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Interventions for condom use by homeless adolescents: a systematic review protocol*

Intervenções para uso do preservativo por adolescentes em situação de rua: protocolo de revisão sistemática

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RESUMO

Objetivo: Avaliar a eficácia de intervenções em saúde para o uso do preservativo entre adolescentes em situação de rua. **Método:** Revisão sistemática de ensaios clínicos randomizados e não randomizados, estudos controlados antes e depois, coortes e caso-controle que apresentem intervenções que contribuem para o uso de preservativo em adolescentes em situação de rua, sem restrição de idioma. As buscas serão realizadas em bases de dados e seguirão os *Guidelines Cochrane* e o *checklist* PRISMA. **Resultados:** Espera-se identificar estudos que apontem intervenções relacionadas ao uso do preservativo e redução das IST/HIV/Aids, entre adolescentes em situação de rua, visando contribuir para promoção da saúde e das políticas públicas brasileiras. **Conclusão:** Este estudo encontra-se em andamento e o protocolo está aprovado na PROSPERO sob o número CRD42021266572.

Descritores: Adolescente; População em Situação de Rua; Preservativos.

ABSTRACT

Objective: To evaluate the effectiveness of health interventions for condom use among homeless adolescents. **Method:** A systematic review of randomized and non-randomized clinical trials, before-and-after controlled studies, cohort, and case-control studies will be conducted on interventions that contribute to the use of condoms by homeless adolescents without language restrictions. The searches will be carried out in databases and follow the Cochrane Guidelines and the PRISMA checklist. **Results:** We expect to identify studies that point to interventions related to the use of condoms and the reduction of STI/HIV/AIDS among homeless adolescents, aiming to contribute to the promotion of health and Brazilian public policies. **Conclusion:** This study is in progress, and the protocol is registered at PROSPERO under the code CRD42021266572.

Descriptors: Adolescent; Homeless Persons; Condoms.

INTRODUCTION

Health interventions improve the living conditions of people, groups or populations, expressed through collective actions carried out by organizations/institutions or even individuals⁽¹⁾. In this perspective, these interventions are related to health conditions and are linked to other factors, such as the reduction of economic costs and social security, in addition to the effort to maximize health benefits for specific groups, such as adolescents⁽²⁻³⁾.

The development of health interventions aimed at adolescents should prioritize their needs⁽⁴⁾. Therefore, it is essential to catalog the health interventions applied to homeless adolescents, considering that this social stratum lives and is part of a complex social phenomenon that goes beyond the lack of housing but contemplates the context of a social group that this population is inserted, aiming to establish interventions according to their real needs⁽⁵⁾. Homeless adolescents experience different situations of vulnerability, such as lack of income, education, health, and work; violence and criminality; barriers to housing and social support services; and lack of sexual and reproductive education, among others. Thus, health interventions should change this reality and alleviate inequalities to promote healthy lifestyle habits and improve the

quality of life of adolescents and their families⁽⁶⁾. Given the above, the sexual health of adolescents appears as an important area of action for health interventions, whether they are covered by educational or health care interventions, concerning actions that include, for example, clinical assistance, counseling, and educational activities⁽⁴⁾. Educational and healthcare interventions are the object of study of this review.

It should be noted that most strategies for preventing Human Immunodeficiency Virus (HIV) infection and other Sexually Transmitted Infections (STIs) are based on the use of condoms, whether or not they are articulated with other technologies, such as post-sexual exposure prophylaxis (PEP) and preexposure prophylaxis (PrEP)⁽⁷⁾. It is confirmed that the prevalence of condom use among Brazilian adolescents in urban centers, for example, is around 50% to 70%, as shown by some epidemiological studies from 2000⁽⁸⁻¹³⁾. Given the above, the use of condoms in the context of the sexual health of adolescents aims to prevent unwanted pregnancies and the transmission of STIs, strategic action for the control of HIV/AIDS and other STIs, and the construction of more effective public health policies⁽¹⁴⁾.

Therefore, it is necessary to include adolescents in existing programs in the Brazilian Unified Health System, such as the "*Consultório na Rua*", aimed at the adult population living on the streets, a strategy launched in 2012 as part of the National Primary Care Policy⁽¹⁵⁾. Thus, this review intends to prove and expand the existing strategy through evidence that multidisciplinary care is effective for adolescent disease prevention and health promotion.

Emphasis is placed on implementing interventions encouraging adherence to condom use by homeless adolescents due to the potential to reduce risks and harms, such as STIs. The evaluation of the implementation of health interventions can be a timely and relevant strategy for apprehending and understanding gaps, barriers, or potentialities.

In this context, a preliminary screening was carried out on the PROSPERO[®] systematic review protocol registration platform and in the Pubmed[®], EMBASE, and Cochrane Database of Systematic Reviews databases to guarantee the distinctive character of this systematic review (confirming the absence of reviews in progress or performed), which will include studies up to date in the databases (2022), without language restrictions, on interventions that encourage

condom use by homeless adolescents and report a primary outcome.

Thus, this systematic review has the following guiding question: Are educational or healthcare interventions effective in promoting condom use by homeless adolescents?

This study seeks to verify the efficiency of interventions for condom use, whether educational or healthcare-related since it is important to know the characteristics of the implementation and the factors that favor or hinder the outcomes. The effectiveness of interventions is related to producing a certain effect (condom use) and thus enabling a certain intervention to benefit individuals from a defined population and achieve the expected outcomes⁽¹⁶⁾.

This review aims to evaluate the effectiveness of health interventions for condom use among homeless adolescents.

METHOD

Eligibility

The inclusion and exclusion criteria are based on the acronym PICOS (population, intervention, comparator, outcome, and study design), in line with the guiding question (Figure 1).

The population (P) will include adolescents (aged 10 to 19)⁽¹⁷⁾ in a homeless situation (runaways and adolescents living in shelters/hostels) and will exclude studies in which participants are young people, with populations of adolescents and adults (for example, aged 13 to 24), except those in which the adolescents' outcomes are stratified and reported separately from those of the general population. The intervention (I) comprises studies that report educational or healthcare-related interventions for condom use. Studies in which interventions occur with components external to the homeless situation and interventions without comparators will be excluded. Regarding the comparators (C), studies will be considered if they present: no interventions or sexual healthcare-related actions of another nature (e.g., STI screening, distribution of kits, and vaccination campaigns). Studies without any comparator will be excluded.

Regarding the outcome (O), studies in which the results culminate in condom use will be considered. Finally, concerning the study designs (S), the review will include randomized clinical trials (RCTs), with individual or group randomization, non-randomized controlled clinical trials (non-RCT), with allocation at individual or group level,

PICO strategy	
P (Population)	Adolescents living on the streets
I (Intervention)	Educational or healthcare-related interventions
C (Comparator)	No interventions or sexual healthcare-related actions of another nature (e.g., STI screening, distribution of kits, and vaccination campaigns)
O (Outcome)	Condom use
S (Study design)	Randomized and non-randomized clinical trials, before and after controlled studies, cohort, and case-control studies

Source: Prepared by the authors, 2022.

Figure 1 - Description of the selected terms and subjects of interest used in the review. Fortaleza, CE, Brazil, 2022

controlled before-and-after studies with at least two interventions and two control sites and comparable length of study periods for control and intervention groups, and comparable interventions and control groups as their key characteristics. Observational cohort studies (with comparators) and case-control studies will also be included. Protocols and pilot studies will be excluded.

Search strategy

As sources of information, the following databases will be searched: Medical Literature Analysis and Retrieval System Online (Medline), Cochrane Central Register of Controlled Trials (CENTRAL), PsycINFO, Scopus, EMBASE, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Latin American and Caribbean Health Sciences Literature (LILACS), and Nursing Database (BDENF).

The search strategies elaborated with the support of a professional librarian use a controlled language (CL) specific to each database associated with natural language (NL) to increase sensitivity and reach. The search query is described in Figure 2.

Selection of studies

For the selection of studies, a search in the databases was carried out with the support of the Rayyan and Endnote software and the PRISMA checklist. Subsequently, with the help of Rayyan, two reviewers will independently carry out a general screening of titles, abstracts, and descriptive terms of the downloaded citations to identify potentially eligible studies. A third reviewer will resolve any disagreements regarding the eligibility of records.

Data extraction

Two reviewers will independently perform the

data extraction and use a standardized form. The following characteristics will be extracted from each study: information on the study and methodology, information on the participants, information on the settings (also considering hostels/homes/shelters), intervention/comparators, outcomes, and data on the evaluation of bias and the quality of the evidence (GRADE evidence profiles)⁽¹⁸⁾.

Risk of bias assessment

The risk of bias assessment of individual studies will be conducted by two reviewers who will evaluate the risk of bias independently. A third reviewer will resolve accentuated discrepancies. Cochrane's Collaboration Tool will be used to assess the risk of bias in RCTs. Cochrane's tool (ROB2) assesses the risk of bias in individual studies through six domains⁽¹⁹⁾: sequence generation, allocation concealment, blinding, incomplete outcome data, selective outcome reporting, and "other" biases.

For non-RCTs, in this case, non-randomized studies involving interventions, the ROBINS I⁽¹⁹⁾ instrument will be used, and case-control and cohort studies will be assessed using the Newcastle-Ottawa Scale (NOS)⁽²⁰⁾. Studies presenting a high risk or not complying with the proposed guidelines will be disregarded for this review.

Data synthesis and subgroup analysis

The data analysis and information synthesis will be carried out in two stages: first on combined results with high heterogeneity, which will be explored through subgroup analyses by gender, age, setting, study design, educational intervention, healthcare-related intervention, condom use/non-use, and HIV/STI prevention. When relevant, sensitivity analyses will be conducted to

COD	DATABASE	STRATEGY
DeCS	LILACS, BDEF.	("Homeless youth"(LN) OR "Homeless Persons"(LC)) AND (Adolescent (LC) OR Adolescents(LN)) AND ("condom distribution"(LN) OR "Health Education "(LC) OR telemedicine(LC) OR "Sex Counseling"(LC) OR "conversation wheel"(LN) OR "Sex Education"(LC) OR "peer sex education"(LN) OR workshops (LN) OR "condom use"(LN) OR Condoms (LC) OR condom(LN) OR "male condom"(LN) OR "female condom"(LC)) AND ("Pregnancy in Adolescence "(LC) OR "Sexually Transmitted Diseases "(LC) OR "sexually transmitted infections"(LN) OR HIV(LC) OR "teenage pregnancy"(LN) OR Syphilis (LC) OR Hepatitis (LC) OR "Hepatitis B"(LC) OR "Hepatitis C"(LC))
MeSH	Medline, Scopus*.	("Homeless Youth"(LC) OR "Youth, Homeless"(LC) OR "Youths, Homeless"(LC) OR "Youth, Homeless"(LC) OR "Homeless Youths"(LC)) AND ("Sexual education"(LC) OR "condom distribution"(LC) OR "condom distribution program"(LC) OR "Condoms, Female supply and distribution"(LN) OR "Condoms supply and distribution"(LN) OR "condom use"(LC) OR condom(LC) OR "male condoms" (LC) OR "internal condoms"(LC) OR "Condoms, Female" (LC) OR "Condoms trends"(LN) OR "Condoms utilization" (LN) OR "Condoms, Female trends"(LN) OR "Condoms, Female utilization"(LN) OR "Counseling" (LC) OR "Sex Counseling"(LC) OR "Health Education"(LC) OR Telemedicine(LC) OR mHealth(LC) OR "Mobile Health" (LC) OR "informative material"(LC)) AND ("Pregnancy in Adolescence"(LC) OR "Adolescent Pregnancies"(LN) OR "Adolescent Pregnancy"(LN) OR "Teen Pregnancy"(LN) OR "Teen Pregnancies"(LN) OR "Sexually Transmitted Diseases" (LC) OR "Sexually Transmitted Infections"(LN) OR "Sexually Transmitted Infection"(LN) OR "Sexually Transmitted Disease"(LN) OR Syphilis(LC) OR "HIV Infections"(LC) OR "HIV Infection"(LN) OR HIV(LN) OR Hepatitis(LC) OR "Hepatitis B"(LC) OR "Hepatitis C" (LC))
Emtree thesauri	Scopus*, EMBASE	("homeless youth"(LC) OR "homeless"(LC) OR "homeless persons"(LC)) AND (adolescent(LN) OR teenage(LN)) AND ("Sexual education"(LC) OR "condom distribution"(LC) OR "Condom distribution program"(LC) OR Counseling(LC) OR "Sex Counseling"(LC) OR "Prescriptive Counseling"(LC) OR "health Counseling"(LC) OR Telemedicine(LC) OR mHealth(LC) OR "Mobile Health"(LC) OR "informative material"(LC) OR "condom use"(LC) OR "Condoms utilization"(LN)) AND ("sexually transmitted disease"(LC) OR "Sexually Transmitted Infections"(LN) OR "adolescent pregnancy"(LC) OR "Adolescent Pregnancies"(LN) OR "Pregnancy in Adolescence"(LN) OR "Teen Pregnancies" (LN) OR "Human immunodeficiency virus"(LC) OR HIV(LN) OR Syphilis(LC) OR Hepatitis(LC) OR "Hepatitis B"(LC) OR "Hepatitis C"(LC))
APA tesauri	PsycINFO	(Homeless(LC)) AND ("Homeless Youth"(LN) OR adolescent(LN) OR teenage(LN)) AND ("Sexual Health"(LC) OR "Safe Sex"(LC) OR Condom(LC) OR "condom distribution"(LN) OR "condom distribution program"(LN) OR "Health Education"(LC) OR Counseling(LC) OR "Health Information Technology"(LC) OR MHealth(LC) OR "condom use"(LN) OR condom(LN) OR "male condoms"(LN) OR "internal condoms"(LN) OR "Condoms, Female"(LN) OR "Condoms trends"(LN) OR "Condoms utilization"(LN) OR "Condoms, Female trends"(LN) OR "Condoms, Female utilization"(LN)) AND ("Adolescent Pregnancy"(LC) OR "Teenage Pregnancy"(LN) OR "Adolescent Pregnancies"(LN) OR "Teen Pregnancy"(LN) OR "Teen Pregnancies"(LN) OR "Sexually Transmitted Diseases"(LC) OR "Sexually Transmitted Infections"(LN) OR "Hepatitis B"(LN) OR "Hepatitis C"(LN) OR Syphilis(LC) OR HIV(LC))

CINAHL Subject Headings	CINAHL	(Homelessness (LC) OR "Homeless Persons"(LC) Homeless(LN)) AND (Adolescence(LC) OR Adolescent (LN) OR Adolescents(LN)) AND (Condom(LN) OR Condoms(LC) OR "condom distribution" OR "Female Condoms"(LC) OR "Male Condoms"(LN) OR "Condom use"(LN) OR Counseling(LC) OR "Sexual Counseling"(LC) OR "Peer Counseling(LC) OR "condom distribution"(LN) OR Telemedicine(LC) OR Telehealth(LC) OR mHealth(LN) OR "Health Education"(LC)) AND ("Pregnancy in Adolescence" (LC) OR "Adolescent Pregnancy"(LN) OR "Teen Pregnancy"(LN) OR Sexually Transmitted Diseases(LC) OR "Sexually Transmitted Infections"(LN) OR "Human Immunodeficiency Virus"(LC) OR HIV(LN) OR "HIV Infections" (LC) OR "HIV Education"(LC) OR Hepatitis(LC) OR "Hepatitis B"(LC) OR "Hepatitis C"(LC) OR Syphilis(LC))
Keywords	Web of Science, Cochrane Central Register of Controlled Trials (CENTRAL).	(Homeless OR "Homeless persons" OR "Homeless Youth" OR "Homeless adolescent" OR "homeless teenage") AND ("Sexual education" OR "condom distribution" OR "condom distribution program" OR "Condoms supply and distribution" OR "condom use" OR "condom" OR "male condoms" OR "internal condoms" OR "Female condoms" OR "Condoms trends" OR "Condoms utilization" OR "Counseling" OR "Sex Counseling" OR "Health Education" OR "Telemedicine" OR "mHealth" OR "Mobile Health") AND ("Pregnancy in Adolescence" OR "Adolescent Pregnancies" OR "Adolescent Pregnancy" OR "Teen Pregnancy" OR "Teen Pregnancies" OR "Sexually Transmitted Diseases" OR "Sexually Transmitted Infections" OR "Sexually Transmitted Infection" OR "Sexually Transmitted Disease" OR Syphilis OR "HIV Infections" OR "HIV Infection" OR HIV OR "Hepatitis Infection" OR "Hepatitis B" OR "Hepatitis C")

Source: Prepared by the authors, 2022.

Figure 2 - Operationalization of the descriptors and terms used in the search for studies in the databases. Fortaleza, CE, Brazil, 2022

*The Scopus database uses Mesh terms and Emtree thesauri.

^o(CL) - Controlled Language

^β(NL) - Natural Language

investigate the effect of excluding studies with a high risk of bias, arbitrary inclusion criteria, and other methodological issues.

Subsequently, the risk ratio for dichotomous outcomes, the weighted mean difference for continuous outcomes, and the 95% confidence interval (CI) will be considered for calculations and summarized statistical presentations. The Review Manager 5.4.1 software provided by the Cochrane Collaboration will be used for the statistical analyses. For this purpose, the I-square (I²) statistic will be used to measure the heterogeneity between the tests in each analysis. A pre-specified subgroup analysis will be performed if substantial heterogeneity is identified (I-square > 45%). If the heterogeneity persists, sensitivity analyzes will take place. The results will be presented separately, and explanations for observed heterogeneity will be proposed.

If possible, summary statistics using meta-analytic methods (minimum of two studies) will be performed. If heterogeneity between studies is low to moderate (I-square ≤ 45%), a fixed ef-

fects model will be used. If the heterogeneity is high (I-square > 45%), a random effects model will be used. When the meta-analysis is unfeasible or inadequate, a narrative synthesis of the results will be chosen. If a meta-analysis is feasible, the potential for publication bias of the studies will be assessed using a funnel chart.

*Paper extracted from the master's dissertation "Interventions focused on condom use by homeless adolescents: systematic review and meta-analysis", presented to the Federal University of Ceará, Fortaleza, CE, Brazil.

CONFLICT OF INTERESTS

The authors have declared that there is no conflict of interests.

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Data analysis and interpretation: Santos MHS, Mesquita KKB, Campos RKG, Pinheiro PNC, Ferreira AGN.
Writing and/or critical review of the intellectual content: Santos MHS, Mesquita KKB, Campos RKG, Pinheiro PNC, Ferreira AGN, Araujo MFM, Fernandes ARL.
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