

Research Article

Prevention of Sexually Transmitted Infections in Cuban Adolescents After COVID-19

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Abstract

Introduction: After COVID-19, an increase in the reporting of STIs in adolescent populations is observed. **Objective:** To characterize some behaviors related to sexual and reproductive health and STI prevention in a group of Cuban adolescents. **Method:** a cross-sectional quantitative study was carried out with adolescents from 15 municipalities selected from the three regions of the country. Non-probabilistic quota sampling was applied due to the epidemiological conditions and restrictive measures imposed by the pandemic. An instrument with 77 closed and open questions was designed and validated to output the identified variables. **Results:** The use of any contraceptive method is not always part of the context of the first sexual relationship; it is often used after a first unwanted pregnancy, interrupted or not, or after suffering from an STI. Among the main reasons for not protecting yourself are trust in your partner and stability. Information and knowledge about STIs is insufficient. Some prefer to hide their diagnosis to avoid rejection or accusations. Discriminatory manifestations are observed towards people with STIs or HIV. **Conclusions:** COVID-19 constituted an adverse scenario related to the prevention of STIs in adolescents. Risky sexual practices were incorporated into this scenario of isolation and restriction of movement. It is imperative to incorporate innovative and attractive ways to protect sexual health and prevent STIs in Cuban adolescents.

Keywords

Adolescents, Sexual Behaviors, COVID-19, Sexual Health, Stis, Prevention

1. Introduction

The United Nations Children's Fund (UNICEF) defines adolescence as a fascinating and complex stage of life [1]. It is a period of searching for new experiences associated with higher levels of rewarding stimulation, which often causes adolescents to engage in risky behaviors, without considering the results or future consequences [2, 3].

In the study of adolescence, several authors affirm that during this stage susceptibility to the influence of peers increases, especially between 15 and 18 years of age. Also,

relationships with parents alter and begin to be considered an area open to discussion and negotiation [3, 4].

Likewise, the sexual sphere reaches new meanings at this stage of life. They achieve their first romantic relationships, begin to interact with partners, which helps to reaffirm their identity. The beginning of sexual activity happens with greater or lesser intensity and with it, questions, curiosities, doubts, tensions, insecurities and conflicts arise. All of which happens with more or less harmony, depending on the life path of each

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adolescent, and the adult support they have had; whether or not the encounter with one's own self, with one's identity, is favored [4].

In the research "Cuban adolescents and young people in the family and couple spheres" - developed by researchers from the Center for Youth Studies (CESJ) - it is recognized that: "... in adolescence, love life takes on special importance. Interest in relationships is more focused on physical and sexual aspects than on the emotional elements that a true loving relationship implies" [5].

According to the results report of the 2019 Multiple Indicator Cluster Survey (MICS6), among the most common behaviors in adolescence are unprotected penetrative sexual relations, the main cause of the presence of Sexually Transmitted Infections (STIs) in these ages [6].

STIs are considered pandemics and are proposed in the Sustainable Development Goals for their elimination by 2030. Much of the burden of STIs is among adolescents and young adults. Young people aged 15 to 24 are only a quarter of sexually active people worldwide, however, they represent half of the incidence of STIs [6, 7].

According to a report issued by the World Health Organization (WHO) in 2023, the human immunodeficiency virus (HIV), viral hepatitis and sexually transmitted infections collectively cause 2.3 million deaths and 1.2 million cases of cancer annually and continue to represent a significant burden for public health around the world [8]. A statement from the Center for Disease Control and Prevention (CDC) reports that in the United States the reporting of all STIs increased between 2020 and 2021 [6]. In the Latin American and Caribbean region, register approximately 11,000 cases a year of these infections among adolescents and young people [9].

In Cuba, STIs represent a health risk, particularly in the adolescent population [10]. After COVID-19, an increase in the notification of syphilis, condyloma acuminatum and genital herpes is observed at all ages with emphasis on the youngest ones [11, 12]. The complications of STIs, especially when the diagnosis is not timely and are not treated adequately, can cause negative repercussions on the individual's health, ranging from neoplastic transformation to infertility [9], which is of vital importance in the current context. Cuban demographic [7].

Research in this regard agrees that low risk perception in adolescence and unprotected sexual relations are the main cause of the presence of STIs at these ages. This is influenced by frequent partner changes, transactional sex, and other sexual practices that are far from responsibility [13-16].

According to the results report of the HIV Prevention Indicators Survey published by the ONEI (2019), between the ages of 12 and 14, only 6.3% of adolescent's report having had sexual relations; at 15 years old, around a third; and at 18 years old, 75.3% acknowledge having carried out some penetrative sexual practice. The highest proportions of ignorance about STIs are recorded at these ages; showing comprehensive knowledge below 40%. An example of this is that: 30%

of the adolescent population still believes that mosquitoes transmit HIV; 50% consider the probability of becoming infected with HIV remote; Knowledge about the availability and diversity of modern contraceptives is low, and there is lack of knowledge about the existence of emergency contraception [17].

Low proportions of adolescents are identified who report manifestations of rejection towards people with HIV, especially the group between 12 and 14 years old. However, the ONEI (2019) study indicates that three out of every five adolescents from this same group report dissimilar attitudes of rejection towards men who have sex with men (MSM), showing a reproduction of discriminatory and stigmatizing patterns that They manifest themselves in families. Other elements identified are the search for information in erroneous sources; Barriers persist in accessing sexual and reproductive health (SRH) services, whether real or perceived by them, access to contraceptives (non-condoms) and HIV testing. Furthermore, adolescents report perceiving a lack of confidentiality and privacy in health services. They recognize the gradual increase in the incorporation of risky sexual behaviors, such as: unprotected anal sex, group sex, introduction of a third person into the relationship, transactional sex practices, addictions; as well as limited skills to manage their health [17]. These behaviors contribute directly or indirectly to the increase in STIs at these early ages of life with repercussions, in many cases, in future stages.

2. COVID-19 Times, a Decisive Experience

During the COVID-19 pandemic, the response of many countries to STIs and HIV slowed down, as programmed in previous years. The severity and high mortality of this pandemic removed STI prevention agendas from the focus of priorities, demanded the search for preventive alternatives, decreased screening, the number of HIV tests performed, the acquisition of supplies and treatments, among others. essential aspects to manage effective prevention [18]. In Cuba, despite enormous efforts, the entry into the country of sexual health supplies such as contraceptives and condoms was deeply affected.

Some researchers pointed out that during the pandemic years, adolescents were exposed to variable but permanent levels of stress due to many factors, including fear of contagion. Furthermore, forms of mobility restriction significantly decreased social interaction activities, face-to-face contact with peers and other instances of recreation, fun and physical activity. All fundamental for the consolidation of self-esteem, personal identity and social skills that support adolescent psychological well-being [19-24].

Studies carried out in the last five years, a period that includes the pandemic scenario, have identified some trends, non-responsible behaviors and gaps that must be addressed,

among which are the early start of coital relations, the inconsistency in the use of the condom, the fundamental rejection of men to use it; the association of sexual relations with the ingestion of alcohol and other drugs; weakened intra-family relationships, gaps in comprehensive sexuality education, among other issues exacerbated in the context of COVID-19, where these aspects were probably neglected in this particular environment of the pandemic [25-34].

Faced with this reality, the authors answered the following questions: What are the most frequent characteristics related to the SRH of a group of Cuban adolescents, after COVID-19? How do some behaviors related to the prevention of STIs manifest themselves in a group of Cuban adolescents, after COVID-19? GENERAL OBJECTIVE: Characterize sexual and reproductive health behaviors and STI prevention in a group of Cuban adolescents, after COVID-19.

3. Method

A quantitative cross-sectional study was carried out between the years 2022 (year of the new normal) and 2023 (year of post-pandemic) in adolescent populations in selected municipalities (Guantánamo, Santiago de Cuba, Bayamo, Río Cauto, Sancti Spiritus, Cienfuegos, Santa Clara, Plaza de la Revolución, Arroyo Naranjo, 10 de Octubre, Cerro, Habana Vieja and Centro Habana).

Population and sample: The population or unit of analysis to be studied includes adolescents of both sexes, between 12 and 19 years of age, residing in the selected municipalities of the three regions of the country (West, Center and East). Intentional non-probabilistic sampling, by quota, was applied to apply the questionnaire due to the epidemiological conditions and restrictive measures imposed by the COVID-19 pandemic even at this stage. According to research experiences where the quota method has been used, the most relevant criterion is the equivalence in the distribution of the number to be able to carry out comparative analysis. For this study, a quota of approximately 60 adolescents was defined for each municipality, for a total of 800. This implied a distribution of 96 for each age subgroup, for the provinces of Ciego de Ávila and Santiago de Cuba; in Havana it was a total of 128 for each age subgroup. In all cases, an equitable distribution by sex was intended.

Questionnaire: A survey was designed that consisted of 69 closed questions and 8 open questions for a total of 77 questions. It was subjected to piloting, from which the version that was finally applied remained. This survey addressed topics such as self-esteem, consumption, sexual relations, sources of information, knowledge about STIs, among other aspects. A group of coordinators from the Youth for Life Network of the 13 municipalities that make up the project were prepared, who participated in a preparation for 2 days in March 2022, where all the questions with their respective complexities were explained and debated. for its correct understanding and subsequent application between April and June of the same year.

Validation: The constructed instrument underwent a validation process according to expert criteria to guarantee its objectivity, validity and reliability of the proposed instrument. The process was led by three experts who issued recommendations that were adopted in their entirety. Subsequently, a pilot study was carried out with the application of the instrument to 120 adolescents between 15 and 17 years old, from the Arroyo Naranjo municipality in Havana.

Ethical aspects: An informed consent document was prepared for the application of the instrument, which was also discussed with each of the participants for their better understanding of the importance of this process. The information obtained was treated with the greatest confidentiality and data privacy.

Document analysis: Different documents described below were subjected to a review and analysis process: research reports from centers that are dedicated to these topics, such as: National Office of Statistics and Information (ONEI), Center for Demographic Studies (CEDEM), National Center for Sexual Education (CENESEX), National Institute of Hygiene and Epidemiology (INHEM), Health Promotion and Disease Prevention Unit (PROSALUD), Center for Youth Studies (CESJ), Center for Psychological Research and Sociological Studies (CIPS), Faculty of Psychology and Department of Sociology, both at the University of Havana.

Analysis of the data obtained. The quantitative information obtained in the questionnaire was processed by the SPSS statistical package, version 18.0. The information resulting from the planned techniques was analyzed taking into account the gender and rights approach and other determinants such as skin color, area of residence (urban and rural).

Table 1. "DEFINITION OF STUDY VARIABLES".

VARIABLES	DEFINITIONS
Sexual and Reproductive Health	State of physical, emotional, mental and social well-being related to sexuality. It is not the absence of disease, dysfunction or disability. For sexual health to be achieved and maintained, the sexual rights of all people must be respected, protected and fully exercised. It constitutes a determining area in development and growth during adolescence (WHO, 2008, 2010, 2018) [7].
Adolescence	Stage of life that is between 12 and 19 years old. It is the transition period between childhood and adulthood. For the purposes of the research, we will work as First adolescence, the period between 12 and 14 years old. Second

VARIABLES	DEFINITIONS
	adolescence, between 15 and 19 years of age. (The WHO considers that adolescence begins at the age of 10) [8].
Sexually Transmitted Infections	Ailments caused by the exchange of sex-gold-genital fluids. They can cause symptoms and/or diseases that are transmitted from one person to another person with whom there is interaction. Its manifestations are diverse and can occur during asymptomatic periods. [7].
Knowledge	The information that the individual has in his or her mind, personalized and subjective, related to facts, procedures, concepts, interpretations, ideas, observations, judgments and elements that may or may not be useful, precise or structurable Alavi and Leidner (2003: 19). knowledge as the ability to solve a certain set of problems [34].

4. Results

4.1. Sociodemographic Data

Work was carried out in the three regions of the country, with the Central region being the most represented with 45.3%, followed by the Eastern region with 40% and the Western region with 14.7%. Biases related to the planned samples and the filling out of the questionnaires were evident, which implied unanswered questions and a drop in the sample, especially in Havana. The most represented municipalities were Villa Clara with 142 subjects, Cienfuegos with 121 and Sancti Spiritus with 88 respondents. The sample was made up of 775 adolescents.

The age group of 15 to 19 years reached the highest magnitude with 71.4%, while that of 12 to 14 had 25.3%. The school level with the greatest presence was high school with 32.6%, followed by middle school with 27.0%, being 10th.

and 9th. the degrees of greatest participation. According to gender, women distinguished themselves with 63%, while men reached 36.1%. Regarding occupation, the vast majority were students. In relation to skin color, white people predominated (389), while 379 respondents participated among blacks and mestizos.

4.2. Description of the Results

Leisure

The activities that adolescents carry out in their free time vary according to the scenario in which they were; When they are alone, 53.8% prefer to surf the Internet, listen to music (40.1%) and visit friends (40%). With friends they prefer to go to parties (40%), exchange interesting information (39.1%) and talk about sexuality (32.2%).

As a family they prefer to watch television and movies (27.8%) and exchange topics of interest (23%), while with their partners they go to parties (15.4%) and watch television and movies (13.4%). [Figure 1](#).

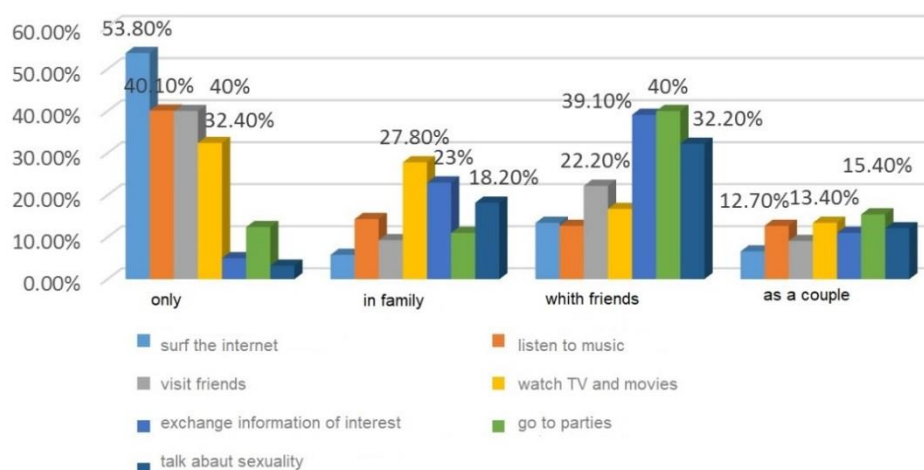


Figure 1. "USE OF FREE TIME BY ADOLESCENTS, ALONE OR IN COMPANY. CUBA 2022".

Sexual relations

31.4% had their first sexual relationship at age 15, followed by 22.8% at age 14 and then 20.7% at age 13. [Figure 2](#). White women predominate, aged 15 to 19 and from the central re-

gion.

According to gender, women's sexual relations have been with men and vice versa. Only six women reported having had relationships with people of the same sex, as did 12 men.

Bisexual relationships were declared by 10 men and 10 women.

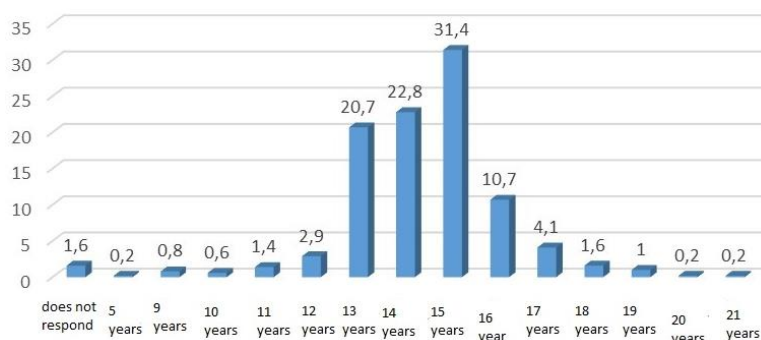


Figure 2. "DISTRIBUTION BY AGE OF FIRST SEXUAL INTERCOURSE. CUBA 2022".

When going into other details, it was revealed that these relationships, in 68% of the cases, were with their boyfriend or girlfriend, and in 12.5% with a friend. Likewise, 47.8% stated that their partner was older than them, between 1 and 5 years, while 32.9% were the same age.

Among the main motivations for starting sexual relations with penetration are the following: love in 43.1%, desire or

self-confidence in 24.7% and curiosity in 21.4%. [Figure 3.](#)

Regarding the first intercourse, 23.9% indicate that: although it was not planned, they liked it; 22.4% found it pleasant and grew closer as a couple. Furthermore, 13.1% stated that it was desired, they wanted to know what it felt like. [Figure 4.](#)

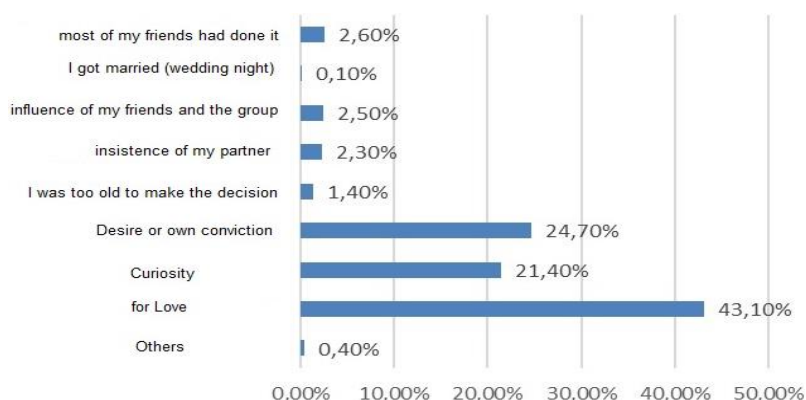


Figure 3. "MAIN REASONS FOR STARTING SEXUAL RELATIONS. CUBA 2022".

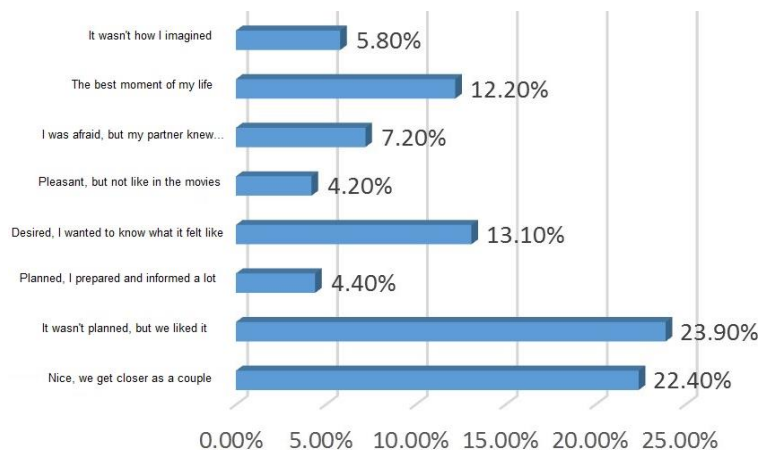


Figure 4. "IMPRESSIONS ABOUT THE FIRST SEXUAL RELATIONSHIP. CUBA 2022".

Condom use

Regarding protection, 56.0% say they have used a condom in their first sexual relationship, and 41.0% said they did not use it. [Figure 5](#)

Currently, 54.5% do have sexual relations, of which 72.6% use contraceptives. The most used protection method is the Condom, used by 47.7% of the sample illustrates which are the most used contraceptive methods. [Figure 6](#)

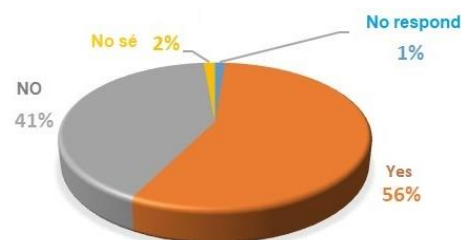


Figure 5. "CONDOM USE IN THE FIRST SEXUAL RELATIONSHIP. CUBA 2022".

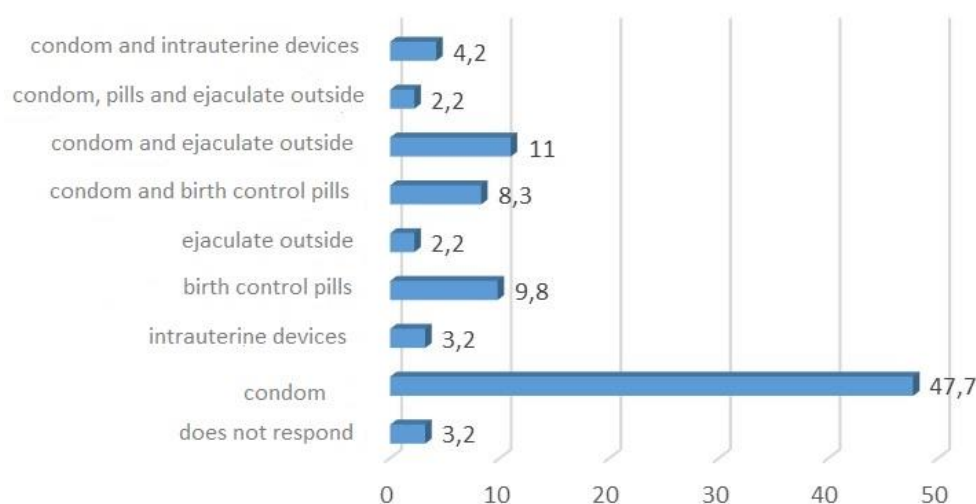


Figure 6. "MOST USED CONTRACEPTIVE METHODS. CUBA 2022".

25% express that the use of these contraceptive methods has to do with avoiding pregnancies, 21.4% believe that it protects them from infections. Others say they know the risk and that is why they want to protect themselves; in addition to the security it provides them.

The criteria set forth for NOT using contraceptives (MAC)

are argued as follows:

I have a stable partner-24.1%

I trust my partner-21.2%

I do not plan to have sexual relations-16.6%.

[Figure 7](#)

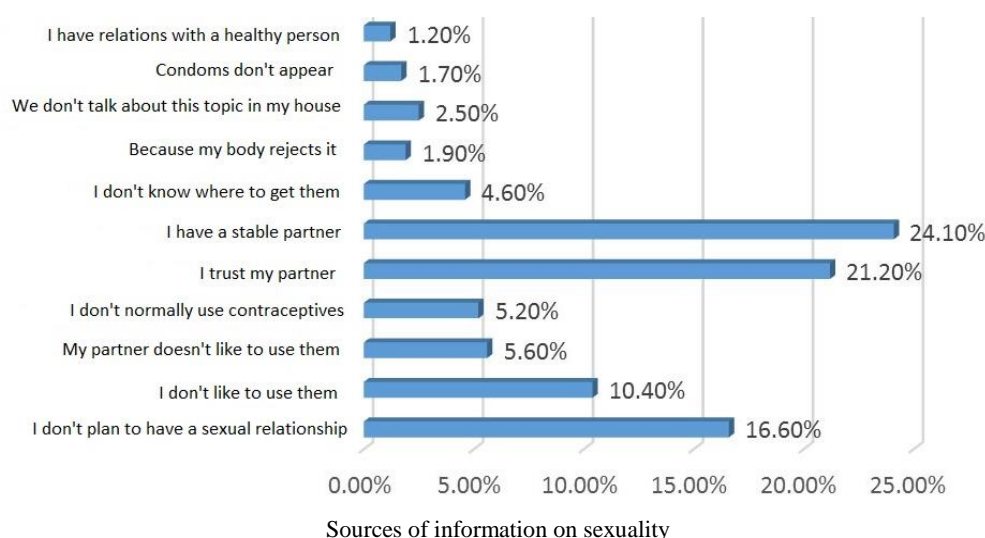


Figure 7. "REASONS FOR NON-USE OF MACs. CUBA 2022".

Information gaps are seen in more than half of the sample. Table 2 shows the channels that they consider most important and the preferred ways to communicate about sexualities.

Table 2. “MAIN DECLARED SOURCES OF INFORMATION. CUBA 2022”.

The sources of information considered the most important for them, are:		Preferred ways to communicate about sexualities	
Mother	71.9%	My mom	63.7%
Television	37.1%	Health personnel	32.4%
Friendships	35.4%	My dad	24.3%
Books	30.1%	Friendships	22.5%
health personnel	30.1%	Television	21.4%
Dad	30.0%	Books	20.3%
Teachers	26.8%	Couple	17.1%

The topics they would like to have more information about are:

- STIs- 43.7%
- Eroticism, pleasure and desire- 37.1%
- MAC-29.6%
- Sexual and reproductive health- 25.4%
- Teenage pregnancy- 23.9%
- Sexual orientation- 14.7%
- Sexual and reproductive rights- 14.4%
- Gender violence- 13.0%
- Gender- 9.6%
- Information about STIs

Although it does not reach half of the sample, white girls, aged 15 to 19, from the central region consider that they have obtained sufficient information about sexuality (44.4%), in addition to feeling interested in the topic of STIs (18.5%). This request is observed to a lesser extent in the mestizos, males, of the eastern region.

In contrast, adolescents who consider they do not have enough information about STIs reach 56% of the sample,

adding adolescents who declared they do not know if the information they have is sufficient (16%), which may be linked to the reduction of information on other health topics in times of COVID-19.

In the case of girls, it is the mother, the family member who provides them with the most information. They also identify other sources such as friends (8.5%), television (8.9%), and parents, teachers and staff. of health with 7.2% each of them. In men, the father also occupies an important place as a source of information on these topics.

Beliefs

When investigating common erroneous beliefs in this stage of life, it is observed that regarding masturbation, 66.9% consider that it is a matter for both sexes, while 23.3% believe that it is only a matter for men.

Regarding the criterion of who has more sexual desires, 50.0% believe that it does not depend on the sex of the person, while 31.0% consider that it is men. Figure 8. On the other hand, Figure 9 describes the distribution according to skin color.

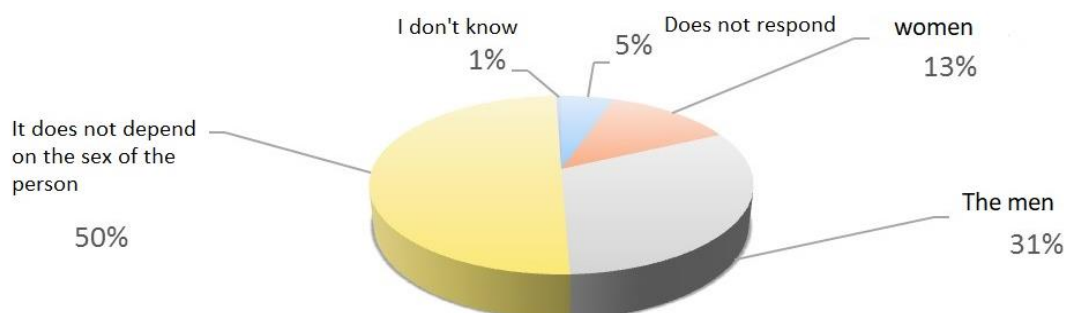
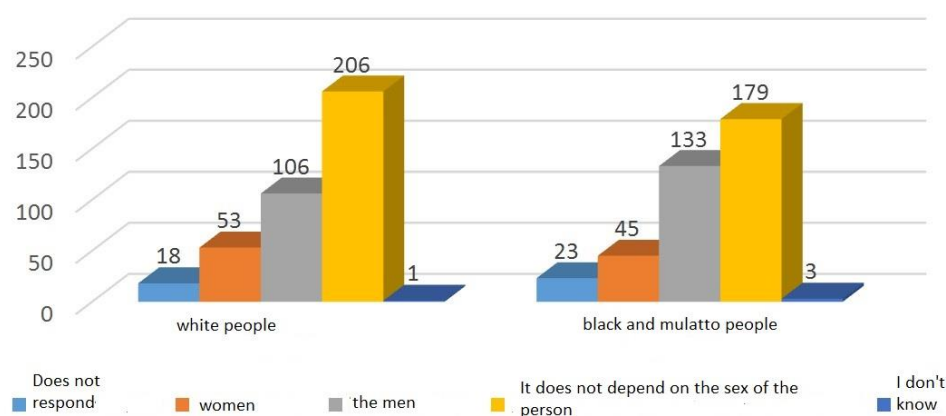


Figure 8. “DISTRIBUTION BY GENDER OF BELIEFS ABOUT SEXUAL DESIRE. CUBA 2022”.



Note: The Mulatto category includes blacks and mestizos

Figure 9. “DISTRIBUTION ACCORDING TO SKIN COLOR OF BELIEFS ABOUT SEXUAL DESIRE. CUBA 2022”.

Although in low percentages, the attachment of some myths and erroneous ideas related to transmission routes can be observed, such as: that you can become infected with HIV in a public bathroom (4.5%), from the bite of a mosquito (4.5%), drinking from the glass of an infected person (3.9%), which shows that in some scenarios there is still little information that contributes to delaying the adoption of preventive behaviors; In addition, it stimulates the stigma related to these infections.

Working or studying with a person with HIV does not constitute a problem or socialization barrier for 62.7%, although it is observed that around a third of the sample maintains discriminatory attitudes towards people with HIV. This point is considered relevant for new research, which

allows qualitative data to be collected, and accounts for the origins of these stigmatizing behaviors.

Knowledge about STIs

Knowledge about sexuality is essential to guarantee responsible practices. In this case, more than 50% do not answer the question or any of the items. Although adolescents are aware of some STIs with a higher incidence, they are unaware of others that cause significant damage to SRH. 30% of those surveyed are unaware of trichomoniasis, chlamydia infection, non-gonococcal urethritis, and hepatitis B; 40% declare not knowing the symptoms of any of them. This lack of knowledge is present regardless of gender and skin color, with similar figures in the three regions of the country. [Table 3](#).

Table 3. “ADOLESCENTS’ KNOWLEDGE ABOUT STIs. CUBA 2022”.

Column1	Does not respond	I have had it	I know the symptoms	I do not know the disease	It is transmitted by penetration	here is a risk of infection through oral sex	It reduces the risk of infection with a condom	It is cured	It is not cured	It causes death
Gonorrhea	8,7%	0,5%	19%	10,7%	19%	6,7%	17,7%	14,3%	2,1%	1,3%
Syphilis	10,6%	0,2%	17,4%	14,3%	17,6%	7,1%	16,1%	12,5%	2,1%	2,1%
Trichomonas	17,1%	0,2%	12,1%	31,4%	11,5%	3,6%	13,4%	9,4%	0,7%	0,7%
Chlamydia	17,5%	0,1%	13,7%	30,6%	12%	3,3%	12,9%	8,6%	1,1%	0,4%
genital herpes	14,4%	0,4%	16,9%	18,7%	15,2%	7,8%	14,2%	3,6%	8,2%	0,8%
Hepatitis B	18,4%	0,2%	15,1%	26,6%	11,5%	4,4%	12,4%	3%	6%	2,5%
Non-specific urethritis	24,4%	0%	9,9%	42,4%	6,5%	2%	9,7%	4,3%	0,4%	0,3%
Crabs	24,9%	0,6%	19,2%	28%	6,5%	2,8%	6,5%	11%	0,1%	0,2%
Moniliasis	15,6%	1,6%	17,1%	24%	11,3%	4,5%	13,5%	11,1%	0,8%	0,4%
Condyloma	11,6%	0,3%	17,8%	16,7%	15,6%	6,9%	14,9%	2,8%	12,1%	1,2%
HIV	8,3%	0%	15,1%	5,9%	16,4%	7,5%	14,6%	0,7%	15,9%	15,7%

Regarding the identification of the characteristic symptoms of STIs, only 15% do it correctly. Another 6.4% do not identify any symptoms, do not respond, or mark I don't know.

Higher levels of knowledge are observed in the case of HIV infection, although it does not exceed half of the sample. 41% declare that they are aware of the infection and 42% know that HIV causes death and that it is an incurable disease. When asked if a healthy-looking person can be infected with HIV,

more than 80% answered correctly, denoting greater control over this infection.

The declaration of suffering from any of these infections is almost non-existent. The declaration ranged between zero and 1.6%, which contradicts and is far from the current epidemiological reality, which reflects an increase in all mandatory notifiable STIs at these ages. This's illustrated in the Figure 10.

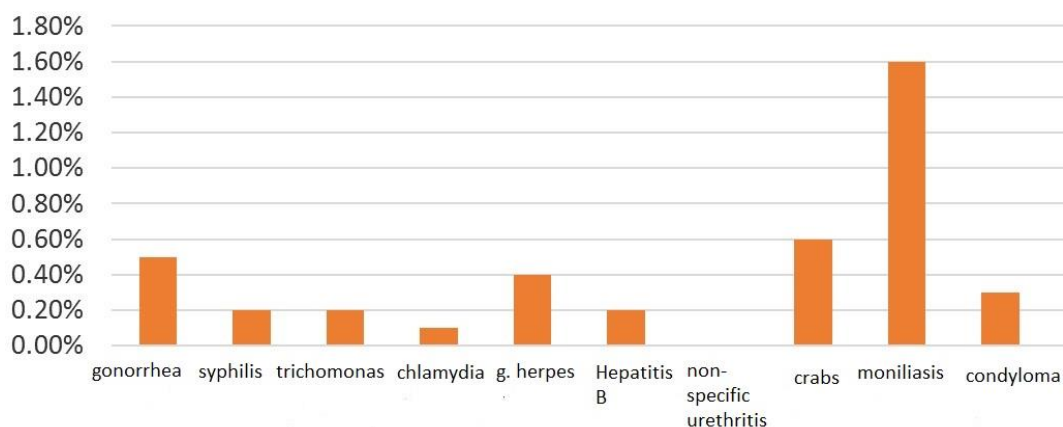


Figure 10. “*ADOLESCENTS WHO REPORT HAVING SUFFERED FROM AN STI. CUBA 2022*”

5. Discussion

STIs represent a serious problem worldwide, not only in terms of health but also economic and social. Its control represents one of the great challenges of contemporary public health. Its prevention constitutes a fundamental tool to guarantee the sexual health of adolescents and young people in this generation and future ones [8]. This prevention must take place from a multifactorial and diverse approach, taking into account cultural and economic aspects, among others, that allow addressing the network of situations and relationships that lead to the vulnerability of the youngest to these infections [35].

There is enough evidence to affirm that regardless of any circumstance or reality, the observed increase in STIs is real, transversal and important. Due to their transmission mechanisms, both biological, behavioral and structural factors intervene in the frequency and distribution of STIs, and precisely for this reason, they are not distributed homogeneously in the population and their epidemiological pattern and causes of the increase vary depending on which subpopulation it is [36].

Among some elements that contribute to the increase in STI cases in adolescents and are explored in this research are:

Leisure

Free time refers to time in which non-obligatory activities are carried out and that includes what one wants and likes to

do, closely linked to the personal and emotional [37]. In adolescent development, free time is of great importance. Some define it as a socializing context that cuts across school, family and peers, where learning of values and attitudes, competencies and skills, habits and forms of relationships also occur and where it contributes to the satisfaction of psychological needs. If this time is not used appropriately it can involve dangers since they are generally not under the supervision of adults and will depend on the judgment of friends, the opportunities that exist in the community and other factors. In other words, free time can be considered a protective or risk factor depending on its use [37]. As we stated previously, the adolescents studied during their free time prefer to surf the Internet when they are alone.

This result coincides with a recent Cuban study that revealed that more than 95% of participating adolescents reported connecting to the Internet when they are alone. Regarding the time, they spend online, it is generally between two to five hours, although they can spend up to 11 hours a day on sites such as WhatsApp, Telegram, Instagram, in the interest of communicating, chatting, staying updated, following people, and publishing content. Among the main consumptions are videos, photos about entertainment, following international musicians and singers, memes based on the daily life of Cubans, selfies, current Cuban music (reggaeton), and playing online games. Topics related to politics and health are generally rejected by them [38]. Sexuality is discussed more with friends than with a partner or family.

Other studies indicate that the free willingness of adolescents to surf the Internet leads to them being exposed to risk situations such as cyberbullying, access to pages with sexual content or sharing images of a sexual nature with suggestive or explicit content, whether personal or from others (sexting) [39-40]. According to a review study on sexting, it indicates that individuals who practice it are more likely to be victims of violence in the digital environment [41-43] to adopt behaviors such as: having multiple sexual partners, or having unprotected sexual relations [44, 39].

Another trend in web use is visiting dating sites, which are increasingly accepted among the adolescent population. According to recent qualitative research, supported by the UNFPA Cuba Office, the United Nations Population Fund, and the UNFPA Regional Office for Latin America and the Caribbean, during COVID-19, the use of virtuality expanded to finding a partner and maintaining sexual-erotic relationships in adolescents and young people in Cuba [45].

The music most consumed by adolescents on the Internet is reggaeton, in which the hypersexualization of its lyrics, dances and videos is recognized, the objectification of women's bodies generally and machismo entering with greater and greater force into the imagination of young people by permanently modifying the individual vision of sexuality and encouraging the adoption of higher risk behaviors [46-48].

Sexual relations

From 13 to 15 years old was the age at which more than 70% of the adolescents in the study had their first intercourse. These results coincide with those of the latest Multiple Indicator Cluster Survey (MICS6), which reflect the gradual decrease in the age of initiation of sexual relations [6]. The increasingly earlier onset of coital relationships makes it possible for the number and frequency of sexual partners to be greater at the end of adolescence. Some studies suggest that it can be between four to six at the end of this period of life, with the consequent risk of contracting STIs or pregnancy at these ages. Both situations endanger sexual health and well-being at this stage of life. The main motivation continues to be the love they feel, desire or curiosity with partners they consider stable, that is, within courtship [49-51].

It should be noted that, in general, this first intercourse occurs at very early ages and with older partners of several years of age, who already have a more experienced sexual life. In most cases, the place chosen was the couples' home, which, due to the characteristics of adolescent development, reduces the opportunities to negotiate or propose safe or violence-free sex practices, in addition to the high probability of that this risk is maintained in subsequent sexual acts. The intersection of these aspects marks a disadvantage for adolescents with respect to their partners and their autonomy in decision-making.

Condom use

Regarding the use of this means of protection, the study reveals that approximately half of the sample reports having

protected themselves, and the other half NOT, with the condom being the protection method most used by them. The condom continues to be the best-known protection method among the youth population with a positive belief about its effectiveness. Although in low percentages, they know that its use protects them from HIV and prevents pregnancy, others reported that they felt safe.

It should be noted that a non-negligible percentage of the sample, despite the latent ignorance and lack of information they express, reports not using condoms as the main method of STI prevention, more pronounced in black and mixed-race adolescents. There are multiple reasons expressed that justify unprotected coital relations. These range from trust in the partner, low availability of the product, to supposed planning. It is observed how trust or the belief of having stability in the relationship is considered a security scenario, in which it is not necessary to include prevention measures [52, 53].

These elements demonstrate the need to continue raising the preparation of adolescents in terms of their responsibility and systematic protection regarding sexual health. Unprotected sexual relations are among the main risk factors for STIs, so this long-term behavior can negatively impact the well-being of young people and adults in the future [54].

National studies reflect that, for multiple reasons, the use of any contraceptive method is not always part of the context of the first sexual relationship; it is often used after a first unwanted pregnancy, whether interrupted or not, or after suffering from an STI [53, 55]. Among the results of the Multiple Indicators by Clusters survey (MICS6), it was found that 67% of sexually active adolescents use some contraceptive method, a value lower than the 76% use in women between 20 and 24 years old or older. On the other hand, 22% of the adolescent population declares they have unmet needs for contraception [6].

It is important to note that during the study period the availability of condoms in pharmacies was almost zero in the country, for economic and social reasons increased by the COVID-19 pandemic.

Information related to STIs and their prevention

When analyzing the results by age, the main information demands among adolescents, all, in one way or another, place STIs, MACs, eroticism, pleasure as the information they need. Depending on sex, both give equal priority to STIs, and also to issues such as MAC; then eroticism, pleasure and desire. In any case, their choices implicitly carry the sexist education in which Cuban adolescents have developed, which is visible in all their choices.

According to the information collected, as age increases, the links established with families to discuss sexual issues become greater. However, research carried out shows that there are barriers that limit the achievement of positive communication around these topics [56, 57].

Insufficient information is a limitation to consider in maintaining sexual health and preventing STIs. The information must be timely, appropriate to age and gender,

and relevant to the sociocultural context of people, their families, and their communities [56, 57]. Today Cuba has various modern communication channels through which information can be provided to young people, including parents, teachers and social actors of interest. Innovating on these means will allow us to build more attractive and effective actions.

Knowledge and beliefs

Acquiring basic knowledge about STIs and HIV fosters adherence to the healthy habits, confidence and social skills necessary to protect themselves from infections, so a crucial component of prevention is ensuring that young people acquire comprehensive knowledge about transmission routes, symptoms, severity and prevention of STIs [58, 59]. In this research, the low levels of knowledge experienced by adolescents are observed. The main incorrect answers are located in early adolescence, particularly in men of black and mixed skin color, which coincides with the results of the latest Survey on STI and HIV/AIDS Prevention Indicators of the ONEI (2017). [6].

Most of them indicate the lack of knowledge that persists related to the existence of STIs, the severity of these infections and the characteristics that identify them. The ideas are dispersed and strongly linked to what is erroneous, considered an important gap and, in turn, a challenge for prevention.

Erroneous beliefs about sexual pleasure and desire are maintained in the imagination of many adolescents, where the deep-rooted stereotype regarding unequal and stigmatizing gender roles is confirmed, placing men as the decider of when and under what conditions sexual relations are held. sexual relations and the woman as the recipient of the other's desire. Regarding skin color, the majority of white people say that sexual desire does not depend on the sex of the person; while among blacks and mestizos the criterion predominates that men are the ones with the most desires. These responses could be associated with cultural beliefs. Likewise, with regard to self-satisfaction through masturbation, some maintain that it is only a thing for men, a criterion rooted in the Cuban population.

This study shows how adolescents prefer to hide the condition of an STI, coinciding with what was reported in a research carried out in 2021 on the subject. Adolescents report that it is better for them not to talk about this topic with anyone. They expressed that many adolescents may be living this experience in silence for fear of being questioned. Hiding a certain disease condition may be associated with stigma and/or feelings of rejection, a social construct that has accompanied STIs since their inception. It may also be due to lack of knowledge of the symptoms or be associated with a lack of trust with adults in the family, school or medical environment, an aspect to be explored in depth in subsequent research. The fear of this condition being discovered generates anxiety, stress, isolation and suffering in the adolescent or young people who suffer from it. On many occasions, medical care and timely information to parents are evaded, which can

contribute to worsening their health, including making inappropriate decisions or self-medicating.

6. Final Considerations

COVID-19 constituted an adverse scenario related to the prevention of STIs in adolescents. Overinformation about the pandemic depressed information about STIs and their prevention and deepened the knowledge gaps that these populations already had. The instability in prevention supplies such as condoms led to an increase in unprotected sex practices. Adolescents assume risky behaviors that they repeat or copy from friends or peers and many of them do not have family or community support to reverse their reality.

Physical isolation measures led to the incorporation of high-risk behaviors for adolescent health. The intensive use of the Internet, social networks, visits to virtual meeting sites, are contexts in which those of these ages can be victims of cyberbullying, sexting or other forms of violence in the digital environment.

The need to intensify educational actions that favor the maintenance of sexual health and the prevention of STIs, in all possible scenarios, is indisputable, then. Incorporating innovative and attractive ways to do so is imperative to protect the health of Cuban adolescents.

Abbreviations

ONEI	National Statistics and Information Office
MINSAP	Ministry of Public Health of Cuba
STIs	Sexually Transmitted Infections
HIV	Human Immunodeficiency Virus
MICS	Multiple Indicator Survey by Conglomerates
UNFPA	United Nations Population Fund
SRH	Sexual and Reproductive Health
MAC	Contraceptive Methods

Conflicts of Interest

The authors declare no conflicts of interest.

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