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SCIENTIFIC ARTICLE

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 issues related with their knowledge of sexually transmitted infections, debating and reflecting on 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[1] on 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 girls said their first time had been with their boyfriends, 64% 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[2] 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.[3] Several studies, conducted in the context of sexual behaviour and attitudes, which consider adolescents a priority intervention group[4-6] because the onset of sexual activity is increasingly early[5-7] the duration of relationships, the existence of casual partners and inconsistent use of contraception.[8,9] Starting from these assumptions, the aim of this scale is to construct a measuring instrument regarding the knowledge of adolescents concerning sexually transmitted infections.

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Material and methods

The scale of knowledge about sexually transmitted infections was built on 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 ($\alpha = 0.600$), slightly lower than the second half ($\alpha = 0.796$). 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 a 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 with strangers 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	Alpha			
		R/item	R^2	s/item	H^2
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
				1st evaluation	
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).

Insufficient = ≤ M − 0.25 SD
Moderate = ≥ M − 0.25 SD ≥ M ≤ M + 0.25 SD
Good = ≥ M + 0.25 SD

Statistics from the applied scale reveal a minimum value of 22.77, a maximum value of 72.52 with a mean value of 50.00 (SD = 10.00).

Table 3 Statistics on knowledge about sexually transmitted infections

Statistics							
Min	Max	M	SD	CV (%)	Sk/error	K/erro	K/S
22.77	72.52	50.00	10.00	20.00	−1.38	−4.15	0.000

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

Knowledge about STI				LEVEN'S	t	*P*
Male		Female		*P*		
Mean	SD	Mean	SD			
48.44	9.98	51.71	9.76	.610	−4.786	.000

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 $\pm$ 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.

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