TRANSLATION AND VALIDATION
OF ATTITUDES TOWARD SEX EDUCATION (ATSES)
AT PORTUGUESE ADOLESCENTS

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ABSTRACT

Objective: to translate ATSES, to culturally adapt it to Portuguese adolescents and to assess psychometric properties. **Method**: Methodological study of translation/back-translation, validation and psychometric analysis. It was observed the validity of the content, construct, concurrent, internal consistency, temporal stability and sensitivity among populations. Firstly, 186 subjects between 12-18 years participated. At the retest, 60 of the initial subjects participated. **Results**: Factor analysis with two factors, as opposed to the three original ones. The Kaiser-Meyer-Olkin and Bartlett's sphericity demonstrate adequacy of the sample. The structure of the components explained 44.09% of the variance; Cronbach α between .929 and .665. Convergent validity was between .581 and .455 and, in the test-retest, .624 and .580. **Conclusions**: It is revealed an instrument of 27 items, consisting of a Global Attitude Scale, with the dimensions of Confident and Available. It is concluded that it is an appropriate measure to evaluate Portuguese adolescents' Attitudes regarding Sexual Education at School

Descriptors: Sex education; adolescent; validation studies; sexuality.

INTRODUCTION

Sexual Education in School [ESME] is a means of providing information and training to aid understanding of the intra and interpersonal phenomena of sexuality. The United Nations Educational, Scientific and Cultural Organization [UNESCO] conceives Sexuality Education as interventional and opportunities-providing[1].

The paradigm of ESME in the United States is directed towards problem solving and has a preventive bent. In Europe, it is geared towards personal development. Compulsory in Sweden since 1955, it started late in southern European countries[2]. In Portugal, the law affords it growing importance (i.e. Law no 60/2009 of 6 August; Ordinance 196-A of 9 April 2010) and given the centrality of teenagers in teaching and learning, it will be important to investigate their attitudes towards ESME.

Studies show changing attitudes to Sex Education and some authors recognize that development also depends on the accessibility of tools[3]. In our country, attitudes have primarily been studied in teachers and parents[4,5]. With few exceptions[6], the target population of ESME has been poorly addressed. Thus, if one recognizes the predictive value of attitudes on behaviours[7], it will be appropriate to provide instruments that assess them.

The use of instruments produced by other authors is acceptable, given the complexity and slowness of the creation of new measures[8,9]. In light of the lack of scales regarding attitudes to ESME reported by the adolescent population, it was deemed appropriate to select Manjova's Attitudes Toward Sexual Education Scale (ATSES)[10]. The choice of the ATSES is justified by the need for an instrument in Portuguese, given that political and educational policies make ESME inevitable. The objectives of this study are to translate the ATSES scale, culturally adapt it to Portuguese adolescents and describe its psychometric properties.

METHOD

Methodological study using translation/back translation, psychometric validation and analysis performed in an academic environment.

Convenience sample of 186 students from a school in the Algarve. Subjects with a mean age of 14 (SD = 1.507), varying between 12 and 18, of which 96 (51.9%) are boys. A retest sub-sample of 60 students from the initial group.

By validating the ATSES, this methodological study falls within a specific and broader Sex Education project, which followed the necessary hierarchical procedures as required by Order no 15847/2007 of 23 July. Written permission was obtained from parents and guardians and the Executive Council, taking into account the ethical aspects and respecting the standards of the Declaration of Helsinki[11]. The questionnaire was applied in the classroom. It took around 20 minutes to complete.

Due to it proving impossible to contact the original author, permission to use the ATSES was requested from the Master's dissertation advisor (Prof. Patrick Sibaya). The permission was also asked of the authors of the Teachers' Attitudes to Sexual Education Assessment Questionnaire (QAAPES)[12]. The data were processing using version 20 of the SPSS® application.

Instruments

The questionnaire applied had three sections. In the part one, the subjects were questioned regarding demographic aspects and educational background; in part two, the ATSES was presented and in part three, the QAAPES.

The ATSES is to be completed by the study subject and consists of 37 items assessing attitudes to ESME. The score is obtained by averaging the items after the negative reversal of the items. Higher averages indicate more consistent attitudes. The results are presented in Likert format, ranging from 1 (strongly disagree) to 5 (strongly agree). The positively

formulated items are, for example, "I feel at ease when I read magazines that talk about sex education"; the negative items include statements such as "I don't like sex education because it leads students to practise what they learn at school". The original study does not show the value of internal consistency. The ATSES scale was translated into Portuguese by two English teachers. A third English-speaking person was asked to back translate the document and the mentor of the original work acted as judge. The form was worded in colloquial language appropriate for the age group. This was followed by a pre-test involving a group of 15 students, where no doubts arose in relation to interpretation.
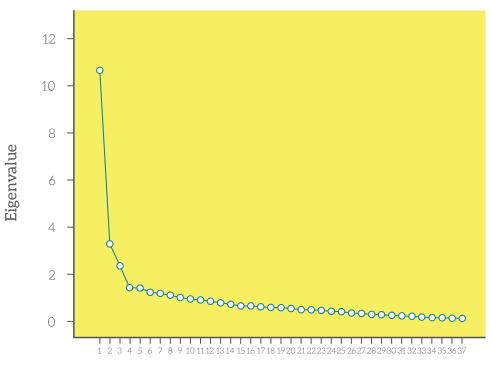
The QAAPES assesses the attitudes of teachers towards ESME. In the current study, an attitudes subscale with 10 items was used, presented in a Likert scale from 1 to 5, ranging from totally disagree to totally agree. The manifest variables are of the type "nowadays, with all the information that appears in magazines and on television, there is little need for sex education in schools". The score is obtained by averaging, after reversal of the negatives; a higher score indicates attitudes more favourable to the ESME. In the present study, internal consistency, according to Cronbach's alpha coefficient, is ɑ=.690, which although low, is acceptable[13].

RESULTS

During validation of the ATSES, the instrument was tested with regard to:

1) construct validity,
2) internal consistency analysis,
3) concurrent validity,
4) temporal stability and
5) sensitivity among populations.

Construct validity was analysed by means of Factor Principal Component Analysis [AFCP]. The sample is satisfactory in accordance with the Kaiser-Mayer-Ollin test (KMO=.860), with the Bartlet test being significant (X2=3144.57; SD=666; p <.05). Inserting the 37 original items, the scree plot shows, with effect from the third factor, that the linkage of the components begins to flatten (Figure 1).

The existence is assumed of three factors with eigenvalues greater than 2, which explain in total 64.24% of the variance of the data. We opted for observation of the Scree Plot, rejecting the Kaiser method, as the latter is recommended where there are fewer than 30 variables, the average of commonalities exceeds .70, or the sample has more than 250 subjects[14].

The first Varimax rotation was requested, to obtain factors with the greatest orthogonality, and therefore greater independence, maximizing the high correlations and minimizing the low ones[15]. Having been observed that items 27, 20 and 12 had factor loading of less than .400, they were removed and a second AFCP was requested. The explained variance came to 62.23%. As the original author identified three factors, the rotation was forced, in the third test, increasing the number of iterations to 50. The components of the factors showed a factor loading of between .763 and .435 and variance came to 43.79%. Items 37, 3, 11 and 19 were removed as they lost factor loading (i.e. under .400), increasing variance to 47.67%. Because the third factor came to present three non-co-shared items (i.e. 9, 23, 35)[15], they were withdrawn and a fourth, two-factor AFCP requested.

This resulted in an explained variance of 40.63%, losing items 1 and 10 factor loading, for a value of less than .400. They were removed. In the penultimate Varimax rotation, the explained variance was 42.77%, with two factors being found. Because item 17 lost factor

loading, it was removed and one last AFCP was carried out. The explained variance came to 44.09% and the factors showed the following composition: The first consisting of 21 items (2, 4, 5, 6, 7, 8, 13, 15, 16, 18, 21, 22, 24, 26, 29, 30, 31, 32, 33, 34, 36) with negative formulation and the second factor consisting of six components (9, 14, 23, 25, 28 and 35), with positive formulation (table 1).

Table 1 Weight of Components in the Matrix with Varimax Rotation

Rotated Matrix	Component	
	1	2
5. I think teaching students about sex education is a waste of time	,783	
16. I don't like sex education because it leads people to have multiple partners	,772	
15. Sex education is appropriate for me if taught via radio	,768	
24. Sex education shouldn't exist because it causes teenage pregnancy	,758	
7. I think sex education is acceptable if it is taught via the television	,744	
4. Teaching students about sex education isn't right	,741	
29. I don't want to attend sex education classes	,724	
2. It's shameful that sex education provides information regarding the use of condoms	,718	
30. I like sex education provided that it teaches how not to have sex before marriage	,665	
22. I'm not interested in sex education	,645	
33. People who like sex education should live apart from people who dislike it	,633	
21. I don't like sex education because it leads students to practise what they learn at school	,630	
8. I don't feel at ease when they talk about sex education	,625	
34. I turn off the television when programmes about sex education are broadcast	,584	
6. I agree with the idea of saying "no" to sexual relations before marriage	,573	
13. I think it's wrong for my age group to have sex education classes	,563	
31. I don't talk to my friends about sex education	,563	
18. Sex education should convey the idea that people should not have sexual relations before marriage	,552	
32. I like sex education provided that parents are also included	,476	
26. Sex education isn't an important aspect of our lives	,442	
36. I don't read magazines that talk about sex education	,432	
25. I'm interested in sex education		,691
23. I get upset if I am not allow to have sex education classes		,682
35. Everything should be done to ensure sex education is a subject at school		,606
9. I feel at ease when I read magazines that talk about sex education		,574
14. Teaching students about sex education is appropriate		,543
28. I need to know more about sex education		,531

For the subjects, attitudes to ESME may be understood as a construct of 27 items, from the 37 initially proposed. As regards dimensions, the items were interpreted semantically, the first factor being designated as Trust Attitudes (i.e. 21 items) and the second, Willingness Attitudes (i.e. 6 items).

The internal consistency analysis was performed through an evaluation of Cronbach's alpha coefficient[14]. For the overall scale, the value of alpha was .915. The item-total correlations of each respective component ranged between r=.174 and r=.727. On the Trust Attitudes subscale, Cronbach's alpha showed a coefficient of .929, with satisfactory item-total correlation of between r=.463 and r=.682. The Willingness Attitudes subscale demonstrated a Cronbach's alpha coefficient of .665, with item-total correlations of between r=.275 and r =.507.

Removing any item would not make the alpha value grow.

Next, an analysis was carried out of concurrent validity, which consists of assessing the relationship that the instrument has with other variables measuring something identical[9]. In Pearson's product moment correlation, a significant association was observed with QAAPES[12], both on the overall scale (N=175, r=.581, p=.000) and on the Trust Attitude sub-scale (N=181; r=.517, p=.000), plus the Willingness Attitude subscale (N=199, r=.455, p=.000). Given the sample size, the correlations, being significant, are moderate[14].

After three weeks, the ATSES was applied to 60 subjects of the initial group to observe temporal stability. Pearson's test showed moderate and significant correlations (p<.05). Thus, between the 1st and 2nd time, the values of the correlations were as follows:

a) Overall Attitudes r=.642 (n=46; p<.01);
b) Trust Attitude r=.581 (n=49; p<.01);
c) Willingness Attitude r=.580 (n=54; p<.01).

In the test of sensitivity between populations, the relationship that the ATSES has with the sex and type of school curriculum was observed. With regard to sex, the differences are not significant on an overall scale and Willingness Attitudes subscale (p>.05). However, significantly (p=.012), girls show higher Trust Attitudes. With no significant differences (p>.05), it is observed that subjects who attend the vocational curriculum tend to have higher scores on the overall scale and on the Trust Attitudes subscale, but lower scores on the Willingness Attitudes subscale.

DISCUSSION

In terms of validity of content, the preparation of the instrument was time-consuming, but respected the original instrument. In fact, a mere translation is not sufficient, as the lexical features do not keep exactly the same meaning, and hence the need for colloquial language[8]. It should be noted that in two groups of students, failure at school is repeated, and perhaps lower rates of literacy.

In the validity of the construct by means of AFCP, the outputs were interpreted by assigning names to the subscales. Interpretation is a cognitive activity of the researcher[14,15], and others are possible. With the tests reducing the number of items, the psychometric properties were shown and suggested the validity of the construct. A two-dimensional model of attitudes to ESME was identified that expressed readiness (i.e. Willingness) and assessment of the educational agent (i.e. Trust). The interpretation of the AFCP is based on the learning models of human sexuality[16]. As the agents of ESME are teachers, who represent authority and experience in knowledge, the greater factorial representativeness of the trust attitude among students is explained. On the other hand, in ESME, it is impossible for informal sex education (i.e. hidden curriculum) not to occur. In the personalized communication of the teacher, his/her inevitable stance regarding sexuality may generate this trust. As the ESME addresses issues experienced and explored at this stage of development, the intrinsic willingness of the adolescents will also play a role. Note that the Willingness dimension is a less representative factor. Despite being a valued dimension in this study, there is another facet of schooling on issues of sexuality. If ESME is seen as bookish knowledge that cannot be employed in the near future, in a classroom context where it is necessary to pay attention, to evaluate knowledge and afford reassurance, there is the risk of failure and unwillingness among the students. The readiness of adolescents for ESME is not uniform, because development to maturity is unique, as is the intensity of affective and sexual experiences. Students discover sexuality with their peers and listening to a teacher who is of a different age discuss interesting subjects, raise issues and make recommendations may be interesting to some extent. Interestingly, contrary to some studies[5], the items related to STI have no representation in the factor analysis. This brings to mind the rejection of prescriptive models in the medical/preventive sense and/or in feelings of invulnerability. However, as the World Health Organization formally recognizes in documents dating back to the 1990s[17], both for reasons of an adolescent subculture that encourages experimentation and for biological reasons of immaturity, vulnerability is high. Some of the items referring to parents lost their meaning, reflecting parental disengagement. Learning the contents of ESME in a classroom shared with colleagues perhaps reduces the need to approach the parents and lessens their importance as a source

of information. This aspect is controversial, as the World Health Organization[2] defines parents as direct partners in the same group as teachers and health workers. However, parents are not usually the first choice for teenagers, as there is some discomfort[6,18]. Although parents offer values through modelling, they do not have the same interests or problems and are not aware of the affective/sexual interactions.

In the verification of internal consistency, the Willingness Attitudes of Cronbach's alpha were at the lower tolerable limit, while the Trust Attitudes were good. While the internal consistency on an overall scale was excellent[13], the present case for other authors may suggest some uniformity in the formulation of the items[9].

In concurrent validity, as seen from the QAAPES, it is considered that there was no impairment, as the formulation was accessible to the sample. Although the QAAPES is directed towards adult teachers, this instrument measures attitudes in Portuguese culture, in other words, the predisposition to evaluate favourably or unfavourably. It was considered appropriate to use the QAAPES for the assessment of concurrent validity, since perhaps, in its correlation with the ATSES, it makes the very process of teaching/learning ESME more credible.

The ATSES exhibited temporal stability with no significant differences. The application range was adequate[9], which will have contributed to the results.

With respect to the sensitivity of the populations in terms of the trend witnessed among the subjects with a professional curriculum, compared to the other groups, it may be interpreted by life story and education, given that they have moved on to Technical College. These students' horizons will be oriented towards assuming, in the short-term, the duties of adulthood, or even conjugality.

CONCLUSION

Education for sexuality is a life process and instruments must be available to optimize the educational process.

The instrument shows that adolescent subculture presents an attitudinal dimension that reflects an interest in learning (i.e. willingness). In the reassuring dimension (i.e. trust), the teacher's authority is a proponent of the subject. Prescriptive items are rejected, as well as the inclusion of parental figures as promoters. In this niche of research in Education and Health, this validation creates conditions for the comparison of results and encourages further research.

Study limitations include the convenience sample. Some social desirability may have been generated, as one of the current authors is responsible for ESME in their current school. The sample size is borderline, and in larger samples, greater conservation of the original variables may be found.

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