

Social determinants of health and vulnerabilities to sexually transmitted infections in adolescents

Determinantes sociais de saúde e vulnerabilidades às infecções sexualmente transmissíveis em adolescentes

Determinantes sociales de la salud y vulnerabilidades a las infecciones sexualmente transmisibles en adolescentes

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ABSTRACT

Objective: To verify the association between social determinants of health and the vulnerability of adolescents to Sexually Transmitted Infections (STIs). **Method:** Cross-sectional study, performed with 287 students aged 11 to 17 years, in the outskirts of Fortaleza, Ceará, Brazil, from August to September 2016. Two instruments were used, one destined to social determinants of health and another to investigating the vulnerability to STIs. The magnitude of associations was expressed through odds ratio and interval of confidence, considering a 5% significance level. This research was approved by the Research Ethics Committee of the Federal University of Ceará. **Results:** 212 (73.9%) adolescents were considered more vulnerable, with a score ≥ 4 . The intermediate social determinant "housing (home ownership)" obtained significant association with the vulnerability to STIs (p of 0.022; CI 1.1 to 3.3; OR 1.9). **Conclusion:** The intermediate social determinant "type of housing" influences the vulnerability to STAs.

Descriptors: Adolescent; Social Determinants of Health; Sexuality; Vulnerable Populations; School Nursing.

RESUMO

Objetivo: Verificar a associação entre os determinantes sociais de saúde e a vulnerabilidade dos adolescentes às Infecções Sexualmente Transmissíveis (ISTs). **Método:** Estudo transversal, realizado com 287 escolares de 11 a 17 anos, na periferia de Fortaleza, Ceará, Brasil, de agosto a setembro de 2016. Foram utilizados dois instrumentos, um destinado aos determinantes sociais de saúde e o outro à investigação da vulnerabilidade às ISTs. A magnitude das associações foi expressa através da razão de chances e intervalo de confiança, considerando-se nível de significância de 5%. A pesquisa foi aprovada pelo Comitê de Ética da Universidade Federal do Ceará. **Resultados:** 212 (73,9%) adolescentes foram considerados mais vulneráveis, com uma pontuação ≥ 4 escores. O determinante social intermediário "moradia (casa própria)" obteve associação significativa com a vulnerabilidade às ISTs (p de 0,022; IC 1,1 a 3,3; OR 1,9). **Conclusão:** O determinante social intermediário "tipo de moradia" influencia na vulnerabilidade às ISTs.

Descritores: Adolescente; Determinantes Sociais de Saúde; Sexualidade; Vulnerabilidade em Saúde; Serviços de Enfermagem Escolar.

RESUMEN

Objetivo: Comprobar si hay una asociación entre los determinantes sociales de la salud y la vulnerabilidad de los adolescentes a las Infecciones Sexualmente Transmisibles (IST). **Método:** Estudio transversal, realizado de agosto a septiembre de 2016 con 287 estudiantes de 11 a 17 años, en la periferia de Fortaleza, Ceará, Brasil. Se utilizaron dos instrumentos: el primer estaba destinado a los determinantes sociales de la salud y segundo al estudio de la vulnerabilidad a las IST. La magnitud de las asociaciones se calculó mediante la razón de posibilidades e intervalo de confianza, considerando el nivel de significancia del 5%. La investigación fue aprobada por el Comité de Ética de la Universidad Federal de Ceará. **Resultados:** Se consideraron más vulnerables a 212 (un 73,9%) adolescentes, con una calificación ≥ 4 puntuaciones. El determinante social intermedio "vivienda (casa propia)" obtuvo una asociación significativa con la vulnerabilidad a las IST (p de 0,022; IC 1,1 a 3,3; OR 1,9). **Conclusión:** El determinante social intermedio "tipo de vivienda" influye en la vulnerabilidad a las IST.

Descriptor: Adolescente; Determinantes Sociales de la Salud; Sexualidad; Vulnerabilidad en Salud; Servicios de Enfermería Escolar.

INTRODUCTION

Adolescence is a period of transition to adult life that consists in many changes, both in a biological and cognitive level, emotional and social, with adoption of new practices and behaviors. Such changes bring an intrinsic condition that makes adolescents susceptible to several situations of vulnerability⁽¹⁾.

Sexual intercourses significantly increase the vulnerability to Sexually Transmitted Infections (STIs) in adolescence, being this prevalence of 7.4% in male and 7.5% female adolescents, from 2007 to 2013 in South Korea, a country considered developed in relation to Brazil⁽²⁾.

Currently, Brazil comprises more than 40% of new infections by STIs, and adolescents and young adults, aged 15 to 19 years, are the most affected, corresponding to an increase of 53%, compared to the period from 2004 to 2013⁽³⁾.

"Vulnerability" and "being vulnerable" root conceptions of a greater susceptibility of the individual in relation to damages and health problems⁽⁴⁾. Vulnerabilities associated to social determinants of health may endanger the health of adolescents. Thus, some data, such as schooling level, color/ethnicity, socioeconomic conditions, family structure, social groups and gender issues, may significantly influence the early onset of sexual life in adolescents, making them susceptible to STIs⁽⁵⁻⁷⁾.

The early onset of sexual intercourses exposes adolescents to a long period of sexual activity and to more partners⁽⁸⁾. In a city of the South region of Brazil, for example, male adolescents with the first relation up to 14 years of age reported a greater number of partners, while 30% of the female adolescents in the same age group had not used contraceptive methods and 17.9% had not used a condom during their first sexual intercourse⁽⁹⁾. This early onset subjects the adolescent to a risky behavior, such as not using condoms, generating unwanted outcomes, e.g. STIs and an unplanned pregnancy⁽¹⁰⁾.

Social Determinants of Health (SDH), in turn, are a set of factors that characterize the particularities of individuals and reflect their insertion in time-space. They constitute a complex network of factors that threaten, promote or protect health. These factors are interrelated and condition the health-disease process in the specificity of the individual and in the comprehensiveness of the collective way of life. These may be grouped in categories or layers, which facilitates the selection of adequate interventions and the formulation of health policies⁽¹¹⁾.

The layers are disposed hierarchically, in which individual determinants are in the closest layer and refer to the characteristics intrinsic to the subject, such as gender, age, genetic factors, among others. The second layer corresponds to behavior and lifestyle. The third layer, to social and community networks that the individual has. The fourth layer, to factors related to living and working conditions. And the fifth and last layer contains macrodeterminants with the structural conditions of the environment in which the individual is inserted, such as socioeconomic, cultural and development characteristics⁽¹¹⁾.

SDH are also related to social, economic, cultural, ethnical/racial, psychological and behavioral factors that influence the occurrence of health problems and their risk factors in the population⁽¹²⁾.

Thus, considering adolescence as a period of greater vulnerability to changes in the life cycle, it is inferred that the subsidies

of this research assist nurses in effective actions, based on the identification of health determinants that may enhance the vulnerability to STIs during adolescence.

OBJECTIVE

To verify the association between social determinants of health and the vulnerability of adolescents to STIs, having the Model of Social Determinants of Health (MSDH) as theoretical referential.

METHOD

Ethical aspects

The research followed the ethical observations, according to Resolution no. 466/2012 of the National Health Council and was approved by the Research Ethics Committee of the Federal University of Ceará (UFC).

Design, location and period

This is a cross-sectional study that assessed the vulnerability to STIs in adolescents of a public school located in a neighborhood with low Human Development Index, with an average income of R\$ 349.75, occupying the 15th position in the extremely poor population ranking of the municipal network of Fortaleza, in Ceará⁽¹³⁾, from August to October 2016.

Population and sample: inclusion and exclusion criteria

Study population was composed by 546 adolescents. The sample composition was 297, with a loss of 3.4%, thus leaving an intentional sample of 287 students.

The eligibility criteria were: age group of 11 to 17 years, which comprises the sub-stages of the adolescence period: initial adolescence (from 11 to 14) and middle adolescence (15 to 17 years)⁽¹⁴⁾; and to be attending elementary school. Those with cognitive problems, who were unable to respond to the instruments properly, were excluded.

Study protocol

Data was collected through the use of two self-administered instruments, with average duration of 45 minutes, in a private room, in the morning and afternoon shifts, ensuring the privacy of the adolescent. The first instrument is a questionnaire composed of the social determinants of health, and the individual determinants were: age, gender, color/ethnicity; proximal determinants: religion, relationship status, influence of social networks, number of people in their house; and intermediate determinants: schooling, housing and family income.

The second instrument is a questionnaire that is part of the Health and Prevention Program in the Schools of the Ministry of Health⁽¹⁵⁾ and aims to assess the vulnerability to STIs/HIV/AIDS. It is composed of 11 questions of multiple choice and answers divided in colors. The instrument was adapted with relation to the attribution of the answers, so, instead of colors, we opted for

listing them from 0 to 2, being 0 for green answers, 1 for yellow and 2 for blue answers, in order to optimize the quantification of the results, and the sum of the answers could range from 0 to 22 points. As a cut-off point, the score 4 was used, so that individuals whose total score was inferior to 4 (score <4) were considered less vulnerable, and those whose total score was greater than or equal to 4 (score ≥ 4), more vulnerable. After the adaptation, the questionnaire was validated by two experts in the field, and then tested previously in adolescents not included in the sample.

We highlight that the Health and Prevention Program in schools is one of the actions of the Health at School Program, which aims to develop actions of sexual and reproductive health promotion of adolescents and young adults, articulating the health and education sectors to reduce STIs/HIV/AIDS and the indexes of school dropouts caused by teenage pregnancy in the population aged 10 to 24 years⁽¹⁶⁾.

Analysis of results and statistics

The data were analyzed through the IBM SPSS software (version 23). Absolute and relative frequencies were calculated for qualitative variables, as well as mean and standard deviation for quantitative ones, and the Chi-squared test was used to verify the level of association between the variables. The magnitude of associations was expressed through odd ratio and respective confidence intervals. For all the inferential procedures used, a 5% significance level was adopted, considering it statistically significant of $p < 0.05$.

RESULTS

The sample was composed of 287 adolescents, being 191 (66.6%) male, 163 (58.8%) aged 15 to 17 years, 80 (27.9%) white, 178 (38%) with more than 12 years of schooling, 271 (94.4%) practice a religion, 175 (61%) are dating or in common-law marriage, 159 (55.4%) live in a rented house, 234 (81.6%) live with two to five people, and 87 (30.3%) have an income of up to two minimum wages.

The adolescents were assessed regarding the vulnerability to STIs, and 212 (73.9%) adolescents are considered vulnerable, with a score ≥ 4 (Table 1).

Table 1 – Classification of adolescents regarding vulnerability to STIs/HIV/AIDS, Fortaleza, Ceará, Brazil, 2017

	n	%
More vulnerable (score ≥4)	212	73.9
Less vulnerable (score <4)	75	26.1
Total	287	100

Table 2 shows the results of the univariate analysis between the characteristics of adolescents and the vulnerability to STIs. There was a statistically significant association in relation to the intermediate determinants regarding housing. It was observed that 103 (80.5%) of the adolescents who live in a house owned by parents or relatives are more vulnerable to STIs, while 109 (68.6%) who live in a rented home are less vulnerable, considering the p -value of 0.022; CI from 1.1 to 3.3; and OR 1.9.

Table 2 – Analysis of social determinants in relation to the vulnerability to sexually transmitted infections, Fortaleza, Ceará, Brazil, 2017

Social determinants of health	Vulnerabilities to STIs				p value	OR (CI95%)
	Yes n	%	No n	%		
Individuals						
Gender					0.244	
Male	137	71.7	54	28.3		1.4 (0.8-2.5)
Female	75	78.1	21	21.9		1
Age group					0.143	
11 to 14	97	78.2	27	21.8		1.5 (0.9-2.6)
15 to 17	115	70.6	48	29.4		1
Color/ethnicity					0.354	
White	56	70	24	30		1
Nonwhite	156	75.4	51	24.6		1.3 (0.7-2.3)
Proximal						
Religion					0.916	
Yes	200	73.8	71	26.2		1
No	12	75	4	25		1.1 (0.3-3.4)
Relationship status					0.941	
Has a partner*	129	73.7	46	26.3		1
No partner	83	74.1	29	25.9		1 (0.6-1.8)
Influence of social networks						
Nº of people in the household					0.098	
2 to 5	168	71.8	66	28.2		1
6 or more	40	83.3	8	16.7		2 (0.9-4.4)
Intermediate						
Education level					0.492	
11 years of study	83	76.1	26	23.9		1.2(0.7-2.1)
12 years of study	129	72.5	49	27.5		1
Housing					0.022	
Home ownership	103	80.5	25	19.5		1.9 (1.1-3.3)
Rented house	109	68.6	50	31.4		1
Income*					0.443	
Up to 2 minimum wages	141	69.1	63	30.9		1
More than 2 minimum wages	14	77.8	4	22.2		1.6 (0.5-4.9)

Note: *Minimum wage of R\$ 880.00 according to Decree no. 8.618, valid for 2016; *Adolescents who were dating or were in common-law marriage were considered to the category "has a partner".

Although there is no statistically significant association between the other social determinants and vulnerability to STIs, it is important to emphasize that, in relation to the odd ratio and the social determinants of health, male adolescents aged 11 to 14 years and non-white in color have 1.4, 1.5 and 1.3, respectively, more chances of being vulnerable to STIs. Regarding proximal determinants, adolescents without religion have 1.1 more chances of vulnerability of STIs.

Regarding the influence of social networks, the ones who live with six or more people in their house have 2.0 more chances of being vulnerable. Regarding the intermediate determinants, adolescents with 11 years of study have 1.2 more chances of vulnerability to STIs, while the ones who live in a house owned by parents or relatives have 1.9 more chances of being susceptible to STIs, and the ones who live with a family income of more than two minimum wages have 1.6 more chances of vulnerability.

DISCUSSION

Social determinants of health are important for the health-disease process in the most different populational groups, in which theoretical-conceptual models have been used to understand their implications⁽¹⁷⁾.

In this perspective, the model of Social Determination highlights the factors related to the health of the population, which is divided into interconnected levels, ranging from individual determinants, which are non-modifiable and inherent to individuals, to macro-determinants, such as social, environmental and cultural factors, in which the influence that one exerts on the other determines the health of the individual. According to this model, individual determinants (age, gender, genetic factors, among others) influence health conditions directly⁽¹¹⁾. Given this, in this study, there was a higher prevalence of male adolescents with lower age range, from 11 to 14 years, regarding vulnerability to STIs.

Corroborating such data, a study developed with 4,325 adolescents in Pelotas, Southern Brazil, identified that the prevalence of sexual onset up to 14 years of age is of 18.6%, with the highest prevalence of male adolescents (20.9%) with low schooling and low socioeconomic level, whose mothers also have low schooling and who had children during adolescence⁽⁹⁾.

Male adolescents become more vulnerable to infections due to the more intense exposition to people in their conviviality with whom they do not necessarily have a bond of love⁽¹⁸⁻²⁰⁾. In addition, early sexual practice in adolescents may be associated to behaviors characteristic of this stage of life, such as the search for identity, curiosity, discovering new things, feelings of pleasure and omnipotence⁽²¹⁻²²⁾. These result of the interaction between individual, proximal and intermediate determinants, such as family and life conditions, low socioeconomic conditions, violence, use of alcohol, smoking and other drugs that are factors of exposure to sexual vulnerabilities in adolescents⁽²⁰⁻²¹⁾.

In addition, it is observed that the onset of sexual practice before the age of 15 is directly associated with greater exposure to other health risk situations, such as experimental use of alcohol, cigarettes, illicit drugs, episodes of drunkenness and fights, both for males and females. More than half of young people who experienced the first sexual relation before 15 years, for example, used some type of illicit drug⁽⁹⁾.

Intermediate social determinants, which correspond to living and working conditions, to precarious housing and low socioeconomic conditions, are considered important factors of exposure to STIs⁽²³⁻²⁴⁾.

In this study, there was a statistically significant association regarding housing, pointing that adolescents who live in a house owned by parents or relatives have a 1.9 greater chance of being in a situation of vulnerability to STIs than adolescents who live in a rented home.

It is important to highlight that, although adolescents who live in a house owned by parents or relatives, in this study, are more vulnerable than the ones who live in a rented home, both live in a neighborhood considered extremely poor by the factor "Income" of the Human Development Index⁽¹³⁾, which is a situation of vulnerability to STIs⁽²⁵⁾.

It was observed that adolescents who live with six or more people have a 2.0 greater chance of being vulnerable, and those with a family income of more than two minimum wages have 1.6 more chances of being vulnerable to STIs, although there is a relation between low income and the vulnerability of the individual⁽²⁶⁻²⁷⁾.

Regarding schooling, which concerns intermediate determinants, adolescents with less than 12 years of schooling showed higher chances of being susceptible to STIs, which can be corroborated by a study in South Korea, in which male adolescents

who started their sexual life in the fifth year of schooling showed a 6.32 greater chance of contracting a STI compared to those of the twelfth year. In turn, adolescents who started their sex life in the fifth year have a 3.98 greater chance of contracting a STI compared to girls in the twelfth year of study⁽⁴⁾.

The sexuality of the individual is a process in constant formation since their birth. Nevertheless, in adolescence this may be influenced by various means, among them, school, family, friends, the environments to which this individual belongs and their bonds, which develop a singular role in its construction⁽²⁸⁾.

The school stands out as a favorable environment for the development of adolescents, with opportunities to care for themselves and express their problems and desires, because this place is an environment conducive to activities that may add to the demands of the adolescents themselves, facilitating educational discussions and interventions regarding STI prevention⁽²⁹⁾.

Several public policies recommend the integration between school and primary health care to work together on the issue of sexual education and STI prevention among adolescents. Several studies in Brazil⁽³⁰⁻³¹⁾ and in Portugal⁽³²⁾ demonstrate that, although legislation already includes the cross-cutting nature of sex education, this topic remains timely in curricular activities.

In this way, the planning of health education activities with this population is important, in order to decrease risks in adolescence, since factors such as male sex, divorced and/or liberal parents, low level of schooling, peers influence and living in large urban areas influence the vulnerability to STIs⁽³³⁾.

Regarding the distal determinants of health, in turn, placed in the fifth layer and composed of structural conditions of the environment in which the individual is inserted, such as socioeconomic, cultural and development characteristics, they demonstrate a correlation with the fourth layer of social determinants of health, corresponding to working conditions and lifestyle⁽¹¹⁾.

Evidences point out that social and economic circumstances create unequal living and working conditions, because they subject the individual to a different access to housing, food consumption, education, among other aspects, influencing on the constitution of income, behavior and lifestyles, favoring the exposition to different vulnerabilities⁽¹⁹⁾.

Limitations of the study

Among the limitations of the research are the practical issues during its operation, such as performing it in only one school, the delay of the students to return the Informed Consent Form duly signed by the parents and/or guardians and the loss of participants throughout the collection.

In addition, although income greater than two minimum wages was associated to a greater vulnerability to STIs, in this study, the investigation of the per capita income was not included as part of the collected data, which, in a more in-depth study, could demonstrate different associations.

Contributions to the field of Nursing and health care

It is expected that the results of this study contribute to the performance of professionals in general with this public, not in a

segregated way, but with a care more integrated with strategies of health education in the school environment, both at school and in the primary health unit, strengthening and directing the care plan strategically, considering peculiarities, protecting their rights, preserving their identity and promoting their health, especially regarding social determinants.

CONCLUSION

The intermediate social determinant “type of housing” influenced directly the vulnerability to STIs in the adolescents of this study. These determinants show the influence that individuals suffer from unfavorable social, environmental and financial conditions, which might be evidenced by the results of the study by adolescents who survive on a family income of up to two minimum wages, in addition to other social determinants that are directly

related to the behavior of the adolescents themselves in face of the thought of not feeling vulnerable, since they do not think they are exposed to risk situations.

In addition, it was observed that, among the adolescents most vulnerable to STIs, there was a greater prevalence of the male sex, aged 11 to 14 years, with up to 11 years of study, of nonwhite color, with a partner, which implies the need of an integrated, different and multi-professional look.

Also, considering the limitations of the study themselves and the fact that it addresses the investigation of a specific locality, it is suggested that other researches should be performed, measuring more widely how social determinants of health influence the vulnerability to the STIs of these adolescents, since understanding adolescents’ vulnerabilities and their determinants is fundamental for strengthening programs and public policies for the integral health care of adolescents.

REFERENCES

1. Amoras BC, Campos AR, Beserra EP. Reflexões sobre vulnerabilidade dos adolescentes a infecções sexualmente transmissíveis. *PRACS: Rev Eletrôn Human Ciênc Soc* [Internet]. 2015 [cited 2018 Aug 27];8(1):163-71. Available from: <https://periodicos.unifap.br/index.php/pracs/article/view/1668>
2. Lee SY, Lee HJ, Kim TK, Lee SG, Park EC. Sexually transmitted infections and first sexual intercourse age in adolescents: the nationwide retrospective cross-sectional study. *J Sex Med*. 2015;12(12):2313-23. doi: 10.1111/jsm.13071
3. Ministério da Saúde (BR). Programa Nacional de DST e AIDS. Boletim epidemiológico AIDS – DST [Internet]. Brasília; 2017 [cited 2018 Aug 27]. Available from: <http://www.aids.gov.br/pt-br/pub/2017/boletim-epidemiologico-hiv-aids-2017>
4. Fiorati RC, Carretta RYD, Panúncio-Pinto MP, Lobato BC, Kebbe LM. População em vulnerabilidade, intersetorialidade e cidadania: articulando saberes e ações. *Saude Soc*. 2014;23(4):1458-70. doi: 10.1590/S0104-12902014000400027
5. Carmo ME, Guizardi FL. O conceito de vulnerabilidade e seus sentidos para as políticas públicas de saúde e assistência social. *Cad. Saúde Pública*. 2018;34(3):e00101417. doi: 10.1590/0102-311x00101417
6. Epstein M, Bailey JA, Manhart LE, Hill KG, Hawkins JD, Haggerty KP, et al. Understanding the link between early sexual initiation and later sexually transmitted infection: test and replication in two longitudinal studies. *J Adolesc Health*. 2014;54(4):435-41. doi: 10.1016/j.jadohealth.2013.09.016
7. Oyamada LH, Mafra PC, Meireles RA, Guerreiro TMG, Caires MG, Silva FM. Gravidez na adolescência e o risco para a gestante. *BJSCR* [Internet]. 2014 [cited 2018 Aug 19];6(2):38-45. Available from: https://www.mastereditora.com.br/periodico/20140331_212052.pdf
8. Oliveira-Campos M, Nunes ML, Madeira FC, Santos MG, Bregmann SR, Malta DC, et al. Sexual behavior among Brazilian adolescents, National Adolescent School-based Health Survey (PeNSE 2012). *Rev Bras Epidemiol*. 2014;17(1):116-30. doi: 10.1590/1809-4503201400050010
9. Gonçalves H, Machado EC, Soares ALG, Camargo-Figueira FA, Seerig LM, Mesenburg MA, et al. Sexual initiation among adolescents (10 to 14 years old) and health behaviors. *Rev Bras Epidemiol*. 2015;18(1):1-18. doi: 10.1590/1980-5497201500010003
10. Silva ASN, Silva BLCN, Silva Jr AF, Silva MCF, Guerreiro JF, Sousa ASCA. Início da vida sexual em adolescentes escolares: um estudo transversal sobre comportamento sexual de risco em Abaetetuba, Estado do Pará, Brasil. *Rev Pan-Amaz Saúde*. 2015;6(3):27-34. doi: 10.5123/S2176-62232015000300004
11. Dahlgren G, Whitehead M. Policies and strategies to promote social equity in health. Background document to WHO – Strategy paper for Europe. *Arbetsrapport-Institutet för Framtidsstudier* [Internet]. 2007;14 [cited 2018 Aug 27]. Available from: <https://core.ac.uk/download/pdf/6472456.pdf>
12. Conill EM, Xavier DR, Piola SF, Silva SF, Barros HS, Báscolo E. Social determinants, conditions and performance of health services in Latin American countries, Portugal and Spain. *Ciênc Saúde Coletiva*. 2018;23(7):2171-85. doi: 10.1590/1413-81232018237.07992018
13. Instituto de Planejamento de Fortaleza (IPLANFOR). Plano Fortaleza 2040: síntese das proposições estratégicas [Internet]. Fortaleza: IPLANFOR;2016 [cited 2018 Aug 27]. Available from: http://fortaleza2040.fortaleza.ce.gov.br/site/assets/files/publications/fortaleza2040_revista-sintese-das-propagacoes-estrategicas_23-05-2016.pdf
14. Instituto Brasileiro de Geografia e Estatística (IBGE). Pesquisa Nacional de Saúde do Escolar 2012 [Internet]. Rio de Janeiro: IBGE; 2013. [cited 2018 Aug 27]. Available from: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv64436.pdf>
15. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Programa Nacional de DST e Aids. Eu preciso fazer o teste do HIV/Aids? Mobilização nacional de adolescentes e jovens do ensino médio para prevenção da infecção pelo HIV e da Aids: questionário eletrônico. Brasília; 2006.

16. Ministério da Saúde (BR). Ministério da Educação. Secretaria de Vigilância em Saúde. Programa Nacional de DST e Aids. Diretrizes para implantação do Projeto Saúde e Prevenção nas Escolas [Internet]. Brasília; 2006 [cited 2018 Aug 27]. Available from: http://bvsm.sau.gov.br/bvs/publicacoes/diretrizes_prevencao_escolas.pdf
17. Dalcin CB, Backes DS, Dotto JI, Souza MHT, Moreschi C, Büscher A. Social determinants of health that influence the healthy living process in a vulnerable community. *Rev Enferm UFPE*. 2016;10(6):1963-70. doi: 10.5205/reuol.9199-80250-1-SM1006201608
18. Krauss H, Bogdański P, Szulińska M, Malewski M, Buraczyńska-Andrzejewska B, Sosnowski P, et al. Sexual initiation of youths in selected European countries compared with their sexual and contraceptive knowledge. *Ann Agric Environ Med* [Internet]. 2012 [cited 2018 Aug 27];19(3):587-92. Available from: <http://www.aaem.pl/Sexual-initiation-of-youths-in-selected-European-countries-compared-with-their-sexual,71826,0,2.html>
19. Malta DC, Mascarenhas MDM, Porto DL, Barreto SM, Morais NOL. Exposure to alcohol among adolescent students and associated factors. *Rev Saúde Pública*. 2014;48(1):52-62. doi: 10.1590/S0034-8910.2014048004563
20. Sasaski RSA, Leles CR, Malta DC, Sardinha LMV, Freire MCM. Prevalência de relação sexual e fatores associados em adolescentes escolares de Goiânia, Goiás, Brasil. *Ciênc Saúde Coletiva*. 2015; 20(1):95-104. doi: 10.1590/1413-81232014201.06332014
21. Patias ND, Gabriel MR, Dias ANG. A família como um dos fatores de risco e de proteção nas situações de gestação e maternidade na adolescência. *Estud Pesqui Psicol* [Internet]. 2013 [cited 2018 Aug 19];13(2):586-610. Available from: <http://pepsic.bvsalud.org/pdf/epp/v13n2/v13n2a11.pdf>
22. Silva DA, Carvalho FS. Percepções de adolescentes sobre práticas de cuidado com a saúde. *Adolesc Saúde* [Internet] 2016 [cited 2018 Aug 19];13(Supl. 1):64-71. Available from: http://adolescenciaesaude.com/detalhe_artigo.asp?id=570#
23. Pinto VM, Tancredi MV, Alencar HDR, Camolesi E, Holcman MM, Grecco JP, et al. Prevalence of Syphilis and associated factors in homeless people of São Paulo, Brazil, using a Rapid Test. *Rev Bras Epidemiol*. 2014;17(2):341-54. doi: 10.1590/1809-4503201400020005ENG
24. Halpern SC, Scherer JN, Roglio V, Faller S, Sordi A, Ornell F, et al. Vulnerabilidades clínicas e sociais em usuários de crack de acordo com a situação de moradia: um estudo multicêntrico em seis capitais brasileiras. *Cad Saúde Pública*. 2017;33(6):e00037517. doi: 10.1590/0102-311x00037517
25. Dray J, Bowman J, Campbell, Freund M, Hodder R, Wolfenden L, et al. Effectiveness of a pragmatic school-based universal intervention targeting student resilience protective factors in reducing mental health problems in adolescents. *J Adolesc*. 2017;57:74-89. doi: 10.1016/j.adolescence.2017.03.009.
26. Moura LR, Torres LM, Cadete MMM, Cunha CF. Factors associated with health risk behaviors among Brazilian adolescents: an integrative review. *Rev Esc Enferm USP*. 2018;52:e03304. DOI; <http://dx.doi.org/10.1590/s1980-220x2017020403304>.
27. Aragão JS, França ISX, Coura AS, Medeiros CCM, Enders BC. Vulnerability associated with sexually transmitted infections in physically disabled people. *Ciênc Saúde Coletiva*. 2016;21(10):3143-52. doi: 10.1590/1413-812320152110.20062016
28. Amaral AMS, Santos D, Paes HCS, Dantas IS, Santos DSS. Adolescente, gênero e sexualidade: uma revisão integrativa. *Rev Enferm Contemp*. 2017;6(1):62-7. doi: 10.17267/2317-3378rec.v6i1
29. Costa ACPJ, Araújo MFM, Araújo TM, Gubert FA, Vieira NFC. Protagonism of adolescents in preventing sexually transmitted diseases. *Acta Paul Enferm*. 2015;28(5):482-7. doi: 10.1590/1982-0194201500080
30. Vieira PM, Matsukura TS. Modelos de educação sexual na escola: concepções e práticas de professores do ensino fundamental da rede pública. *Rev Bras Educ*. 2017;22(69):453-74. doi: 10.1590/s1413-24782017226923
31. Palma YA, Piason AS, Manso AG, Strey MN. Parâmetros curriculares nacionais: um estudo sobre orientação sexual, gênero e escola no Brasil. *Temas Psicol*. 2015;23(3):727-38. doi: 10.9788/TP2015.3-16
32. Matos MG, Reis M, Ramiro L, Ribeiro JP, Leal I. Educação sexual em Portugal: legislação e avaliação da implementação nas escolas. *Psicol Saúde Doenças*. 2014;15(2):335-55. doi: 10.15309/14psd150203
33. Santos DO, Gomes FA, Teixeira KR, Roever L, Fuzissaki M, Faleiros T, et al. Vulnerability of adolescents in clinical research and practice. *Rev Bioét*. 2017;25(1):72-81. doi: 10.1590/1983-80422017251168