Knowledge about sexually transmitted infections among users of a testing and counseling center

Conhecimento sobre as infecções sexualmente transmissíveis em usuários de um centro de testagem e aconselhamento

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ABSTRACT

Introduction: Sexually Transmitted Infections (STI) are configured as a public health problem, carrying a stigma, and often making the individual more vulnerable to other diseases. The perception of vulnerability does not motivate a preventive behavior towards STIs. **Objective:** To evaluate knowledge about STIs in relation to sociodemographic aspects and sexual and reproductive behaviors. **Methods:** This descriptive study was conducted in 2018 with 772 users of the voluntary Testing and Counseling Center (TCC) of Uberaba/MG, and included a questionnaire on their knowledge regarding STIs, addressing specific aspects of HIV, HPV, herpes, gonorrhea, chlamydia, hepatitis B and syphilis. Furthermore, data on the sexual and reproductive behavior of users was collected. **Results:** The study included 201 men and 571 women, of which 334 were pregnant. Less knowledge about STIs was observed among pregnant women, adolescents and the elderly people. Questions about chlamydia represented the highest rate of errors (75.9%) among respondents, while syphilis was the STI with greater knowledge (79.5% of the correct answers). Most participants reported they had never used condoms (60.5%) and identified "will not get any STI" as the main reason for not using them (52.7%). There were no significant associations between the degree of knowledge of STIs and sexual behavior. **Conclusion:** Among the population, especially teenagers and elderly people, there is a relevant lack of knowledge when it comes to STIs. Promoting universal access to diagnosis and prevention of STIs, as well as holistic care for vulnerable and at-risk populations, remain as challenges to be overcome.

Keywords: sexually transmitted diseases; sexual behavior; knowledge.

RESUMO

Introdução: Infecções Sexualmente Transmissíveis (IST) se configuram como um problema de saúde pública, pois carregam consigo estigma e tornam as pessoas mais vulneráveis a outras doenças. A percepção de vulnerabilidade não motiva o comportamento preventivo às IST. **Objetivo:** Avaliar o conhecimento sobre as IST em relação aos fatores sociodemográficos e o comportamento sexual e reprodutivo. **Métodos:** Estudo descritivo conduzido em 2018 com 772 usuários do Centro de Testagem e Aconselhamento (CTA) da cidade de Uberaba, estado de Minas Gerais, Brasil. Os participantes responderam a um questionário sobre conhecimento das IST, abordando questões específicas sobre vírus da imunodeficiência humana (HIV), papilomavírus humano (HPV), herpes, gonorreia, clamídia, hepatite B e sífilis. Foram coletados também dados sobre o comportamento sexual e reprodutivo dos usuários. **Resultados:** O estudo contou com 201 homens e 571 mulheres, das quais 334 estavam gestantes. Menor conhecimento sobre IST foi observado entre gestantes, adolescentes e idosos. As perguntas sobre clamídia representaram o maior índice de erros (75,9%), ao passo que a sífilis se mostrou uma IST de maior conhecimento (79,5% de acerto). A maioria dos participantes afirmou nunca usar preservativos (60,5%) e identificou como principal motivo para esse não uso uma percepção da impossibilidade de contrair uma IST (52,7%). Não foram observadas associações significativas entre o grau de conhecimento de IST e o comportamento sexual. **Conclusão:** Há, entre a população, especialmente adolescentes e idosos, um desconhecimento relevante acerca das principais IST. A promoção do acesso universal ao diagnóstico e à prevenção das IST, bem como a integralidade no cuidado da população vulnerável e de risco permanecem enquanto desafios a superar.

Palavras-chave: doenças sexualmente transmissíveis; comportamento sexual; conhecimento.

INTRODUCTION

Sexually Transmitted Infections (STI) are known worldwide as a major public health problem. They carry a stigma and make the organism more vulnerable to other diseases, some of which may be directly related to population mortality. There are many infections transmitted sexually and vertically (from mother to fetus), such as HIV/Aids, Syphilis and some viral hepatitis[1].

In 2020, about 37.6 million people were living with HIV/AIDS worldwide, and approximately 690,000 people died from illnesses related to this infection[2]. In Brazil, from the beginning of the HIV/AIDS epidemic in 1980 until June/2020 there were records of 1,011,617 cases of AIDS reported in the country. In 2019, despite the significant increase in life expectancy of users of an antiretroviral therapy, 10,565 deaths were reported with AIDS as the underlying cause, with 31 cases in the city of Uberaba/MG. The disease remains incurable despite advances in scientific research[3,4].

Syphilis, an infectious, curable, systemic and chronic disease, is, among STIs, the second major concern of health authorities, with HIV/AIDS being the first. After 10 years of progressive increase, the transmission of syphilis among adults has fallen in Brazil, but it still presents a high detection rate (72.8 per 100,000 inhabitants), which directly reflects on vertical transmission and infant mortality from the disease[5,6].

Hepatitis B, another STI with a relative incidence in the population, has the particularity of being asymptomatic or little symptomatic even in the acute stages of the infection. The available drugs do not eliminate the causative agent of the disease directly, but rather the symptoms and their complications. Although the vaccine against the hepatitis B virus (HBV) is in the Brazilian immunization calendar

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and is available free of charge in the public health system (*Sistema Único de Saúde* — SUS), there is a significant number of new infections every year. In 2019, according to the Brazilian Ministry of Health, 13,256 cases were reported in the country and 3,570 cases in the State of Minas Gerais[6,7].

These infections, transmitted vertically through unprotected sexual intercourse, sharing of syringes or blood transfusions, have in common the frequent risk behavior of individuals, especially sexual and reproductive risks. Cruzeiro et al.[8] understand the risky sexual and reproductive behavior as that where individuals did not use a condom to avoid unwanted pregnancy and/or to protect themselves against STIs.

According to the Survey of Knowledge, Attitudes and Practices in the Brazilian Population carried out by the Ministry of Health, 64.2% of sexually active Brazilian youth between 15 and 24 years old used a condom in their first sexual intercourse; of these, only 23.5% used the method in all relationships in their lives. When asked about their last intercourse, 39.1% said they had used a condom[1]. Another survey carried out with university students from a public institution in the State of São Paulo, Brazil, identified that 81% of the participants acknowledged having questions about STIs[9].

Several studies have confirmed that the perception of vulnerability does not motivate a preventive behavior towards STIs[10,11]. In this context, understanding and reflecting on the reproductive and sexual behavior of the population becomes urgent and necessary to promote effective actions to prevent the transmission of such infections.

Promoting universal access to diagnosis and prevention of STIs, as well as integrality care for the vulnerable and at-risk population, remains challenges to be overcome. The Testing and Counseling Centers (TCC) in Brazil, articulated with the other services of the public health system, represent an important strategy in this process.

OBJECTIVE

To evaluate the knowledge about STIs in relation to sociodemographic aspects and sexual and reproductive behaviors.

METHODS

A descriptive-exploratory, cross-sectional study was carried out, including 772 users of the Testing and Counseling Center (TCC) in the city of Uberaba/MG, Brazil. The interviews were conducted between June/2018 and September/2018 and included the application of the Sexually Transmitted Disease Knowledge Questionnaire (STD-KQ) — an instrument cross-culturally adapted to Portuguese — addressing specific aspects of HIV, HPV, herpes, gonorrhea, chlamydia, hepatitis B and syphilis[12].

The STD-KQ consists of 28 statements about these ISTs with three answer options each: "true", "false" and "I don't know". Each correct answer adds one (1) point to the final score, where 0 refers to the total lack of knowledge and 28 points refers to the highest level of knowledge[12]. For the present study, a Cronbach's alpha of 0.848 was observed. The STD-KQ was categorized from median into low (≤15 correct answers) and high (>15 correct answers) degree of knowledge.

This study also relied on the use of information contained in the TCC Entry Form (characteristic form of sexual and reproductive behavior filled in by each user during the delivery of the test results). Of the 772 people interviewed, the Entry Form was obtained for a group of 555 TCC users. This loss was attributed to factors such as the refusal of some participants to fill it in and the absence of a printed document when the results were delivered. It is also noteworthy that, of the 555 forms accessed, problems related to the completeness of the data were observed, which may result from the lack of criteria and standardization adopted by the TCC for completion. After the end of the collection, the data was double-entered in Excel. The database for analysis was finalized after checking the information.

To characterize the study population, the following variables were used: sex (men; women), age group (adolescents: ≤21 years; young people: 22–34 years; adults: 35–59 years; and elderly: ≥60 years), education level (up to elementary school; high school; higher education), marital status (married; divorced/separated/widowed; single; other), use of condoms with a steady partner (always; sometimes; never), reason for not using condoms (dislikes; trusts the partner; STI), intention to follow up if the result is positive (yes; no), peace of mind if the result is positive (yes; no), first test performed at the TCC (yes; no), previous STI (yes; no).

The variables were presented according to absolute and relative frequency. Chi-square tests were performed to test the association between STD-KQ and sociodemographic and sexual and reproductive behavior variables. A significance level of 5% was adopted. All analyzes were performed using the R Statistical Program, version 2.15 (R Development Core Team, Vienna, Austria).

The project was approved by the Research Ethics Committee of the UFTM (CAAE nº 82541018.2.0000.5154) and met all the recommendations and requirements of Resolution CNS 466/12.

RESULTS

A total of 772 people participated in the study, 201 (26.1%) men and 571 women, of which 334 were pregnant. Of the total, 176 were adolescents (≤21 years), 393 young people (22–34 years), 172 adults (35–59 years) and 26 seniors (≥60 years). Low knowledge about STIs (K-STI) was observed more frequently among pregnant women (56.3%), while high K-STI was observed in similar proportions for men (55.2%) and women not pregnant (55.3%). For the relationship between K-STI and age group, higher proportions of low K-STI were observed among adolescents (60.8%) and the elderly (76.9%) (**Figures 1 and 2**).

With regard to the specific knowledge of each STI, the questions about Chlamydia represented the highest rate of errors among the respondents (75.9%), while Syphilis was the best known STI among them (79.5% of correct answers). For HIV, Herpes, Hepatitis B, HPV and Gonorrhea, participants showed moderate knowledge, hitting between 47.7% and 56.2% of the specific questions. The presence of a lesion on the penis, vagina or anus was rightly recognized as a source of STI transmission by most respondents (82.1%). On the other hand, the presence of bad odor in vaginal secretion was erroneously associated with Chlamydia (80.8%) (**Chart 1**).

The description of K-STI according to sociodemographic aspects for the subgroup of participants who had completed the Entry Form

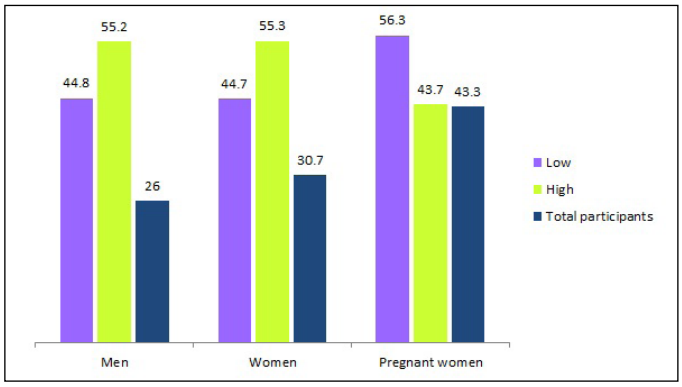


Figure 1 – Degree of knowledge (%) about Sexually Transmitted Infections — Uberaba/MG, Brazil, 2018.

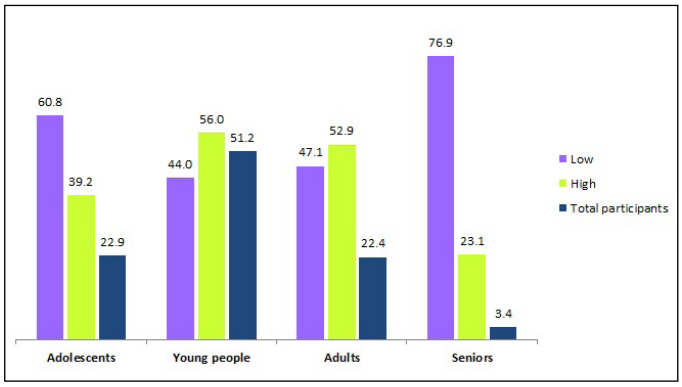


Figure 2 – Degree of knowledge (%) about Sexually Transmitted Infections by age group —Uberaba/MG, Brazil, 2018.

Chart 1 – Description of the percentage of correct answers and errors for each K-STI question in a sample (N=772) of TCC users in Uberaba/MG, Brazil, 2018.

Assertions on Sexually Transmitted Infections (K-STI)	Wrong answers n (%)	Correct answers n (%)
1. Genital herpes is caused by the same virus as HIV	409 (53.0)	363 (47.0)
2. Frequent urinary infections are caused by Chlamydia	597 (77.3)	175 (22.7)
3. There is a cure for gonorrhea	181 (23.4)	591 (76.6)
4. It is easier to get HIV if a person also has another Sexually Transmitted Disease	281 (36.4)	491 (63.6)
5. Human Papillomavirus is caused by the same virus that causes HIV	431 (55.8)	341 (44.2)
6. Having anal sex increases a person's risk of getting Hepatitis B	426 (55.2)	346 (44.8)
7. Soon after getting HIV, a person develops open sores on the genitals (penis or vagina)	445 (57.6)	327 (42.4)
8. There is a cure for Chlamydia	525 (68.0)	247 (32.0)
9. A woman with Genital Herpes can pass the infection on to her baby during childbirth	183 (23.7)	589 (76.3)
10. A woman can look at her body and tell if she has gonorrhea	482 (62.4)	290 (37.6)
11. The same virus causes all Sexually Transmitted Diseases	349 (45.2)	423 (54.8)
12. Human Papillomavirus can cause genital warts	323 (41.8)	449 (58.2)
13. Human Papillomavirus can lead to cancer in women	273 (35.4)	499 (64.6)
14. A man only gets genital warts by having vaginal sex	324 (42.0)	448 (58.0)
15. Sexually Transmitted Diseases can lead to health problems, which are generally more severe in men than in women	344 (44.6)	428 (55.4)
16. A woman can say she has Chlamydia if a bad smell comes from her vagina.	624 (80.8)	148 (19.2)
17. If a person tests positive for HIV, that test can tell how sick a person will become.	368 (47.7)	404 (52.3)
18. There is a vaccine available to prevent a person from getting Gonorrhea	460 (59.6)	312 (40.4)
19. A woman can tell, by the way her body feels, if she has a Sexually Transmitted Disease	509 (65.9)	263 (34.1)
20. A person with Genital Herpes must have open sores to pass the infection on to their partner or sexual partner.	443 (57.4)	329 (42.6)
21. There is a vaccine that prevents a person from getting Chlamydia	577 (74.7)	195 (25.3)
22. A man can tell by the way his body feels if he has Hepatitis B	418 (54.1)	354 (45.9)
23. If a person had Gonorrhea in the past, they are immune (protected) and cannot get it again	236 (30.6)	536 (69.4)
24. Human Papillomavirus can cause HIV	485 (62.8)	287 (37.2)
25. A man can avoid getting Genital warts by washing his genitals after sex	306 (39.6)	466 (60.4)
26. There is a vaccine that can protect a person from getting Hepatitis B	175 (22.7)	597 (77.3)
27. Even if your partner does not have any lesions on the penis, anus or vagina, he/she can pass syphilis to you	138 (17.9)	634 (82.1)
28. Syphilis can stay hidden in the body for years	185 (24.0)	587 (76.0)

is presented in **Table 1**. In accordance with the information observed for the whole group, low K-STI is noticed more frequently among pregnant women, adolescents and the elderly. In addition, participants with a lower level of education had lower K-STI (**Table 1**).

Regarding sexual behaviors, most participants reported never using condoms (60.5%), identified "will not get STIs" as the main reason for not using condoms (52.7%) and did not report the presence of any STI previously (86.7%). With regard to the relationship between K-STI and sexual behaviors, there were no statistically significant associations. However, it is interesting to point out the higher proportion of participants with high K-STI among those who had already been tested in the TCC before (**Table 2**).

Table 1 – Description of knowledge about Sexually Transmitted Infections (K-STI) according to sociodemographic characteristics in a sample of TCC users in Uberaba/MG, Brazil, 2018.

	K-STI		
	Low n (%)	High n (%)	p
Participants			
Men	59 (20.9)	79 (28.5)	0.030
Women	79 (27.5)	84 (30.3)	
Pregnant women	140 (51.6)	114 (41.2)	
Age groups (years old)			
≤21	77 (28.5)	50 (18.1)	0.001
22–34	124 (45.9)	164 (59.4)	
35–39	58 (21.5)	59 (21.4)	
≥60	11 (4.1)	3 (1.1)	
Educational level			
Up to elementary school	66 (42.3)	41 (27.3)	<0.001
High School	82 (52.6)	76 (50.7)	
Higher education	8 (5.1)	33 (22.0)	
Marital status			
Married	98 (63.2)	82 (54.3)	0.465
Divorced / widowed	6 (3.9)	7 (4.7)	
Single	37 (23.9)	44 (29.1)	
Others	14 (9.0)	18 (11.9)	

Table 2 – Description of knowledge about Sexually Transmitted Infections (K-STI) according to sexual and reproductive behavior in a sample of TCC users in Uberaba/MG, Brazil, 2018.

	K-STI		
	Low n (%)	High n (%)	p
Use of a condom with a steady partner			
Always	6 (4.3)	12 (9.6)	0.241
Sometimes	46 (33.4)	40 (32.0)	
Never	86 (62.3)	73 (58.4)	
Reason for not using a condom			
Don't like it	22 (20.0)	21 (21.6)	0.491
Trust the partner	33 (30.0)	22 (22.7)	
Won't get STIs	55 (50.0)	54 (55.7)	
Follow-up on a positive result for STI			
No	41 (26.4)	44 (29.4)	0.664
Yes	114 (73.6)	106 (70.6)	
Feeling of tranquility if the test result is positive			
No	89 (57.4)	91 (60.7)	0.645
Yes	66 (42.6)	59 (39.3)	
First test in the TCC			
No	46 (32.9)	56 (43.4)	0.097
Yes	94 (67.1)	73 (56.6)	
Prior STI			
No	133 (86.4)	129 (87.2)	0.972
Yes	21 (13.6)	19 (12.8)	

DISCUSSION

In this study, women sought more spontaneously the Testing and Counseling Center (TCC) compared to men, which differs from other surveys also carried out in this service, where the search for care was more frequent by men[13,14].

With regard to knowledge about STIs, it was identified that adolescents and the old-age people have predominantly a greater lack of knowledge compared to the requirements of other age groups. In the adolescent universe, feelings of non-vulnerability, the impulses, the need to disagree and misunderstandings add up to communication difficulties solidified in spaces where sexuality could be worked[15]. On the other hand, it is worth recognizing the existence of gaps and the inefficiency of sexual education actions in the Brazilian school context, either due to lack of teacher training and investment in educational institutions, or due to political-social pressure to implement pedagogical proposals with a religious, hygienist and heteronormative bias[16].

With regard to the elderly, the lack of knowledge about STIs can be explained by the existence of a social structure based on myths and beliefs, which underpin knowledge and, consequently, sexual behavior in the old age[17]. A study carried out in Minas Gerais (Brazil) with users of a CTT suggested that the elderly have unrestricted trust in their partner and the idea that this does not offer them any risk of contracting STIs[18].

There was a significant relationship between education and level of knowledge regarding STIs in this study. That is, the fewer years of study, the less knowledge a person had about infections. Another research, however, identified a relative lack of knowledge when it comes to STIs even among university students of health courses[11].

In the specific knowledge of each STI, the highest error rate was observed in the questions about Chlamydia, which can be explained by the fact that it is an infection that is not part of the National List of Diseases and Conditions of Compulsory Notification in Brazil, which reflects on the efforts of educational actions by the State and society. According to Rowley et al.[19], it is estimated that 127 million people contracted Chlamydia worldwide in 2016 and, in women, the prevalence of the disease was 3.8%. Greater investments in specific preventive campaigns are necessary, since this is a recurrent STI with important impacts on the sexual and reproductive lives of men and women, ranging from discharge to infertility, pain and ectopic pregnancy.

On the other hand, Syphilis proved to be an STI with greater knowledge among the participants in this study, which may be a reflection of ministerial campaigns motivated by the exponential increase in the number of cases of the disease in the last 10 years[3].

Another relevant fact observed in this study was that the presence of lesions on the penis, vagina or anus were recognized as a sign of STI by most respondents, that is, the existence of obvious signs and symptoms, such as wounds and odor, is part of the popular knowledge about sexual infections. However, this knowledge can be a risk in the case of infections with silent cycles, such as HIV and HPV.

The results of the use of condoms with a steady partner in all relationships, in which people with low knowledge and high knowledge about STIs represented only 4.3 and 9.6% of cases, respectively, show the need to urgently intensify sex education activities. The behavior of not using a condom with a stable partner has been denounced in studies such as that by Barbosa et al.[20]. Trust in the partner awakens in many people a false sense of distance from the risks of contracting STIs and, despite the knowledge that many have about these infections, especially as to how they are transmitted, it is observed that this risk practice is supported by a strong and dangerous culture.

Still on risk behavior, Oliveira-Campos et al.[10] observed that the idea of vulnerability that resides in the knowledge about STIs

does not depend only on individual motivations. For the authors, a series of factors and determinants that affect individuals regardless of their will must be considered, such as access to sexual education.

The results of the present study did not show differences between the first test performed at the TCC and the sexual and reproductive behavior, which suggests that the current awareness and prevention methods carried out at the unit may not be sufficient to change users' behavior. It is believed that a deepening of this approach, through studies that include more detailed interviews with TCC users, is necessary for a better assessment of the topic.

Strengths

The K-STI questionnaire is an easy-to-apply resource, enabling a quick and general analysis of the knowledge concerning the main STIs. It is believed that its results can characterize popular knowledge, supporting educational actions and public policies.

Limitation

As a study that also included the collection of secondary data (CTT Entry Form), the absence of relevant information for other analyzes with the potential to broaden the discussion of results and theme was identified. Underreporting is present in health institutions, but it could be overcome with professional qualification and greater technological investment and innovation in the health field, such as electronic medical records - technology scarcely available in Brazil.

CONCLUSION

This study identified that there is a relevant lack of knowledge about the main STIs among the population, which may negatively impact morbidity and mortality indicators from these infections. Promoting universal access to diagnosis and prevention of STIs, as well as holistic care for vulnerable and at-risk populations, remain challenges to be overcome. Furthermore, it is urgent to address sexuality among different social actors, especially among adolescents and the elderly people, as it is an audience that is even more vulnerable to the chronic lack of information in the Brazilian society regarding STIs.

It is essential to carry out additional research on the sexual behavior of citizens and to set out the factors that influence them, as a way to promote the development of educational actions and activities capable of reducing STIs.

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PARTICIPATION OF EACH AUTHOR

ASC and CAA are responsible for designing, planning and interpreting the results. ABB and IAFS contributed to data collection, analysis and interpretation of results. CAA is responsible for the first version of the manuscript. ASC, ABB, CAA and IAFS reviewed and approved the final version submitted.

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CONFLICT OF INTERESTS

There is no conflict of interest.

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