Saúde e Pesquisa
DOI: 10.17765/2176-9206.2022v15n2.e9808

Sexually transmitted infections in the population living in the rural settlement project Nova Amazonia, Brazil

Infecções sexualmente transmissíveis na população residente no projeto de assentamento rural Nova Amazônia, Brasil

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ABSTRACT
The illness can reveals impacts and consequences of social, economic and cultural inequalities. To evaluate the seroprevalence of HIV infection, Hepatitis B and C and Syphilis and sexual behavior of residents of the Nova Amazônia Settlement Project (PANA). Observational, cross-sectional, descriptive, quantitative and qualitative study, involving 246 residents of PANA, carried out between November 2019 and September 2020. A questionnaire was applied and rapid tests were performed for HIV 1 and 2, Syphilis and Hepatitis B and C. A prevalence of 4.1% for sexually transmitted diseases was observed, statistically associated with being male (p = 0.04), being over 40 years old (p = 0.003) and having been related with more than 10 sexual partners throughout life (p = 0.03). Due to the identification of risky sexual behaviors, such as very low adherence to condom use, it is necessary to perform an early diagnosis and monitor new cases.

Keywords: Prevalence. Rural population. Sexually transmitted infection.

RESUMO
O adoecimento pode revelar impactos e consequências das desigualdades sociais, econômicas e culturais. Avaliar a soroprevalência da infecção pelo HIV, Hepatites B e C e Sífilis e o comportamento sexual dos moradores do Projeto de Assentamento Nova Amazônia (PANA). Trata-se de estudo observacional, transversal, descritivo, quantitativo e qualitativo, envolvendo 246 moradores do PANA, realizado entre novembro de 2019 e setembro de 2020. Foi aplicado um questionário e realizados testes rápidos para HIV 1 e 2, Sífilis e Hepatites B e C. Foi possível observar a prevalência de 4,1% para infecções sexualmente transmissíveis, estando associada estatisticamente com ser do gênero masculino (p = 0,04), ter mais de 40 anos (p = 0,003) e ter se relacionado com mais de 10 parceiros sexuais ao longo da vida (p = 0,03). Devido à identificação de condutas sexuais de risco, como baixíssima adesão ao uso do preservativo, faz-se necessária a realização de diagnóstico precoce e monitoramento de novos casos.

Palavras-chave: Infecção sexualmente transmissível. População rural. Prevalência.

Received in February 12, 2021
Accepted on September 19, 2021

INTRODUCTION

Data from the Brazilian Institute of Geography and Statistics (IBGE) show that, in 2010, the Brazilian population was 190,755,799 people. Of these, nearly 30 million lived in rural areas, representing 15.6% total population.*1* This rural population is distributed throughout the Brazilian territory, with diverse cultural, regional and racial specificities that reflect the heterogeneity that characterizes Brazil. Rural settlements, resulting from agrarian reform, represent the most recent form of rural organization. In general, they have a characteristic of the struggle and care of the land, and they can be considered an important segment in an attempt to reduce the rural exodus and fix the man in the countryside.[2]

The settlement project is classified as a set of agricultural units that are independent of each other, located in a rural property that previously belonged to a single owner[3]. The Nova Amazônia Settlement Project (PANA), located in the municipality of Boa Vista, state of Roraima, was created on October 15, 2001, and is home to approximately 900 families, bordering the BR 174, in the Brazil-Venezuela[4] direction and despite being intended for as a place of residence and work for families benefiting from the National Agrarian Reform Program, the reality of the settled population is characterized by the abandonment by public authorities, by social vulnerability and, consequently, by illness.

The illness and death of each individual reveal the impacts and consequences of social, economic and cultural inequalities. According to health indicators, populations exposed to fragile living conditions are more vulnerable and live less.[5] Conflicts and social problems in this scenario generate different health needs, understood as social because they are socio-historically determined. It is noteworthy that the relationship between living conditions and health is well known in the field of Public Health.[6]

Among the main reasons for illness and public health problems that occur are Sexually Transmitted Infections (STIs), given their high rates of incidence and prevalence and lack of access to adequate treatment. In developing countries, STIs are among the 10 diseases that are most likely to make people seek health services and can have serious health, social and economic consequences.[7]

Being a reality present both in Brazil and in Roraima, it would not be different in the PANA population, which becomes even more vulnerable because it is a rural population and territorially distant from health care facilities. Thus, this study aimed to assess the seroprevalence of HIV infection, Hepatitis B and C and Syphilis in the population living in the Nova Amazônia

Settlement Project, state of Roraima, as well as the knowledge and perception of this community about sexually transmitted infections.

METHODOLOGY

This was an observational, cross-sectional, descriptive, mixed study (quantitative and qualitative), involving 246 PANA residents of both genders, aged between 16 and 70 years. Data collection and diagnostic tests were carried out in the homes of the study participants, from November 2019 to September 2020.

The research instrument used was a semi-structured questionnaire, including sociodemographic data, perception and knowledge about HIV/AIDS, syphilis and hepatitis B and C, preserving the confidentiality and secrecy of all information. All participants, over 18 years of age, previously signed the Informed Consent and the minors signed the Informed Consent Term. All children under 18 years of age were authorized by their parents or legal guardians to participate in the study.

After applying the questionnaire, participants were invited to perform rapid tests for HIV, Syphilis and Hepatitis B and C. For these tests, a single fingerprint was performed on each research participant. In case of reactive tests, the participant was sent to the Basic Health Unit (BHU) closest to the settlement for complementary exams, proof of results and start of treatment. This routing flow was previously agreed with the BHU itself.

The diagnosis of the presence of HIV 1 and 2 viruses was performed through the rapid test (MedTeste – Biotest). In this case, a second confirmatory test was performed using the rapid test (Biomanguinhos). These are chromatographic immunoassays for the qualitative detection of HIV type 1 and type 2 antibodies. To assess the prevalence of syphilis, a rapid immunochromatographic test was performed for the detection of anti-treponemal antibodies (Immune-rapid Syphilis; Wama Diagnóstica) for qualitative determination of anti-Treponema pallidum antibodies (IgG and IgM). As this is a screening test and to avoid a reactive result due to serological scarring, in the case of reactive results, the result was confirmed by means of the VDRL-Venereal Disease Research Laboratory (Wama Diagnóstica) test. For the detection of Hepatitis B, the rapid immunochromatographic test was used for the qualitative determination of Hepatitis B virus surface antigen (HBsAg/subtypes ad and ay) in samples of human serum, plasma or whole blood (Bioclin HBsAg 145) and for the diagnosis of Hepatitis C, the rapid immunochromatographic test was used - the rapid HCV test (Alere HCV). It is noteworthy that all tests were performed following the methodology proposed by the manufacturers.

The collected data were tabulated in Microsoft Excel version 10 software. Descriptive and inferential analyses were performed. The Epi Info (CDC) version 7.2.3.1 program was used for the univariate analysis, using the x^2 test, considering a significance level of 5% ($p < 0.05$). This study was approved by the Research Ethics Committee of the Federal University of Roraima (CAAE: 20669919.9.0000.5302/ Opinion: 3.638.438).

RESULTS

When evaluating the sociodemographic data of the 246 participants (Table 1), most of them (50 individuals) belonged to the age group of 30 to 39 years (20.3%), followed by 48 between 19 and 29 years old (19.5%). The mean age was 39.42±15.81. On the other hand, the distribution between genders was equal, since the sample consisted of 123 men and 123 women, a random distribution.

Regarding marital status, the 79 married participants (32.1%) or the 55 who were in a stable union (22.3%) represented the majority of the sample universe, therefore, 54.4% individuals had a steady sexual partner in the time of study. There was an even higher prevalence (78.0%) of those who declared themselves brown (192 participants), followed by 21 black (10.9%) and 26 white (10.6%).

As for education, despite 93 participants having between 8 and 12 years of study (37.8%), 24 had completed higher education (9.7%), while 14 (5.7%) had never even studied. Regarding monthly family income, income of up to 1 minimum wage was the most prevalent with 160 participants (65.0%), followed by 69 individuals who received between 1 and 3 minimum wages (28.0%).

When asked about behaviors related to sexual life (Table 2), 244 participants declared to be heterosexual (99.2%) and 207 to be sexually active (84.1%). Regarding the number of sexual partners throughout life, 186 (75.6%) reported up to 10 partners, 36 (14.6%) more than 10 partners and 24 people (9.8%) did not answer this question. Among the 207 participants who declared to have an active sexual life, 147 (71.0%) reported that they did not use condoms during sexual intercourse, more commonly among women (67.3%). When asked if they had ever had a sexual relationship with people of the same sex, only 05 participants answered yes (2.2%)

Table 1. Sociodemographic profile of the residents of the Nova Amazônia Settlement Project, Boa Vista, state of Roraima

Variable	Absolute Frequency (n)	Relative Frequency (%)
Age group		
14-18 years	33	13,4
19-29 years	48	19,5
30-39 years	50	20,3
40-49 years	35	14,2
50-59 years	42	17,2
Over 60 years old	38	15,4
Gender		
Male	123	50,0
Female	123	50,0
Marital status		
Single	96	39,0
Married	79	32,1
Stable union	55	22,3
Divorced	08	3,3
Widowed	08	3,3
Education		
Did not study	14	5,7
1-3 years of study	40	16,3
4-7 years of study	61	24,8
8-12 years of study	93	37,8
Incomplete higher education	14	5,7
Complete higher education	24	9,7
Race/Color		
Yellow	01	0,5
White	26	10,6
Brown	192	78,0
Black	27	10,9
Monthly family income (minimum wage)		
Up to 1 minimum wage	160	65,0
1-3 minimum wages	69	28,0
3-5 minimum wages	06	2,5
Above 5 minimum wages	11	4,5

Most participants (182) stated that the first sexual intercourse occurred between 13 and 18 years of age (81.3%), however 8.9% of the sample universe reported that the first intercourse took place between 6 and 12 years of age. Of these, 05 were women and 15 men. When asked if they had ever had drunk sex, 119 people (50.1%) answered yes, 41 women and 78 men.

As for the occurrence of STIs, 131 participants (53.2%) reported having already been tested to detect these infections and 09 (3.7%) said they had

already been diagnosed with STIs. Among these, the most prevalent was gonorrhea (5 participants/2.0%), followed by hepatitis B (2 participants/0.8%).

Table 2. Sexual behavior of residents of the Nova Amazônia Settlement Project, Boa Vista, state of Roraima

Variable	Absolute Frequency (n)	Relative Frequency (%)
Sexual orientation		
Homossexual	00	0,0
Heterossexual	244	99,2
Bissexual	02	0,8
Active sex life		
Yes	207	84,1
No	39	15,9
Number of sexual partners throughout life		
1-10 partners	186	75,6
More than 10 partners	36	14,6
Did not answer	24	9,8
Condom use (active sex life)		
Yes	60	29,0
No	147	71,0
First sexual intercourse		
Between 6 and 12 years old	20	8,2
Between 13 and 18 years old	182	74,0
Over 19 years old	22	8,9
Did not answer	22	8,9
Relationship with people of the same sex		
Yes	05	2,2
No	217	97,8
Taking an IST test		
Yes	131	53,2
No	115	46,8
Contracted any STIs throughout life		
Yes	09	3,7
No	237	96,3
Have you ever had drunk sex?		
Yes	119	50,1
No	115	49,9
Do you use illegal drugs?		
Yes	21	8,8
No	225	91,5

Regarding the knowledge of the 246 study participants about STIs (Table 3), the following results were evidenced: 190 people (77.3%) stated that the main form of transmission of an STI is through sexual intercourse and contaminated blood, while 56 (22.7%) provided other answers; 184 individuals (74.8%) defended that the correct use of condoms prevents the transmission of STIs; 219 (89.0%) stated that anal intercourse without a condom can transmit STIs and 222 (90.2%) that oral sex without a condom can also transmit STIs. However, despite this scenario of relatively positive responses, when asked whether HIV and AIDS meant the same thing,

72.3% participants (178) said yes and 214 (87.0%) claimed that the appearance of warts on the penis or in the vagina has nothing to do with STIs.

When answering questions about the treatment of some STIs, 223 people (90.6%) stated that in the event of an STI, it is no use treating only one of the partners, 178 (72.3%) that AIDS is treatable, 182 (74.0%) that treating pregnant women who have HIV can prevent transmission to the child and 231 (94.0%) argued that syphilis cannot be cured without treatment.

Regarding the woman's right to choose, when asked if it was a woman's right to ask her partner to use a condom, 241 participants (98.0%) said yes. When asked if it is a woman's right to refuse to have sexual intercourse if her partner refuses to use a condom, 226 participants (91.9%) answered yes.

Table 3. Knowledge and perceptions of residents of the Nova Amazônia Settlement Project, Boa Vista, state of Roraima

Variable	Absolute Frequency (n)	Relative Frequency (%)
What is the main form of transmission of STIs?		
Embrace and live in the same space	12	4.9
Share toilets and towels	21	8.5
Share cutlery	23	9.3
Sexual intercourse and blood contamination	190	77.3
Does the correct use of condoms during every sexual encounter prevent the transmission of STIs?		
Yes	184	74.8
No	41	16.7
Do not know	21	8.5
Can anal intercourse without a condom transmit STIs?		
Yes	219	89.0
No	27	11.0
Can oral sex transmit STIs?		
Yes	222	90.2
No	24	9.8
Can warts on the penis or vagina be an STI?		
Yes	32	13.0
No	214	87.0
What is the best way to prevent an STI?		
Only practice anal sex	01	0.4
Only practice oral sex	03	1.2
Only having sex with a partner who looks healthy	10	4.1
Using condoms and avoid too many partners	232	94.3
How can HIV be transmitted?		
Hugs	03	1.2
Sharing cups	02	1.9
Living near a virus carrier	03	1.2
Sexual intercourse	238	96.7

Variable	Absolute Frequency (n)	Relative Frequency (%)
Is it worth to be treated for STIs without treating the sexual partner?		
Yes	23	9.4
No	223	90.6
Is AIDS treatable?		
Yes	178	72.3
No	68	27.7
Is only having sex with people who appear to be healthy a safe way to protect yourself from STIs?		
Yes	63	25.6
No	183	74.4
Contraceptives for preventing pregnancy protect against STIs?		
Yes	25	10.2
No	221	89.8
Is it a woman's right to refuse to have sex with a man who does not want to use a condom?Yes		
Yes	226	91.9
No	20	8.1

The prevalence of detection of STIs in the study sample (Table 4) was 4.1% (10 individuals) of a total of 246 study participants (123 women and 123 men). Among the reactive participants, 06 (2.4%) had syphilis, 03 (1.2%) hepatitis B and 01 (0.4%) HIV. None of the participants had a reactive result for hepatitis C. It should be noted that none of the diagnosed participants, at the time of the study, was aware that they were infected.

Table 4. Diagnosis of STIs among residents of the Nova Amazônia Settlement Project, Boa Vista, state of Roraima

Sexually Transmitted Infection	Reactive Result	Non-Reactive Result
HIV/AIDS	01 (0.4%)	245 (99.6%)
Syphilis	06 (2.4%)	240 (97.6%)
Hepatitis B	03 (1.2%)	243 (98.8%)
Hepatitis C	00 (0.0%)	246 (100.0%)

Among the people who tested Reactive for any STI, 02 were women and 08 men. The relationship between the gender of the participants and the presence of STIs can be seen in Figure 1, below.

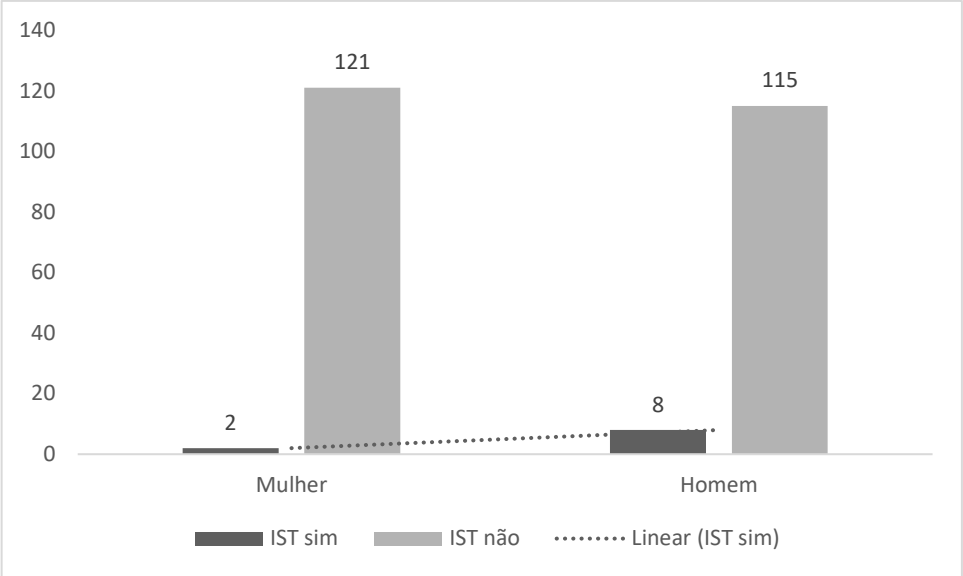

Figure 1. Relationship between the gender of study participants and the presence of STIs.

The association between the STI Reactive result and sociodemographic characteristics, when applying the chi-square test (significance level $p<0.05$) was statistically significant for: being male ($p=0.04$), more 40 years old ($p=0.003$) and more than 10 sexual partners throughout life ($p=0.03$). On the other hand, there was no significant association for the sample analyzed between having a steady partner and having an STI ($p=0.10$), education level and having an STI ($p=0.12$), family income and having an STI ($p=0.13$), race and having an STI ($p=0.32$), having drunk sex and having STIs ($p=0.22$). There was also no evidence of an association between gender ($p=0.44$) or between education ($p=0.85$) and the level of knowledge about the transmission of STIs ($p=0.44$).

DISCUSSION

When observing the sociodemographic data of the 246 study participants, most belong to the age group from 30 to 39 years old (20.3%), followed by those between 19 and 29 years old (19.5%); the average age was 39.42 years. This result is corroborated by a study on a rural settlement project in the state of Mato Grosso do Sul, which indicates the prevalence of the same age group.[2] It is noteworthy that subsistence agriculture is the main economic activity developed by the settlers and that age, health and physical vigor are essential for the maintenance of daily production.

Among the participants, the distribution of men (123) and women (123) was equal and random, a result that differs

from other studies showing that most residents of rural settlements are male.[2,8,9]

The most prevalent marital status was married (32.1%) or living in a stable union (22.3%). This finding is very common in this population, since the right to a plot of land is often related to the existence of a consolidated and heterosexual family.[9,10] Fietz et al. point out in their surveys that among the settlers in the state Mato Grosso do Sul, 83% were married[2]. With marriage, the origin of the family, the man guarantees the affiliation and consequently the succession in the possession of the land.[10]

As for the years of study, the PANA population had a higher level of education than expected, since in other studies the average education level of the participants was 5.2 years of study, that is, incomplete elementary school[2,5], while most participants (37.8%) in this study were between 8 and 12 years old, that is, they had completed high school and 9.7% had completed higher education. It is noteworthy that Roraima is the Brazilian state that, in percentage terms, has the highest number of people with higher education, a fact that may directly reflect this finding.

When asked about their sexual orientation, only 02 people declared themselves homosexual. In a study carried out in a rural settlement in the state of Santa Catarina, the author states that it is common in these communities to define heterosexuality as an imposed standard and classified as normal and moral, and that few people have the courage to break this standard[10].

Monthly family income of up to 1 minimum wage was the most prevalent (160/65.0%), insufficient income when considering that most families consisted of 4 people. Other existing studies confirm the low family income, social inequities and precarious health present in Brazilian agrarian reform camps and settlements and in the rural population.[11,12] This result confirms the social inequities experienced by this population and the fact that the transfer of land, without providing the means to use it, does not solve their economic situation.

In this context, it is evident that settlers are exposed to vulnerabilities with regard to health, both for men and women, as they perform heavy work, subsistence agriculture, and are constantly exposed to the phenomena and instabilities of nature and neglect by the public power.[5]

In this population, mortality rates, general and infant, and morbidity rates are generally higher than the national average, and there are few family planning, women's health and STI prevention programs and actions.[11] Despite the existence of the National Health Policy for the Integral Health Care of Rural, Forest and Water Populations (PNSIPCFA), which aims to promote access to health services, reduce risks and health problems and improve

health indicators and the quality of life of these populations, precarious working and living conditions in rural areas, difficult access to health services and specialized assistance, as well as cultural barriers and lack of information contribute to aggravate the situation even further.[11,13]

It is noteworthy that the PANA community does not have a Basic Health Unit (BHU) and when they need health care, they are obliged to go to the nearest BHU, which is about 15 km away. This difficulty was also evidenced regarding the referral of participants who obtained the reactive result for some STI, however, all managed to be assisted and receive the recommended health care.

It is estimated that more than one million cases of STIs occur worldwide every day. In Brazil, the rapid growth in the number of cases may be related to the effectiveness of the health care network in providing timely quality services, as well as the social, biological, cultural and behavioral aspects of the population. Studies show a higher occurrence of infection among individuals exposed to risk situations, such as multiple partners, unprotected sex and drug use.[14]

The prevalence for STIs found in this study was 4.1% (10 individuals). Among the reactive participants, 06 (2.4%) had syphilis, 03 (1.2%) hepatitis B and 01 (0.4%) HIV. None of the participants had a reactive result for hepatitis C. Fonseca et al. studied the young population of the state of Roraima, and found a prevalence for STIs of 5.8%, specifically for HIV of 0.91% and syphilis of 3.2%.[15] In another study on another type of vulnerable population living in Roraima, sex workers, the prevalence for STIs was 13.8% overall, with 12.5% related to syphilis and 1.4% to HIV.[16] In the population of Burkina Faso, the prevalence for hepatitis B was 9.15% and for hepatitis C, 3.6%, much higher than those found in the present study.[17]

There is a higher prevalence among STIs for syphilis, a result corroborated by other studies.[18,19] In Colombia, in a study carried out with the prison population, the prevalence of syphilis was 1.25%.[20] In addition, it should be noted that in 2019, Roraima was the fifth Brazilian state with the highest rate of acquired syphilis (111.3 cases/100,000 inhab.), well above the national average, which may explain the higher prevalence of syphilis in the present study.[21]

The association between the STI Reagent result and sociodemographic characteristics was statistically significant for: being male (p=0.04), being over 40 years old (p=0.003) and having had a relationship with more than 10 sexual partners during their lives (p=0.03). The association between being a man and the occurrence of STIs is corroborated by other researchers such as Pereira et al. who point out that the profile of psychosocial vulnerability to infection with STIs and HIV is being a man, aged 18-41 years and

having multiple partners[21,22]. Another study, carried out in Burkina Faso, also points out a relationship between being a man and having an STI, in this case the STIs studied were hepatitis B and C, however, in addition to the association with gender, the researchers also point to an association between infection and low education[17], a fact that was not evidenced in this study.

As for marital status, studies show that being married increases the risk of contracting STIs, as it promotes a false idea that as partners are fixed, there is greater safety in the relationship, without the need to use condoms.[23] The present study did not detect a significant association between being married or living in a stable union and the occurrence of STIs, similarly to the study by Sequeira et al. when evaluating the prevalence of infection with *C. trachomatis*.[24]

Among the 207 participants who claimed to have an active sexual life, 71.0% reported that they did not use condoms during sexual intercourse, this being more common among women (67.3%). A study carried out with incarcerated women indicated that non-adherence to condoms among married women was very frequent. Women claimed not to need to use it because they had only one partner and because they claimed not to be able to enjoy using condoms during sexual intercourse[23], a fact that reflects the social machismo in which women are inserted. These ideas are routinely defended by many women, a fact that explains the increase in cases of STIs among women in the world.

There was no evidence of a significant association between family income or education and having STIs, or having greater knowledge about them. This result was also pointed out by Mangabeira et al.[16]

Regarding questions related to sexual behavior and the risks arising from it, it is observed that 81.3% participants had their first sexual intercourse between 13 and 18 years old, however 8.9% had it between 6 and 12 years old. Among the 20 participants who started their sex life between 6 and 12 years, most were male (15 participants). This difference between genders is probably explained by sociocultural issues, as men are asked to start their sexual life as an affirmation of their masculinity. Thus, the early onset of sexual life can be seen, a fact that can act as a risk factor for contamination with STIs. Other studies also point to this early sexual initiation, more prevalent among men, and its characterization as a risk factor.[22,25]

Approximately half (50.1%) participants reported that they had already had drunk sex, 41 women and 78 men. Several studies point to this same finding and argue that the use of alcohol and other drugs at the time of sexual intercourse reduces the sense of responsibility and adherence to condoms, leaving the individual more vulnerable to contamination with an STI.[18,22,25,26,27] Based

on the findings of this study, it is clear that there is a need to implement programs not only aimed at preventing STIs, but also at preventing the use of alcohol and other drugs, requiring the construction of new precepts regarding the relationship between health and rural work in the scope of public health and its agents.

As for the knowledge presented by PANA residents about STIs and their prevention mechanisms, it is clear that despite the majority agreeing on the importance of using condoms during sexual intercourse, adherence is very small, a fact that makes us question why that the information is not transformed into protective attitudes and behaviors. It is also observed that although most participants have demonstrated a basic knowledge of the topic, it is still superficial and needs to be better elaborated. Thus, it is important to understand that the perception of risk is different between groups of people in their different age groups, motivated by the socioeconomic, demographic and cultural aspects to which they are exposed[28]. Therefore, it is necessary to consider the disease process collectively, better understanding how social determinants contribute to the spread of the disease.

The amount of research on populations in rural settlements is still very small and becomes even smaller when it comes to the seroprevalence of STIs in these communities, which is considered a limiting factor for this study, since the prevalence of these infections among rural settlers is virtually unknown, making it difficult to establish benchmarks. In addition, it is worth considering that another limitation of this study is the fact that it is cross-sectional and does not follow up later participants who obtained a reactive result for STIs.

CONCLUSION

In conclusion, for the studied sample, the prevalence of STIs was 4.1% and the vulnerability profile associated with contamination was: being a man, being over 40 years old and having more than 10 sexual partners throughout life. It is believed that the data produced from this investigation can contribute to the formulation and implementation of preventive sexual health services aimed at people living in rural settlements. Due to the identification of risky sexual behaviors in the studied population, mainly characterized by very low adherence to condom use, it is necessary to carry out an early diagnosis and monitor new cases.

Finally, this study reinforces the importance of consolidating the National Health Policy for the Integral Health Care of Rural, Forest and Water Populations, since such policy seeks to promote, through education and health care, the improvement of quality of life and health of the rural population.

REFERENCES

1. Instituto Brasileiro de Geografia e Estatística (IBGE) [internet]. Vamos conhecer o Brasil. Nosso povo. Características da população [acesso em 10 fev 2021]. Disponível em: http:www.ibge.gov.br

2. Fietz VR, Salay E, Watanabe EAMT. Condições socioeconômicas, demográficas e estado nutricional de adultos e idosos moradores em assentamento rural em Mato Grosso do Sul, MS. Segurança Alimentar e Nutricional. 2010;17(1):73-82.

3. Caraffa M. Projeto de Assentamento Rural: o parcelamento e as dinâmicas ambientais no Zumbi dos Palmares - Iaras/SP. Paranoá. 2016;17:1-11.

4. INCRA. Portal Brasil [internet]. Agricultores comemoram primeira década do Assentamento Nova Amazônia. [acesso em 10 fev 2021]. Disponível em: http://www.brasil.gov.br/cidadania-e-justica/2013/11/agricultores-comemoram-criacao-do-assentamento-nova-amazonia.

5. Ebling SBD, Falkembach EMF, Nascimento LA, Silva MM, Silva SO, Minussi PS. As mulheres e suas 'lidas': compreensões acerca de trabalho e saúde. Trab. Educ. Saúde. 2015;13(3):p. 581-96.

6. Pontes AGV, Rigotto RM, Silva JV. Necessidades de saúde de camponeses em conflito ambiental frente à instalação de Perímetros Irrigados. Ciência & Saúde Coletiva. 2018;23(5):1375-86.

7. Pinto VM, Basso CR, Barros CRS, Gutierrez EB. Factors associated with sexually transmitted infections: a population based survey in the city of São Paulo, Brazil. Ciência & Saúde Coletiva. 2018; 23(7):2423-32.

8. Fontoura Júnior EE, Souza KR, Renovato RD, Sales CM. Relações de saúde e trabalho em assentamento rural do MST na região de fronteira Brasil-Paraguai. Trab. Educ. Saúde. 2012;(3):379-97.

9. Alvarenga MRM, Rodrigues FP. Indicadores socioeconômicos e demográficos de famílias assentadas no Mato Grosso do Sul. Revista de Enfermagem da UERJ. 2004;12(3):286-91.

10. Valadão FA. A lesbianidade e a divisão sexual do trabalho no assentamento rural 25 de julho no estado de Santa Catarina. Revista Pegada. 2019;20(1):250-8.

11. Scopinho RA. Life and health conditions of a worker in a rural settling. Ciência & Saúde Coletiva. 2010;15(Supl. 1):1575-84.

12. Souza IV, et al. Coping with problems that impact on the health of a socially vulnerable community from the residents' perspective. Ciência & Saúde Coletiva. 2019;24(5):1647-56.

13. Rückert B, Cunha DM, Modena CM. Saberes e práticas de cuidado em saúde da população do campo: revisão integrativa da literatura. Interface Comunicação, Saúde e Educação. 2018;22(66):903-14.

14. Araújo TME, Araújo Filho ACA, Feitosa KVA. Syphilis prevalence among women in the prison system of a northeastern Brazilian capital. Rev Eletr Enf. 2015;17(4):1-10.

15. Fonseca AJ, Minotto HRT, Farias CB, de Jesus DV, Moraes HS et al. Knowledge, perception and

seroprevalence of HIV/STIS among young adults in Brazilian Amazon Region: a population-based study. J AIDS Clin Res. 2019;10(1):1-7.

16. Mangabeira CL, Zambonin F, Reis JKC, Costa WC, Camargo C, Sequeira BJ. Infecções sexualmente transmissíveis em profissionais do sexo: características e prevalência no extremo norte brasileiro. Saúde Santa Maria. 2020; 46(2): 1-12.

17. Meda N, et al. Hepatitis B and C vírus seroprevalence, Burkina Faso: a cross-sectional study. Bull World Health Organ. 2018; 96:750-9.

18. Fustàa X, Fuertes I, Lugo-Colónb R, Blanco JL, Baras N, Alsina-Gibert M. Emergencia de la sífilis: estudio descriptivo de pacientes diagnosticados de sífilis en un hospital de tercer nivel entre 2011 y 2015. Med Clin (Barc). 2017;149(12):536-9.

19. Silva PAS, Gomes LA, Amorim-Gaudêncio C, Lima KPN, Medeiros LB, Nogueira JA. Syphilis in women coming out of the prison system: prevalence and associated factors. Rev Rene. 2018;19:1-8.

20. Korenromp EL, et al. Prevalence and incidence estimates for syphilis, chlamydia, gonorrhea, and congenital syphilis in Colombia, 1995-2016. Rev Panam Salud Publica. 2018; 42 (1):1-12.

21. Brasil. Ministério da Saúde (MS). Boletim epidemiológico Sífilis 2019. Brasília: Ministério da Saúde, 2019.

22. Pereira TG, Araújo LF, Negreiros F, Barros Neto RNS. Análise do comportamento sexual de risco à infecção pelo HIV em adultos da população em geral. Psico (Porto Alegre). 2016;47(4):249-58.

23. Alves MJH, Pereira EV, Belém JM, Quirino GS, Maia ER, Alencar AMPG. Factors of risk in sexual and reproductive health of women prisoners: integrative review. Rev Baiana Enferm. 2017;31(1):1-13.

24. Sequeira BJ, Loureiro ECB, Costa WC. Factors associated with Chlamydia trachomatis infection in women resident in the state of Roraima, Brazil. J Bras Doenças Sex Transm. 2017;29(4):125-30.

25. Miranda PSF, Aquino JMG, Monteiro RMPC, Dixe MACR, AMB Luz, Moleiro P. Sexual behaviors: study in the Youth. Einstein. 2018;16(3):1-7.

26. Aguiar RB, Leal MCC, Marques APO, Torres KMS, Tavares MTDB. Elderly people living with HIV - behavior and knowledge about sexuality: an integrative review. Ciência & Saúde Coletiva. 2020;25(2):575-84.

27. Negin J, Geddes L, Brennan-Ing M, Kuteesa M, Karpiak S, Seeley J. Sexual behavior of older adults living with HIV in Uganda. Archives of Sexual Behavior. 2016;45(2):441-9.

28. Sousa IV, Brasil CCP, Vasconcelos DP, Silva KA, Bezerra IN, Finan TJ, Silva RM. Diagnóstico participativo para identificação de problemas de saúde em comunidade em situação de vulnerabilidade social. Ciência & Saúde Coletiva. 2017;22(12):3945-54.