contributions and assists in the planning of public policies for this population. The collected data allowed the elaboration of a study which results corroborates the world literature. Some figures deserve to be highlighted, such as the fact that although 26.2% of the 9th year adolescents interviewed have already started their sexual life, the 81.3% rate of condom use is unsatisfactory [30].

Thereby, this information reinforces the need for these young people to be seen as vulnerable within the scope of public health policies in Juiz de Fora (MG). At the same time, the study can foster new academic projects, enabling the expansion of teaching practices and their link with the health sector, promoting care practices for young people.

### **Conclusion**

Although there is a certain impression that STI prevention is widely disseminated, contact with this part of the target audience of these projects shows that there is still a huge gap between what is expected to be achieved with them and what actually happens. This is seen mainly in the contact with young adolescent women, who during the project demonstrated very short knowledge about what makes up their sexual experiences.

It is noted, therefore, that the practice of the project in question is of paramount importance for the entire local community, especially considering that it acts in a window of opportunities propitious impact young people who are starting the sexarche. It is, thus, a tool of social transformation capable of palpably transforming the rates of STIs in the city. Hence, the resources and information coming from the University make it possible for education to leave the theoretical field so that knowledge can be applied in the population reality, making the dialogue between teaching and health notorious.

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