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ORIGINAL ARTICLE

SOCIAL DETERMINANTS OF HEALTH AND CONDOM USE IN SEXUAL RELATIONSHIPS AMONG RURAL WOMEN

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ABSTRACT

Objective: to verify the association between social determinants of health and condom use in sexual intercourse in women from a rural community. Method: cross-sectional study, conducted with 259 women from a rural community in Bahia, Brazil, in the period from July 2019 to January 2020. A form with sociodemographic and health questions was applied and frequency distribution and association were performed using Pearson's Chi-square test, considering a statistical significance when $p<0.05$. Results: statistical significance was found in the proximal determinants layer: regarding the use of contraceptive methods ($p=<0.001$) and in the intermediate determinants layer: regarding housing situation ($p=0.038$), number of income dependents ($p=<0.001$) and access to health services ($p=0.033$). Conclusion: there was an association between social determinants of health and condom use by rural women. These findings indicate a need to improve care for this population.

DESCRIPTORS: Women; Social Determinants of Health; Rural Population; Condoms; Health.

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INTRODUCTION

In the last 30 years, scientific evidence has been accumulating in explaining how health is sensitive to the social environment through conceptual models of social determinants of health (SDH)[1]. Dahlgren and Whitehead's model[2] is composed of five interdependent layers. The first covers individual characteristics; the second covers factors related to personal behavior and lifestyles; the third is composed of community and support networks; the fourth layer is represented by living and working conditions; and the fifth includes the macro-determinants (economic, cultural, and environmental conditions of society)[3].

Many behaviors related to disease prevention are determined by the physical, economic, social, and personal resources a person must achieve his or her goals, satisfy his or her needs, and deal with the environment[4-5], a situation that applies to behavior in sexual relationships and condom use. Social inequities among populations are factors that lead to women's dependence and subordination in making decisions about their health care, including prevention behaviors for Sexually Transmitted Infections (STIs)[6].

Data from the Survey on Knowledge, Attitudes and Practices in the Brazilian Population points out that, although 94% of Brazilians between 15 and 49 years of age know about the importance of condoms as a preventive method for pregnancy and STIs, the number of people who do not adopt this conduct is still significant[7]. A narrative review on condom uses in Brazil observed that there are large variations among national surveys regarding the characterization of the different types of sexual partnerships and time intervals investigated[8].

According to data from the World Health Organization (WHO), more than one million new cases of curable STIs in the world among people aged 15 to 49 years are diagnosed every day[9]. In relation to STI prevention, it is important to point out that, while contraceptives have gained popularity, the practice of unprotected sex and its coexistence with infections remain alarming[10].

With regard to SDH, rural communities experience contexts marked by simplicity and social inequality, facing challenges and obstacles with regard to access to social services, education, and health, if compared to urban areas[11].

Most often, rural populations are not included in national health surveys, causing a limited knowledge, with generalized expressions about this population. At this juncture, the importance of knowing the SDH of rural women stands out due to the possibility of association with practices and/or health problems, such as condom use. It is believed that information resulting from this study can contribute to the design of strategies that will expand the context of health care for the rural population and, in particular, for women.

Thus, the objective of this study was to verify the association between SDH, and condom use during sexual intercourse among women in a rural community.

METHOD

Cross-sectional study, conducted with women from a rural community in the municipality of Camaçari-BA. Data collection occurred in the territorial area covered by the Family Health Unit in the period from July 2019 to January 2020, through interviews with application of sociodemographic and health forms. Due to the characteristics of the population, a non-probabilistic convenience sample was adopted.

The eligibility of the participants met the following criteria: being registered at the

Family Health Unit and being at least 18 years old. Women who did not present psychological and/or emotional conditions to interact with the researcher at the time of collection were excluded.

Data were stored and analyzed in the statistical software Statistical Package for the Social Science version 20.0. Absolute and relative frequencies were calculated for the study variables. To verify the association between condom use in sexual intercourse and social determinants of health, Pearson's chi-square test was used, considering statistical significance when $p<0.05$.

The analysis was organized based on the layers of Dahlgren and Whitehead's Social Determinants of Health Model. The first layer related to individual determinants: age and race. The second refers to the behavior and lifestyle adopted by the individual: sexual initiation, number of sexual partners in life, use of contraceptive methods, number of pregnancies and abortions. The third covers social and community networks: religion, cohabitation with the partner, and support groups or social networks. The fourth addresses the intermediate determinants: education level, housing situation, family income, number of income dependents, and access to health services. The fifth comprises the distal determinants, however, it was not addressed because it corresponds to the macro-determinants of supranational character, such as globalization[12].

The study was approved by the Research Ethics Committee of the School of Nursing of the Federal University of Bahia under opinion number 3246291.

RESULTS

The study sample consisted of 259 women. According to the individual determinants layer of the SDH model, there was a predominance of the age group 30 to 49 years 123 (47.5%) and who self-reported to be black/black 231 (89.2%).

Regarding the proximal determinants, it can be observed that 146 (57.7%) began their sexual lives at the age of 16 or older. Of these, 175 (72.9%) had one to three sexual partners in their lives and 175 (67.6%) use some contraceptive method. Regarding pregnancy, 237 (91.5%) reported having had a pregnancy and 66 (25.9%) said they had already had an abortion.

Regarding the influence of social networks, it is observed that 196 (75.7%) had religion, 185 (71.4%) cohabited with their partner, and 148 (51.1%) had no support group or social network they could count on.

As for the intermediate determinants, there was a predominance of women who had nine or fewer years of schooling 122 (47.1%), with monthly income lower than one minimum wage 87 (33.7%) and who lived in their own and/or assigned house 223 (86.1%). Most reported having up to four people dependent on their family income 177 (76.3%) and having exclusively public access to health services 138 (53.1%).

Table 1 describes the association between condom use and the variables in tiers one and two of the Social Determinants of Health Model. There was no significant association between tier one determinants and condom use. In the analysis of the association between condom use and the variables of layers two of the model, statistical significance was observed with the use of contraceptive methods ($p=0.001$), obtaining a higher proportion among 76 (96.2%) of the interviewees.

Table 1 - Association between layers 1 and 2 of the Social Determinants of Health Model and condom use in sexual intercourse in women from a rural community. Camaçari, BA, Brazil, 2020

Layers	Use condoms during sexual intercourse		p-value
	Yes (n=96)	No (n=158)	
Layer 1 - Individual Determinants			
Age group (in years) (n=259)			
18 to 29	34(39,5)	52 (60,5)	0,709
30 to 49	43(35,2)	79 (64,8)	
>49	19 (41,3)	27 (58,7)	
Color (n=259)			
Black/Brown	82 (36,3)	144 (63,7)	0,158
White/others	14 (50)	14 (50)	
Layer 2 - Proximal Determinants			
Start of sexual life (in years) (n=253)			
< 16	40 (37,7)	66 (62,3)	0,992
≥ 16	55 (37,7)	91 (62,3)	
Number of sexual partners in life (n=240)			
1 to 3	64 (36,8)	110 (63,2)	0,187
>3	30 (46,2)	35 (53,8)	
Use any contraceptive method (n=259)			
Yes	93 (53,1)	82 (46,9)	**<0,001**
No	3 (3,8)	76 (96,2)	
Pregnancy (n=259)			
Yes	91 (38,6)	145 (61,4)	0,363
No	5 (27,8)	13 (72,2)	
Abortion (n=259)			
Yes	29 (43,3)	38 (56,7)	0,28
No	67 (35,8)	120 (64,2)	

Source: Authors (2020)

Table 2 describes the association between condom use and the variables of layers three and four, represented by the influence of social networks and the intermediate determinants. There was no significant association between tier three variables and condom use. As for the intermediate determinants, a significant association was observed between condom use with housing status (p=0.038), number of income dependents (p=<0.001), and access to health services (p=0.033).

Table 2 - Association between layers 3 and 4 of the Social Determinants of Health Model and condom use in sexual intercourse in women from a rural community. Camaçari, BA, Brazil, 2020

Layers	Use condoms during sexual intercourse		p-value
	Yes (n=96)	No (n=158)	
Layer 3 - Influence of social and community networks			
Religion (259)			
With religion	71 (37)	121 (63)	0,637
Without religion	25 (40,3)	37 (59,7)	
Cohabiting with partner (n=259)			
Yes	63 (34,2)	121 (65,8)	0,058
No	33 (47,1)	37 (52,9)	
Support groups or social networks (n=259)			
Yes	43 (40,2)	64 (59,8)	0,502
No	53 (36,1)	94 (63,9)	
Layer 4 - Intermediate Determinants			
Level of education (n=259)			
Up to elementary	41 (33,9)	80 (66,1)	0,419
High school incomplete	22 (44)	28 (56)	
High school complete	33 (39,8)	50 (60,2)	
Housing situation (n=259)			
Own and/or rented house	88 (40,4)	130 (59,6)	**0,038**
Rented house	8 (22,2)	28 (77,8)	
Monthly family income in minimum wage (n=258)			
<1	29 (33,3)	58 (66,7)	0,575
1	34 (41)	49 (59)	
>1	32 (38,6)	51 (61,4)	
Number of income dependents (n=232)			
1– 4	78 (44,8)	96 (55,2)	**<0,001**
>4	9 (16,7)	45 (83,3)	
Access to health services (n=259)			
Exclusively public	60 (43,8)	77 (56,2)	**0,033**
Public and private	36 (30,8)	81 (69,2)	

Source: Authors (2020)

DISCUSSION

In the sample investigated, a high percentage of women who have sexual intercourse without using condoms was evidenced. A study conducted in two rural communities of Minas Gerais found that 86.2% of women did not use condoms to prevent infections, presenting

a significant association with the marital status of married/stable union/widower[5]. The credibility and knowledge of the partner were pointed as the main justifications for not using condoms[10].

The use of condoms as a method that offers a double protection, either to avoid unwanted pregnancy or to prevent an STI, is still not chosen as the main protective factor in the sexual relations of the investigated women, pointing to the importance of information on the subject, reinforcing the need for health education.

From the perspective of the model of SIH, referring to the first layer, it was observed a population aged between 30 and 49 years. This age group is the period when women are in the reproductive phase and the vast majority dealing with accumulated assignments related to domestic work, family care and work outside the home[13]. This situation reflects the vulnerability that is being a woman and being occupied by several tasks every day, causing health promotion, disease prevention and control of existing diseases to take a back seat.

It is noteworthy that no significant association was observed between individual characteristics belonging to the first tier with condom use. However, a study conducted with women of childbearing age showed that people under 20 years old showed a higher frequency of barrier method use and a significant association between age and the choice of methods[4].

Still regarding the first layer, as for the variable color, there is a predominance of women self-declared as black and brown, which represents the profile of the population of Bahia, whose composition has a higher proportion of black people (81.1%)[14]. A study developed in the rural area of Pelotas, in southern Brazil, found that being a woman, older and non-white is an important vulnerability factor in the rural population[15]. Moreover, these aspects are negatively related to the quality of life of these people, either by limitation in work, leisure, aesthetic changes, appearance of comorbidities or dependence on other individuals to relate.

Analyzing the second tier, regarding sexual initiation, almost half of the interviewees had coitus before the age of 16. In addition, the use of condoms in all sexual relations was mentioned in a smaller proportion by the study participants, leaving them exposed to STIs and unplanned pregnancy. The early onset of sexual activity has its influence according to the environment in which one is inserted, either by the behavior related to the interest in meeting the new, the feeling of satisfaction that is so talked about or the need to belong to a group[16]. Sexual intercourse with more than three partners throughout life and the non-prevalent use of condoms were identified in the study. Given these results, one should analyze and implement prevention strategies that meet the demands and specificities of this population, aiming to reduce their vulnerabilities.

When the use of some contraceptive method was evaluated, a higher frequency was identified among the women who reported using it. Thus, although some women did not use condoms, they used another method of protection, aimed primarily at preventing pregnancy. In assessing the association between contraceptive method use and condom use in all relationships, the association was statistically significant.

A research conducted in the countryside of northeastern Brazil showed that the use of the contraceptive pill was the most used method among women[10]. This aspect deserves special attention from health professionals, considering that the population protects itself only against pregnancy, leaving it vulnerable to STI. These data lead us to reflect on the need to invest in educational activities with an emancipatory approach, related to sexual and reproductive planning, for the population in general, but especially for the female population, contemplating the diversity of women, among them the rural ones.

Although with no statistically significant association, the data reveal a higher percentage of condom use among women who have had a pregnancy and abortion. These

results suggest that some of these women became pregnant, and even had abortions, because they had not used a preventive method. Thus, when considering the inequities existing in rural communities that influence health conditions and care for the prevention of diseases, it is appropriate to consider the need to expand access to a health system that responds to the Brazilian rural reality.

As for the third layer, which refers to belonging to a religion, it should be noted that practically all the interviewees affirmed having some religious belief. The exercise of a positive spirituality is seen as a protective factor, since it can contribute to the development of moral values, feelings of hope and confidence, a state of peace and harmony, help in interpersonal relationships and, thus, contribute to a life with healthy habits(17). Having a religious belief may represent an important resource in facing the suffering caused by diseases, but it can also have a negative consequence in cases of passive acceptance of the disease process and neglect of treatment for expecting only divine help(18).

As for cohabitation with a partner, the literature suggests that marriage may be predictive of better health status, although there is no set situation, since it consists of a complex relationship in which marital status can affect health outcomes as well as be affected by them; while there seem to be positive effects of marriage on health, justified by the report of people who have partners and greater satisfaction with overall quality of life, marital conflict can negatively affect the health of spouses(19-20).

Another positive aspect for health pointed out because of a stable union is that it can contribute to the increase of the couple's income when both work, to the sharing of coping and problem solving, to the monitoring of healthy behaviors or the discouragement of unhealthy behaviors(20).

However, having a steady partner can also be a motivating factor for dispensing with the use of condoms in sexual intercourse. A study conducted in rural communities in the municipality of Ouro Preto, MG, found a higher prevalence of not using condoms among people who maintain a fixed relationship, with the main justifications being the man's choice to use condoms, trust in the partner, and issues associated with social and economic factors(5).

In assessing the association between having support groups and condom use, no significant association was identified. It is known that support groups and social networks can reproduce the level of social cohesion and refer to the mutual aid device, since they can enable the exchange of knowledge and cooperation among its participants, thus playing an important role in improving health conditions(12-21).

Among the factors belonging to the fourth tier, there was an association between condom use with housing situation, number of income dependents, and access to health services.

Although no statistically significant association was found between schooling and condom use, it was noted that the highest frequency of women who did not use condoms was represented by the group with the lowest level of schooling. A research conducted with women of childbearing age, about SDHs and contraceptive method, found significance with the level of education and identified that women who had the lowest level, with up to nine years of schooling, showed a tendency not to use barrier methods(4). This also occurs regarding having an unplanned pregnancy, with low education being a contributing factor(22).

It is important to emphasize that the positive association between education and health care is well established, mainly because education can be considered as a proxy of socioeconomic status, since it has an influence on employment, earnings, and income, acting as a key to the position in the stratification system and consequently on the access to the means of health promotion and protection(23).

About housing conditions, it is observed that women live predominantly in their own and/or borrowed houses. This is a relevant aspect, because it refers to the fact that there are no expenses with rent, especially for a population that has a high percentage of health care costs.

In this study, although with no statistically significant difference between family income and condom use, it is known that low wages have an impact on health conditions, since purchasing power determines access to various goods and materials[24], which may include condom purchase[5].

As for the number of income dependents, a significant association was observed with condom use. The prevalence of women who have more than four income dependents is among those who reported not using condoms, which may have contributed to this association. The number of income dependents may be related to condom use from two perspectives: the larger number of dependents represents greater financial difficulty in acquiring the method; and the lack of condom use contributes to the increase in the number of dependents[4], which may form a vicious cycle.

When it comes to access to health services, there was a predominance of public services. This fact can be justified by the social profile of the research participants, consisting mostly of low-income women. The statistically significant association found between access to health services and condom use in this study may suggest that the free distribution of this device by primary health care services has the potential to contribute to such a result.

The rural population faces daily difficulties and challenges in seeking care, by living far from services, by waiting to have an appointment, by the vulnerability of assistance compared to the urban environment[25]. The Brazilian rural populations differ from urban populations in several factors that influence health care, including lower service coverage[15].

In short, the findings regarding the predominance of women with low education, low income, and access to health services primarily pubic, are common characteristics of populations living in rural communities, therefore, who have greater disadvantage in terms of health. The complexity of the interaction between social factors and health is even greater when gender inequalities are considered, since in Western countries the magnitudes of the effect of a particular SDH in women are greater than in men[23].

The limitation of the study was mainly due to the physical characteristics of the community, which restricted access to the participants and the implementation of social distancing in the face of the covid-19 pandemic, which imposed the interruption of data collection, resulting in the reduced sample, and the cross-sectional nature of the research not allowing to go beyond stating associations between variables.

CONCLUSION

For the sample investigated, contraceptive method uses, housing situation, number of income dependents, and access to health services, component variables of the layers of social determinants in health, have statistical significance with condom use in sexual intercourse.

The uniqueness of the data, although limited to a rural community, reveals the need for the development of strategies aimed at extending the context of health assistance and care to rural women, considering the social inequalities they experience and expanding actions focused on increasing adherence to condom use.

It is suggested that new studies be carried out that include women from other rural communities, making it possible to investigate other elements pertinent to reproductive

and sexual health, providing elements for managers and health teams to rethink and adopt actions and strategies for the promotion and prevention of diseases for this relevant population group in the national context, but with restricted access to health services.

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Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - Mota GS, Nascimento DFB do, Souza BBS de, Porto PN; Drafting the work or revising it critically for important intellectual content - Mota GS, Nascimento DFB do, Souza BBS de, Palmeira CS, Oliveira JF de; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - Mota GS, Oliveira JF de. All authors approved the final version of the text.

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