Scale of knowledge about sexually transmitted infections

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Abstract
Adherence of adolescents to health practices in the context of sexuality is relevant, not only from the point of view of physical and psychological well-being, but also the model effect of their knowledge of infections transmitted sexually and their behaviours may have on other adolescents and lifestyles adopted. The need thus emerges to work with this target group with everyday situations of social life in the context of sexuality.

Introduction
Sexually transmitted infections (STIs) are a public health problem at present since there has been an increasing number of people suffering from these infections every year due to changing sexual habits and the onset of AIDS. Lack of information, especially by adolescents, makes them unaware of the hidden symptoms, which contributes to transmission and to delaying in getting treatment. In a study by the sexual education of Portuguese adolescents, it was found that 66% had not begun their sexual lives yet because they had not found their ideal partner yet, 86% of boys with their girlfriends and 21% with female friends. 6.5% of respondents said they had had sex because of feeling pressured. Among adolescents with experience of sexual relations, 43% are dating today. Of these, 41% initiated sex less than a month after they had started dating. In a study conducted by the level of knowledge of college students about AIDS was found to be independent of age, sex, place of residence, year of schooling, their parents’ educational level, their family’s socio-economic level and the level of real knowledge in this area, even though in all these cases the statistical analysis reveals some differences. We found adolescents as a particularly vulnerable group worldwide in terms of sexual health. Several studies, conducted in the context of sexual behaviour and attitudes, which consider adolescents a priority intervention group because the onset of sexual activity is increasingly early the duration of relationships, the existence of casual partners and inconsistent use of contraception. Starting from these assumptions, the aim of this scale is to construct a measuring instrument regarding the knowledge of adolescents concerning sexually transmitted infections.
Material and methods

The scale of knowledge about sexually transmitted infections was built on a saturated survey of the literature. Its validation was based on a non-probabilistic convenience sample of 840 adolescents attending the 9th grade.

An ordinal Likert scale was constructed with 24 indicators each with five answers. Scoring is by descending order and the first is scored 5 and the last 1 based on the following criteria: (5) completely agree, (4) strongly agree; (3) neither agree nor disagree; (2) strongly disagree; (1) completely disagree. Items 2, 7, 9, 17, 18, 19, 24 and 25 are scored inversely, meaning that one (1) corresponds to completely agree and (5) completely disagree.

As for the statistics, Table 1 shows that the mean indices are mostly centred since they are located above the mean value. Indicator 23, “The most effective contraception during adolescence is the pill” is the one with the lowest mean index (mean = 2.61) and the highest index is item 19, “It is not necessary to use a condom when taking the pill” (mean = 4.48).

Two correlations of the items were performed with the overall score. At first, indicators 5, 16, 21 and 23 were deleted because they have correlations below (r = 0.2).

Upon completion of the second correlation, the lowest value was found in item 3 “Condoms always prevent transmission of sexual diseases” (r = 0.250), explaining 6.25% of the variability. The highest value was for item 22 “Condom use is only to avoid pregnancy” (r = 0.564), explaining 31.80% of the variability in the overall score.

We determined commonality, which is reasonable as can be seen from the results presented in Table 2. With regard to the Cronbach’s alpha indices, we obtained reasonable values fluctuating between 0.756 in item 22 and 0.781 in item 3 for an overall alpha of 0.781. The Cronbach’s alphas resulting from splitting the coefficients also present reasonable values, even though in the first half registered a value of (α = 0.600), slightly lower than the second half (α = 0.796). Analysing the full item corrected correlation coefficients, the least favourable indicator is observed to be 3, “Condoms always prevent transmission of sexual infections,” which only explains 7.10%, while the most favourable indicator for the scale on sexually transmitted infections is item 12, “There are different infections that can be contracted through sexual contact, and no effective treatment for some,” explaining 34.00% of the variability.

Table 1  Pearson correlation between the different items and overall value of the scale on sexually transmitted infections

| Item no. | Items                                                                 | Mean | SD   | 1st correlation | 2nd correlation |
|---------|----------------------------------------------------------------------|------|------|-----------------|-----------------|
| 1       | There are sexually transmitted infection called syphilis              | 3.73 | 1.076| 0.339           | 0.336           |
| 2       | The pill prevents the transmission of sexual diseases                | 3.97 | 1.259| 0.487           | 0.503           |
| 3       | Condoms always prevent transmission of sexual infections             | 3.91 | 1.133| 0.261           | 0.250           |
| 4       | The AIDS virus is transmitted by blood                               | 3.89 | 1.243| 0.386           | 0.387           |
| 5       | Having only one boy/girlfriend decreases the chance of getting sexually transmitted infections | 3.30 | 1.264| 0.170           |                 |
| 6       | Condoms should always be used during sexual intercourse              | 4.41 | 0.896| 0.421           | 0.432           |
| 7       | Kissing on the mouth can transmit sexual infections                  | 3.79 | 1.263| 0.342           | 0.379           |
| 8       | Hepatitis is also transmitted sexually                               | 3.51 | 1.145| 0.407           | 0.421           |
| 9       | Saliva transmits the AIDS virus                                    | 3.60 | 1.367| 0.428           | 0.460           |
| 10      | Genital herpes is a sexually transmitted infection                   | 3.81 | 1.136| 0.430           | 0.428           |
| 11      | Sexually transmitted infections can be passed from parents to children | 3.63 | 1.268| 0.433           | 0.424           |
| 12      | There are different infections that can be contracted through sexual contact, and no effective treatment for some | 3.85 | 1.059| 0.581           | 0.585           |
| 13      | Prevention of sexually transmitted infections depends largely on us  | 4.40 | 0.865| 0.543           | 0.545           |
| 14      | Avoiding casual intimate experiences is sensible to prevent diseases | 3.87 | 1.226| 0.366           | 0.340           |
| 15      | When I become sexually active, I should go to the doctor regularly to prevent sexually transmitted infections | 3.97 | 1.009| 0.362           | 0.357           |
| 16      | I should not have casual sex                                        | 3.22 | 1.133| 0.175           |                 |
| 17      | I can have casual sex because the likelihood of getting sexually transmitted infections is low | 3.55 | 1.134| 0.506           | 0.521           |
| 18      | The first time I have sexual intercourse it is not necessary to use a condom | 4.13 | 1.267| 0.527           | 0.564           |
| 19      | It is not necessary to use a condom when taking the pill             | 3.88 | 1.208| 0.452           | 0.488           |
| 20      | The use of contraceptives is the responsibility of both the boy and girl | 4.48 | 0.925| 0.465           | 0.460           |
| 21      | If I use a condom, even if I have AIDS, I can have multiple sexual partners | 2.94 | 1.186| 0.133           |                 |
| 22      | Condom use is only to avoid pregnancy                               | 3.80 | 1.347| 0.564           | 0.597           |
| 23      | The most effective contraceptive during adolescence is the pill      | 2.61 | 1.143| −0.135          |                 |
| 24      | Thinking I can contract a sexually transmitted infection keeps me from having sex | 3.17 | 1.007| 0.270           | 0.304           |
Table 2  Internal consistency of the scale of knowledge about sexual transmission of infections

| Item no. | Items                                                                 | R/item | R²     | s/item | H²     |
|---------|----------------------------------------------------------------------|--------|--------|--------|--------|
| 1       | There a sexually transmitted infection called syphilis              | 0.236  | 0.139  | 0.774  | 0.498  |
| 2       | The pill prevents the transmission of sexual diseases               | 0.401  | 0.224  | 0.764  | 0.484  |
| 3       | Condoms always prevent transmission of sexual infections           | 0.141  | 0.071  | 0.781  | 0.551  |
| 4       | The AIDS virus is transmitted by blood                              | 0.275  | 0.124  | 0.773  | 0.470  |
| 6       | Having only one boy/girlfriend decreases the chance of getting sexually transmitted infections | 0.355  | 0.216  | 0.768  | 0.572  |
| 7       | Condoms should always be used during sexual intercourse             | 0.264  | 0.232  | 0.774  | 0.621  |
| 8       | Kissing on the mouth can transmit sexual infections                 | 0.320  | 0.221  | 0.769  | 0.579  |
| 9       | Hepatitis is also transmitted sexually                              | 0.343  | 0.274  | 0.768  | 0.602  |
| 10      | Saliva transmits the AIDS virus                                     | 0.329  | 0.234  | 0.769  | 0.568  |
| 11      | Genital herpes is a sexually transmitted infection                  | 0.312  | 0.181  | 0.770  | 0.543  |
| 12      | Sexually transmitted infections can be passed from parents to children | 0.509  | 0.340  | 0.758  | 0.583  |
| 13      | There are different infections that can be contracted through sexual contact, and no effective treatment for some | 0.480  | 0.302  | 0.762  | 0.492  |
| 14      | Prevention of sexually transmitted infections depends largely on us | 0.225  | 0.157  | 0.776  | 0.561  |
| 15      | Avoiding casual intimate experiences with strangers is sensible to prevent diseases | 0.264  | 0.165  | 0.773  | 0.466  |
| 17      | When I become sexually active, I should go to the doctor regularly to prevent sexually transmitted infections | 0.432  | 0.282  | 0.762  | 0.546  |
| 18      | I should not have casual sex                                        | 0.469  | 0.366  | 0.759  | 0.600  |
| 19      | I can have casual sex because the likelihood of getting sexually transmitted infections is low | 0.389  | 0.215  | 0.765  | 0.431  |
| 20      | The first time I have sexual intercourse it is not necessary to use a condom | 0.382  | 0.194  | 0.766  | 0.378  |
| 22      | It is not necessary to use a condom when taking the pill            | 0.500  | 0.352  | 0.756  | 0.566  |
| 24      | The use of contraceptives is the responsibility of both the boy and girl | 0.209  | 0.134  | 0.776  | 0.449  |

Split-half coefficient | First half | 0.600 | Second half | 0.796 |
Global Cronbach alpha coefficient | 0.781 |

The final scale consisted of 20 items, which together constitute the index of knowledge about sexually transmitted infections. Given the score obtained, knowledge about sexually transmitted infections is categorized into insufficient, moderate and good knowledge, according to the criterion (Mean ± 0.25 SD).

Table 3  Statistics on knowledge about sexually transmitted infections

| Statistics | Min | Max | M   | SD  | CV (%) | Sk/error | K/error | K/S |
|------------|-----|-----|-----|-----|--------|----------|---------|-----|
|            | 22.77 | 72.52 | 50.00 | 10.00 | 20.00 | -1.38 | -4.15 | 0.00 |

Table 4  t test between knowledge about transmission of infections sexual and gender

| Knowledge about STI | LEVEN’S | t | P |
|---------------------|---------|---|---|
| Male | Female |
| Mean | SD | Mean | SD | P |
| 48.44 | 9.98 | 51.71 | 9.76 | .610 | -4.786 | 0.00 |
Analysing the results by gender, the t test for independent samples reveals that girls have much more knowledge about sexually transmitted infections than boys, with explanatory t value.

Conclusion

Adolescents today have more and more access to information; however, there seems to be a certain mismatch between the information provided and the level of knowledge about sexually transmitted infections as well as assuming attitudes that promote sexual and reproductive health. For this reason, instructional interventions with various networked training agents, such as within the schooling context in the figure of their teachers, parents, and peers, should be structured. These interventions should be monitored using tools that will evaluate the educational impact in terms of knowledge about sexually transmitted infections. This training must also be sensitive to adolescents’ aspirations and concerns.

What we know about the theme

Adolescents today have more and more access to information; however, there seems to be a certain mismatch between the information provided and the level of knowledge about sexually transmitted infections. For this reason, instructional interventions should be monitored using tools that will evaluate the educational impact in terms of knowledge about sexually transmitted infections.

What we get out the study

The final scale consisted of 20 items, which together constitute the index of knowledge about sexually transmitted infections; the global cronbach alpha coefficient is 0.781. Given the score obtained, knowledge about sexually transmitted infections is categorized into insufficient, moderate and good knowledge, according to the criterion (Mean ± 0.25 SD). The girls have much more knowledge about sexually transmitted infections than boys.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

References

1. Vilar D, Ferreira PM. A educação sexual dos jovens portugueses: conhecimentos e fontes. Educação Sexual em Rede. 2009;5:2-53.
2. Freitas NM. Conhecimentos, atitudes e comportamentos sobre a SIDA de uma população universitária. Lisboa: Escola Superior de Saúde de Lisboa; 2009.
3. Matos MG, Simões C, Tomé G, Pereira S, Diniz JA, Equipa do Projecto Aventura Social. Comportamento sexual e conhecimentos, crenças e atitudes face ao VIH/SIDA: Relatório Preliminar. 2006. Available at: http://aventurasocial.com/2005/conteudos/publicacoes/sida06.pdf
4. Almeida JF, Pais JM, Torres A, Machado F, Ferreira P, Nunes J. Jovens de hoje e de aqui. Loures: Departamento Sócio-Cultural da Câmara Municipal de Loures; 1996.
5. Nodin N. Os jovens portugueses e a sexualidade em finais do século XX. Lisboa: Associação para o Planeamento da Família; 2001.
6. Matos MG, Simões C, Tomé G, Gaspar T, Camacho I, Diniz JA, et al. A saúde dos adolescentes portugueses: hoje e em 8 anos, relatório preliminar do estudo HBSC 2006. Lisboa: Edições FMH; 2006. Available at: http://www.fmh.uel.pt/aventurasocial/pdf/Relatorio_nacional_2006.pdf
7. Lindsay J, Smith A, Rosenthal D. Secondary students, HIV/AIDS and sexual health: Centre for the Study of Sexually Transmissible Diseases. Carlton, Australia: Faculty of Health Sciences, La Trobe University; 1997.
8. Beadnell B, Morrison D, Wildson A, Wells E, Murowchick E, Hoppe M, et al. Condom use, frequency of sex, and number of partners: multidimensional characterization of adolescent sexual risk-taking. J Sex Res. 2005;42:192-203.
9. Brook D, Morojele N, Zhang C, Brook J. South african adolescents: pathways to risky sexual behavior. AIDS Educ Prev. 2006;18:259-72.