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Original Article

Female body image and prevention of sexually transmitted infections

Imagem corporal de meninas e prevenção das infecções sexualmente transmissíveis

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ABSTRACT
Objective: to identify the association between the perception of body image and the adoption of preventive measures for sexually transmitted infections by female adolescents. **Methods**: descriptive research, with a sequential quantitative-qualitative mixed method, in three full-time schools located in socially vulnerable neighborhoods. **Results**: 147 female adolescents participated, with a mean age of 14. Body image dissatisfaction by the Silhouettes Scale and the Adolescent Dissatisfaction Rating Scale predominated. There was a lack of knowledge about the female condom and the correct handling of the male condom to prevent sexually transmitted infections. **Conclusion:** there was no significant association among the variables: body image perception, knowledge of preventive measures, and sexual behavior; however, it was evidenced a tendency of the adolescents dissatisfied with their body image perception to expose themselves to sexual conduct with more than one partner at the same time. Furthermore, the adolescents' body image dissatisfaction influenced their knowledge about the female condom, and HIV. **Contributions to practice**: the actions of health promotion and education for adolescent girls should consider factors that raise the perception of positive body image, from strategies that reinforce self-esteem and safe sexual conduct.
Descriptors: Body Image; Knowledge; Adolescent; HIV; Sexually Transmitted Diseases.

RESUMO
Objetivo: identificar a associação entre a percepção da imagem corporal e a adoção de medidas preventivas de infecções sexualmente transmissíveis por adolescentes do sexo feminino. **Métodos:** pesquisa descritiva, com método misto quantitativo-qualitativo sequencial, em três escolas de tempo integral, localizadas em bairros de vulnerabilidade social. **Resultados:** participaram 147 adolescentes do sexo feminino, idade média de 14 anos. Predominou insatisfação da imagem corporal pelas Escala de Silhuetas e Escala de Avaliação de Insatisfação entre Adolescentes. Observou-se o desconhecimento do preservativo feminino e do manuseio correto do preservativo masculino para prevenção de infecções sexualmente transmissíveis. **Conclusão:** não houve relação significativa entre as variáveis: percepção da imagem corporal, conhecimento de medidas preventivas e comportamento sexual, entretanto, evidenciou-se tendência das adolescentes insatisfeitas com a própria percepção da imagem corporal em se exporem ao comportamento sexual com mais de um parceiro ao mesmo tempo. Ademais, a insatisfação da imagem corporal das adolescentes influenciou o conhecimento acerca do preservativo feminino e do HIV. **Contribuições para a prática:** as ações de promoção e educação em saúde de adolescentes meninas devem considerar fatores que elevem a percepção da imagem corporal positiva, a partir de estratégias que reforcem a autoestima e os comportamentos sexuais seguros.
Descritores: Imagem Corporal; Conhecimento; Adolescente; HIV; Infecções Sexualmente Transmissíveis.

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Introduction

Adolescence is a phase of life in which the individual experiences constant physical changes that can influence situations of vulnerability regarding the expression of feelings, ideals of beauty, body-related behaviors, and the perception of body image in the eyes of friends, family, and society[1].

The search for a "perfect" body in adolescence may reflect a standard of beauty developed by society when concerns about body image coincide with models idealized by the media, emphasizing thinness for girls and masculinity for boys. This behavior can cause dissatisfaction with one's appearance, triggering negative body image in adulthood[1-2].

The way an adolescent perceives and understands her body image interferes with the way she behaves regarding several issues: nutrition, physical activity, Body Mass Index (BMI), stress, self-esteem, suicide idea and planning, social media, alcohol, tobacco, early sexual initiation, and sexual health-related behaviors[1,3].

The behavior regarding the preventive measures for Sexually Transmitted Infections (STI), mainly related to sexuality in adolescence, has been addressed from beliefs, knowledge, attitudes, and practices related to sexual health, which has contributed to leverage evidence on the subject[4-5]. However, problems, such as adolescent pregnancy and increased STIs among females, still persist as situations of risk and vulnerability in this population[4-6].

One investigation with female adolescents revealed that the participants presented adequate information and knowledge regarding STIs. However, there were discrepancies between knowledge and behavior, evidenced by reports of unprotected sexual intercourse, the role of female submission to the partner during sexual intercourse, and inconsistent condom use[7].

In Brazil, the analysis of the three editions (2009, 2012, 2015) of the National School Health Survey pointed to a decrease in condom use in the 9th grade school population, from 75.9% to 66.2%. That showed different perspectives on the approach to sexuality, which may address the probability of possible pregnancy in adolescence or sexual orientation other than heterosexual[8].

Although the male condom, in general, is one of the contraceptive methods best known by adolescents, its use is often discontinued as the bond and relationship of trust are built with the partner, which may demonstrate the fragility of female autonomy and difficulty in negotiating the use of contraception[9].

That fact reinforces the lack of studies that sought to identify other elements favoring the knowledge and sexual behavior of adolescents regarding STI preventive measures considering a broader perspective of social and economic determinants in which they are inserted to improve interventions with adolescents.

Thus, the objective was to identify the association between the perception of body image and the adoption of preventive measures for sexually transmitted infections by female adolescents.

Methods

Descriptive research using a mixed quantitative-qualitative sequential method[10]. A study was conducted in 2018 in three full-time public schools in Fortaleza, Ceará, Northeast Brazil.

Fortaleza is a municipality with a total area of 312,407 km^2, an estimated population, in 2021, of 2,703,391 inhabitants, a Human Development Index of 0.754, occupying the first position in the ranking of the municipalities of the state of Ceará, and 467th in Brazil[11].

To carry out the study, we selected full-time schools belonging to three administrative regions of Fortaleza (Regional Executive Office, II, III, and IV), chosen for being located in neighborhoods of social vulnerability, with a Human Development Index of 0.2621 (region III), 0.4437 (region IV) and 0.4915 (region II), which are below the average of the city of Fortaleza (0.732). The participants were female adolescents enrolled in the selected schools.

For sample selection, the eligibility criteria were adolescents aged between 13 and 17 years, considering the concept of the World Health Organization (WHO) and that in this period, there might be the beginning of sexual life[12-13]. Another criterion for choosing the sample was a minimum attendance of 75% at school during the data collection period and attending 8th and 9th grades of elementary school.

The exclusion criteria adopted were: adolescents who presented some cognitive limitation that made it impossible or difficult to understand and fill out the instruments, visual and/or hearing impairment that required special pedagogical support to perform the school tasks, as well as those who refused or whose parents/legal guardians did not allow their participation in the research.

Through direct contact with the principals in each school, we obtained a total number of 250 students. Based on this information, we calculated the sample size using the formula for studies with a finite population, resulting in 152 adolescents. Nevertheless, there were losses throughout the process, resulting in 147 participants.

The research members presented the topics such as body image, knowledge, sexual practices and STI preventive measures, body image, and safe sexual behavior to invite the adolescents to participate. They informed that there would be weekly meetings lasting 80 to 100 minutes, seeking dialogue and the exchange of experiences, with educational activities of participatory methodology to promote the role and sharing of knowledge and experiences.

Data was collected using a semi-structured, self-applicable instrument, with 82 closed, open, dichotomous, and multiple choice questions about sociodemographic variables, body image, and preventive behaviors, duly validated and applied to Brazilian adolescents, extracted from the Brazilian Association of Research Companies, the National School Health Survey, and the application of the Silhouette Scale and Escala de Evaluación de Insatisfación Corporal para Adolescentes (EEICA) (Body Dissatisfaction Scale for Adolescents)[12,14-15].

The Silhouette Scale aims to identify body perception and satisfaction with body image among adolescents through nine figures of silhouettes representative of body images[14]. The EEICA, a Likert scale of points (0 to 96) of 32 questions, with a variation of six categories: never, rarely, sometimes, often, almost always, and always, evaluates the body dissatisfaction of young people, in which the higher the score is the greater the body dissatisfaction of the adolescent[15].

The present study adopted as a reference the Social-Ecological Model, which aims to help identify the factors that influence the behavior of individuals and population groups on up to seven different levels (intrapersonal, interpersonal, organizational, community, public policies, physical and cultural environment)[16].

The research members remained in the room where the instrument was applied to allow any clarifications and answer questions from the adolescents. The identification of the participants was expressed by the letter A (adolescent), followed by the letter corresponding to the chronological order of the interviews, resulting in the coding: AA, AB, AC... AI, to ensure confidentiality and anonymity in the process.

Quantitative data were organized in an Excel database and later exported to IBM SPSS® Statistics, version 20.0, and JAMOVI statistical software. Numerical variables presented the percentiles and absolute frequency. The categorical variables were exposed in frequencies, and the McNemar and Wilcoxon U tests were used, verifying the relation between the variables of body image, knowledge of preventive measures, and sexual conduct before and after the educational activity.

Subsequently, we investigated the association between the categorical variables, applying Pearson's chi-square test and Fisher's exact test, with a significance level of 5%.

The qualitative data revealed the subjective nuances of the participants, integrated with the quantitative data, aiming to expand the knowledge and behaviors communicated in the speeches about body

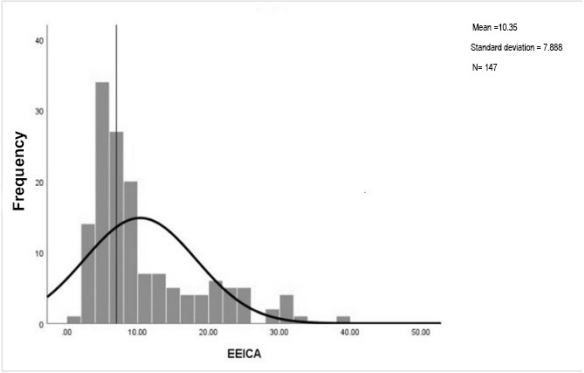
image and preventive behavior. This procedure adds credibility, context, illustration, confirmation, discovery, and diversity of perspective [10].

The Research Ethics Committee of the Federal University of Ceará approved this study, according to opinion number 2,291,545/2017.

Results

One hundred forty-seven female adolescents participated in the study, with a mean age of 14 years (14.03 ± 1.04). 76 (51.7%) attended eighth grade, and 71 (48.3%), ninth grade. Most were single, with no steady partner (70.1%), self-reported brown (50.3%) and catholic (54.4%); 48.3% lived with their parents, and from those, 40.8% reported living only with their mother; 52.7% belonged to economic class C, and 98.63% had access to the Internet. Regarding self-reported health, 68.71% classified themselves as having very good/good health.

It was observed a predominance of dissatisfaction about the perception of body image by the Silhouettes Scale (98; 66.7%), with a manifestation of increasing the body silhouette (42.2%). There was also a dissatisfaction with body image by EEICA, where scores varied from 1 to 39, with a mean of 10.35 (10.35 ± 7.88) (Figure 1).



EEICA: Escala de Evaluación de Insatisfación Corporal para Adolescentes

Figure 1 – Body image dissatisfaction in adolescents by the Escala de Evaluación de Insatisfación Corporal para Adolescentes. Fortaleza, CE, Brazil, 2019

Regarding sexual behavior, the study revealed that 83% of the adolescents have not had sexual intercourse, while 17% reported having had sexual intercourse once in their lives. As for sexual orientation, 89.1% of the adolescents declared themselves as heterosexual, 9.5% as homosexual, one as bisexual, and one as pansexual.

Of the sexually active adolescents, 60% had only one partner in their lives and had no sexual intercourse with a steady and a casual partner simultaneously. As for engaging in sexual intercourse with people they met over the Internet, four adolescents (16%) confirmed the information, and only two reported using male condoms in those relations. Thirteen adolescents (52%) reported sexual activity with a casual partner, and eight (57.1%) did not use a male condom.

On the knowledge of Human Immunodeficiency Virus (HIV) transmission risk, 91.2% of the adolescents agreed that the male condom would be the best way to prevent HIV. 58.5% signaled that sexual activity only with a faithful and uninfected partner might reduce the risk of transmission. And 69.4% believed that a healthy-looking person could live with HIV. The adolescents' speeches reinforced the data presented: *Some people have AIDS and don't show it; they do everything* (AA). *There are people sick and don't even know it* (AB). *We are all exposed when we don't use condoms, so we do not know who is sick or not* (AC). *You have to wear always (male condom) during the entire relationship* (AD). *I think you have to wear it always* (AE). *Many times, people are hasty and don't wear it (male condom)* (AF).

Other data on knowledge of preventive measures revealed that the statement about the usage of male condoms for HIV prevention is not enough since the adolescents were unaware of the correct handling related to the verification of validity, placement, and removal from the penis, according to Figure 2. The incorrect use of condoms contributes to ineffectiveness as a preventive measure, as shown in Figure 2 and the adolescents' statements: *Push it until it matches or equals the penis* (AG). *You blow and put it on* (AH). *You blow it (to see if it's broken)* (AB). *Pull on the tip of the condom to see if it is well placed* (AE). *Don't squeeze the bag to avoid getting the lubrication out* (AH).

Correct Figures and Stages		√	X
	Check the expiration date and verify if the envelope is tightly closed.	20	154
	Open the package with your hand. Never use your teeth, to avoid puncturing the condom.	169	5
	Put on the condom when the penis is hard, before initiating sexual intercourse.	37	137
	Before unrolling the condom, squeeze the tip to release the air.	46	128
	Unroll all the way down very carefully.	18	156
	After intercourse, take the condom off while the penis is still hard.	5	169
	Tie a knot. The condom can only be used once.	145	29
	After usage, throw it in the trash.	122	52

Figure 2 – Stages of correct use of the male condom. Fortaleza, CE, Brazil, 2019

It is noteworthy that of the 25 sexually active adolescents (17%), the average age of sexual initiation was 13 years (13 ± 1.04), in which eight (32%) reported using male condoms in the first sexual intercourse, and 68% reported not using them. The statements reaffirm this information: *Most adolescents have sex without a condom* (AI). *Some female adolescents who got pregnant said they forgot (to wear a condom)* (AC).

While verifying the relationship between the sexual activity of adolescents and body image, the data showed a tendency of those dissatisfied with the perception of body image to expose themselves to sexual conduct with more than one partner at the same time (p=0.052).

When examining from the standpoint of the Social Ecological Model, the association between body image dissatisfaction and the variables: knowledge of the female condom, and knowledge about HIV (intrapersonal level), significant data were observed, in which the variables influenced body image dissatisfaction (Table 1).

Table 1 – Social ecological model variables in the relation with body image dissatisfaction in female adolescent. Fortaleza, CE, Brazil, 2019

Variables	Body Image Dissatisfaction		p-value
	Before intervention n (%)	After intervention (%)	
Knowledge of the female condom			>0.0001*
Yes	119 (81.0)	142 (96.6)	
No	28 (19.0)	5 (3.4)	
Knowledge about HIV			<0.0001*
Agree	58 (39.5)	69 (46.9)	
Disagree	89 (60.5)	78 (53.1)	
Family relationship (parents or responsible understood problems and concerns)			0.739†
Never	30 (20.4)	29 (19.7)	
Rarely	36 (24.5)	35 (23.8)	
Sometimes	37 (25.2)	44 (29.9)	
Most of the time	26 (17.7)	20 (13.6)	
Always	18 (12.2)	19 (12.9)	

*Teste de McNemar; †Teste de Wilcoxon; HIV: *Human Immunodeficiency Virus*

Discussion

The interactions and conflicts between adolescents and their families contribute to organize and reorganize the family environment, directly influencing the decision making regarding the health of those involved, where both the absence and the excess of authority in the relationship between adolescents and parents can generate fear and insecurity, enabling the adoption of risky behaviors toward health[17].

The discovery and experience of sexuality can also have positive and/or negative repercussions on the development of the adolescent, with the beginning of sexual life being a topic discussed full of social, cultural, and religious rules, with the predominance still of the culture of the 'moral value of virginity' for girls, which can further enhance the adoption of risky behaviors.

Early sexual initiation, associated with non-use of the male condom, demonstrates that risky sexual behaviors are still present among adolescents. Even in a different context, African adolescents initiated sexuality before the age of 14 and did not use condoms[18].

Thus, it is necessary the attention of parents, health professionals, nurses in the welcoming and the provision of important information on the subject, without making it a taboo subject and judgement. The access of adolescents to this learning reinforces the creation of favorable environments for transformative education, in the social ecological perspective, in the intrapersonal, interpersonal, and organizational levels.

From a more macro perspective, however, a recent publication illustrates that the current Brazilian government understands that expressions present in public policies, such as "inclusion of access to sexual and reproductive health services" and "exclusion of sexual and reproductive health care in health programs of universal coverage" induce the practice of abortion. It also prohibited the distribution of publications directed to adolescents that bring correct instructions about the use of condoms[19].

These measures can trigger a setback in the advances achieved by public policies related to adolescent sexual behavior, especially with regard to reducing adolescent pregnancy and STI infection[12].

Dissatisfaction with body image was demonstrated in both measures used, the Silhouettes Scale and the Adolescent Dissatisfaction Evaluation Scale. However, in the EEICA, it was not identified in which item the dissatisfaction had more influence, since the scale presents behaviors related to care, body perceptions, and family and social influence[15].

It is reinforced that the insecurities/fragility of adolescents referring the satisfaction of body image may encourage the adoption of attitudes that 'copy' parameters of an ideal body, often related to a leaner body. However, this dissatisfaction of body image can reflect directly on the conception of health, body care and how the adolescent relates in the social context[20].

The focus on the body and appearance in adolescents can have a direct relationship with harmful behaviors, such as sadness and suicidal ideas, low self-esteem, and depression. On the other hand, this body image, being changeable, can be positively redefined through health educational actions[21].

The female adolescent participants in this study recognized the importance of using the male condom as an STI prevention method; however, they did not know the correct way to handle it. This fact indicates that only knowledge about the use of condoms as a method for adopting safe sexual behavior is not enough to avoid exposure to risky situations.

The little understanding of adolescents about the right steps for the correct use of condoms is also less likely its regular use in more stable relationships[22]. Still, the misunderstanding persists among adolescents to consider the faithful and uninfected partner as a preventive measure regarding the risk of HIV transmission. This behavior induces a low perception of risk, a fact evidenced with adolescents in another study[18].

From the Social Ecological Model, it was observed that the dissatisfaction of the body image of ado-

lescents was mutually influenced by the intrapersonal and interpersonal levels, from the variables: knowledge about the female condom and knowledge about HIV.

Regarding the female condom, it is worth noting the proportion of adolescents (96%) who were unaware of its use as the method of choice for preventing STIs. The little disclosure and the difficult access to this contraceptive method by the female population reduces the possibilities of use and greater control over their own bodies. This result calls for greater dissemination of awareness regarding the use of this method as a protective measure.

In this study, adolescents with dissatisfied body image showed low perception of health and interest in knowing the female condom. In a study with African American and Latin American adolescents and their peers, it was evidenced in their speeches that girls with satisfied body image were more likely to use female condom, due to it prevents pregnancy and STIs, and because they like their bodies, they would not want to change them[21].

Examining the adolescent's care from this perspective contributes to the nurses' knowledge and understanding of the adolescent's perceptions of body image and its influence on sexual behavior, at both level in the individual and family aspects and relationships. Thus, the health professional can develop actions planned to strengthen the reciprocal integration between the levels, to promote adolescents' knowledge and skills and to adopt healthy behaviors.

Study limitations

Difficulties were found in the execution of data collection, even with previously agreed dates, due to other school activities and the rotation of coordinators, which hindered the time allocated to the adolescents to answer the instrument and participate in the qualitative phase of the study.

Contributions to practice

Health promotion and education actions are essential practices within the scope of nurses' work, especially with adolescents, in schools, community centers and/or other social spaces. The recognition of psychosocial factors, such as the perception of the body image of adolescents and the way they deal with their body and sexuality, points out the need to implement educational strategies that favor female empowerment, the redefinition of their own body image, and body care, especially regarding STI prevention behaviors.

Conclusion

The study showed no significant connection between the variables: perception of body image, knowledge of preventive measures, and sexual conduct; however, there was a tendency of adolescents dissatisfied with their perception of body image to expose themselves to sexual conduct with more than one partner at the same time. Moreover, the dissatisfaction with the body image of adolescents influenced the knowledge about the female condom, and HIV.

There was a prevalence of dissatisfaction with body image in the group of adolescents who recognized the importance of using the male condom to prevent sexually transmitted infections. Among them, the lack of correct knowledge about handling the male condom as a protective measure predominated. Furthermore, the female condom was unknown as a preventive measure among the adolescents in the study.

Authors' contribution

Conception and design or analysis and interpretation of data; writing of the manuscript or relevant critical review of the intellectual content; final approval of the version to be published; agreement to

be responsible for all aspects of the manuscript related to the accuracy or completeness of any part of the manuscript are appropriately investigated and resolved: Araújo TS, Aragão JMN, Barbosa Filho VC, Gubert FA, Moura JRA, Vieira LJES, Vieira NFC.

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