Evaluation of Strategies for the Prevention of HIV and STIs in Spanish Adolescents

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Abstract

Introduction: In Spain, were recorded in the 2014, 3366 new diagnosis of VHI, of which 1.9% were adolescents under the age of 20 years. Among the UNAIDS targets for 2020, is that almost all of them are empowered with the skills, knowledge and capability to protect themselves from HIV. From nursing in the area of health prevention, one searches for to better understand the factors influencing the protection of this disease in adolescents.

Objectives: The specific objectives are: a) to analyse the level of knowledge about HIV and STIs and attitudes toward sexuality (erotophilia-erotophobia) of adolescents; b) measure the differences between the various academic courses; c) evaluate sources of information on sexuality which uses this population; d) correlating the level of knowledge about HIV and STIs with erotophilia level.

Method: The sample was composed of adolescents (n = 879) between 12 and 18 years, from five High School of the province of Malaga, obtained through non-probability sampling EROS and ECI questionnaire were used and Spearman’s bivariate correlation were run to analyse the relationship between two questionnaires.

Result: The Scale of knowledge about HIV and other STIs (ECI), it was observed that the items they scored lowest were those related to the mechanisms of HIV transmission, followed by the related to the knowledge about the effective contraceptive methods to prevent the transmission of STIs. A coefficient significant negative correlation was obtained in the test of Spearman’s bivariate correlation. In addition, statistically significant difference was found in sexual attitudes among the students of the first course in front of the other.

Conclusion: The adolescents in this study presented a significant disinformation, with a percentage of success in around 50% on STIs and HIV. Those who show a more positive attitude toward sexuality have a lower knowledge on HIV and STIs. It is a matter of priority an action plan in this area carried out by the nurse in order to better understand what influences an effective sex education besides preventing the transmission of HIV and other STIs.

Keywords: HIV and STI knowledge; prevention HIV; Adolescent; Sexual education

Introduction

According to the data of UNAIDS [1], in 2015, 36.9 million people lived in the world with HIV, of which 2.1 million were new diagnosis. The global distribution of HIV/AIDS is very different depending on the world regions. In Western Europe, the number of new HIV infections has remained stable since the year 2000 [2], not so the number of new infections by other sexually Transmitted Infections (STIs), which have increased in recent years [3,4]. The situation in Spain is similar to Europe, registering 3366 new diagnosis of HIV in 2014, of which 1.9% was teenagers under 20 years [5]. In response to the transmission route, the 53.9% is produced by homosexual relationships (man-man) and 26.0% by heterosexual ones [5]. This picture is very different to that of the first years of the millennium, where injection drug users represented the collective of higher risk of transmission. To put an end to the AIDS pandemic, from the "Joint United Nations Program on HIV/AIDS (UNAIDS) for 2016-2021" have been agreed upon several targets for 2020, among which are that 90% of men and women, especially young people, have access to HIV combination prevention programs, and that almost all of them are empowered with the skills, knowledge and ability to protect themselves from HIV [6]. These two targets synthesize the maximum nurse of preventive health care, based on the principle that prevention of the transmission of HIV is the first and most effective way for eradicating AIDS.

Since the prevention and promotion nurse, several strategies to eradicate the virus are implemented. In the primary prevention of public health, need to search for first the target populations to act directly on them, of which is, among others, the adolescent population, due to its recent awakening to the sexually active and their perception of immunity before the risks [1,7]. It is the function of the community nurse ensures the prevention of the diseases that may affect the sexual health of adolescents in general, and especially of those with who works. Adolescents live an unstable stage influenced on one side by the body and hormones changes, which behaves like an adult body, and secondly by the psychological development, which is still between child thinking and adult thinking difficult responsible decision making [8]. In Spain, as in other countries, adolescents, due to the sexual liberation that has occurred in the society, begin to have active sexuality increasingly younger ages, currently at about the age of 14 [9-11]. As evidenced by the recent studies, early initiation of sexual intercourse, as well as the use inconsistent condom, is a risk factor for the transmission
of STIs [4,10]. Likewise, the sexual intercourse of the adolescents are influenced by the erroneous knowledge that have [12,13] and attitudes toward sexuality, both own as the social environment in which they live [14]. Errotophilia-erotophobia, is a bipolar concept defined by Fisher, Byrne, White and Kelley [15], as the arrangement learned the response to sexual stimulation along a continuum that extends from a negative pole (erotophobia) to a pole positive (errotophilia), based on an affective evaluation. This attitude influences the sexual behaviour of people. The people who are more erotophilicas tend to have sexual behaviour that involve less risk, such as the use of condoms, favourable attitudes toward the contraceptive methods and skills more effective for the prevention of STI [16].

Besides, has been proven in recent studies that, despite the existence of sex education programs instituted by nurses in the centres of education, adolescents consult health professionals less frequently to be informed about sexuality.Instead, they say they usually search that information on friends, parents and, increasingly growing on the Internet [10,17,18]. This fact is worrying, because best prepared people to provide sexual information are less taken into account, increasing the probability of receiving little and incomplete knowledge, moreover inaccurate and sometimes even up to contradictory only favour the adoption of risk behaviours and negative attitudes towards sexuality.

The knowledge of HIV and STIs is essential to lay the groundwork for the sex education programs carried out by the nurses, with the aim of building a healthy and positive sexuality [12]. From the investigation it is suggested the hypothesis that the students of 1st Compulsory Secondary Education (ESO) will have less knowledge than those of other courses. The specific objectives are: a) to analyse the level of knowledge about HIV and STIs and attitudes toward sexuality (erotophilia-erotophobia) of adolescents; b) evaluate sources of information on sexuality which uses this population; c) correlating the level of knowledge about HIV and STIs with erotophilia level; d) measure the differences between the various academic courses.

Material and Methods

Subject

The present investigation was conducted in five High Schools of the province of Malaga, with students between 12 and 18 years, with a mean age of 14.85 years (SD = 1.32). The total sample (n = 879), was comprised of 439 (49.94%) men and 440 (50.06%) women.

The distribution of the sample according to the school year, 53 (6.03%) was course 1st Compulsory Secondary Education (ESO), 136 (1547%) 2nd ESO, 347 (39.48%) 3rd ESO and 343 (39.02%) 4th ESO.

Admit to having had sexual intercourse 190 adolescents (22.35%), with a mean age of 14.53 years (SD = 1.19) in his first relationship. Heterosexual were declared the 95.69% (821) of the sample, 1.86% (16) stated homosexual and 2.45% (21) stated bisexual.

Instruments

There was also an ad hoc questionnaire to know the demographic data of the participants, in which they were asked, among other variables: age (response multiple), gender (response dichotomy), having couple (yes/no), having sexual intercourse (yes/no), age at first sexual intercourse (response multiple), academic course (response multiple), where they get information on sexuality (response multiple) and sexual orientation (response multiple).

Revised survey of Sexual Opinion (EROS) [19], is a adaptation of the Spanish version [20] of the original questionnaire Sexual Opinion Survey [15]. EROS is answered on a Likert scale of 1 to 7, where 1 means completely disagree, and 7 fully agree. Evaluates the sexual attitudes, in a bipolar continuous in which one end would be a negative attitude about sexuality, rejecting sexual stimuli (erotophobia), and at the other end would be people with positive attitudes toward sexuality. The Cronbach's alpha of the questionnaire EROS was 0.835. EROS includes 4 factors: erotophobia, erotophilia, homophobia and sex unconventional. The total scores will fluctuate between 0 (maximum erotofobia) and 120 (maximum erotofilia).

Scale of knowledge about HIV and other STIs (ECI), created by Espada, et al. [12] for adolescent population. ECI is a scale with three response options, true, false and does not answer. Assesses the knowledge that participants have on HIV and STIs. ECI consists of five factors: knowledge about HIV transmission, general knowledge of HIV, prevention of HIV, condom and other STIs. The Cronbach's alpha of the questionnaire ECI was 0.776. The questionnaire is corrected by adding up all the successes.

Procedure

There was a non-probabilistic sampling by conglomerate, selecting middle-high schools of the province of Malaga (Spain). Were contacted the directors of the middle-high schools elected to seek your consent. If a school declined to participate in the research it was replaced by another of the same characteristics. In turn, the center directors, report by the School Board parents.Once you have obtained the informed consent, he turned to the Classrooms in hours of tutoring, and gave each student a booklet with the questionnaires on paper, completely anonymous in that no information that could identify the teenager is not requested. In the realization of the questionnaires employed approximately 20 minutes. Subsequently these booklets are introduced into the system of statistical data with a number for the data protection. It should be noted that 1 and 2 of ESO have not received specific courses on sex education.

Data Analysis

Descriptive analyses were performed with the demographic data, average and standard deviation, in addition to the calculation of the percentages. The calculation was performed of the Kolmogorov-Smirnov Test to analyse the data normality of the sample. The test was conducted of bivariate correlation of Spearman to analyse the relationship between the variables.
It is also performed tests of Kruskal-Wallis and Mann-Whitney U-test to compare the differences obtained in the mean scores in the questionnaires. Data analysis was carried out with the SPSS® v.19.

**Results**

**Descriptive Data**

The mean score and the standard deviation in each one of the questionnaires, in function of the academic year and the total, is presented in Table 1.

As one can see in the table above, adolescents in the sample have a tendency towards erotophilia, which increases with academic courses. On the contrary, they show a lower score on the questionnaire ECI as the school year progresses, although all courses have an average score.

In this study will analyse the items separately because it is considered more important the analysis of some items exclusively due to the erroneous knowledge specific more than an analysis of the factors. We were calculated the percentage of success for each of the items in the questionnaire ECI, as the data are presented in Table 2.

As noted in the data, the lowest scores are those of items 1 (19.7%), 2 (33.5%), 3 (35.1), 4 (32.7%), 5 (22.6%) and 18 (15.6%); which do not exceed the 50% of success, which are related to the mechanism of transmission of HIV. There was also a low percentage of success in items 21 (55.2%), 22 (46.3%), 23 (34.1%) and 24 (30.1%), related to the knowledge about the effective contraceptive methods to prevent the transmission of STIs; in this line of knowledge, the highest percentage of success what gets the item 20 (74.4%), on the male condom. There is a high percentage of success also in the items that query on the other STIs, that are not HIV: item 6 (62.5%), 7 (72.7%), 8 (69.6%), 9 (24.4%), 10 (72.5%) and 11 (63.9%).

It must be pointed out that when they are consulted on where to obtain sexual information, as a first option point, they respond among others: friends 19.23%, internet 19.22%, High School 13.09%, father and mother 12.06%, sexual education 9.67%, doesn’t answer 7.17%, television 3.75%, ”on the street” 3.65%, family (in general) 2.95% and any information 2.05%.

**Table 1: Mean scores and standard deviations in the questionnaires according to the academic years and total score.**

| Academic Year | EROS | ECI |
|---------------|------|-----|
| 1^st ESO      | 53   | 52.77 | 18.94 | 12.93 | 2.57 |
| 2^nd ESO      | 136  | 62.04 | 21.51 | 12.61 | 2.56 |
| 3^rd ESO      | 347  | 64.80 | 19.38 | 12.41 | 2.33 |
| 4^th ESO      | 343  | 65.89 | 18.39 | 12.43 | 2.28 |
| Total         | 879  | 64.08 | 19.54 | 12.48 | 2.36 |

Note: n: number of people; M: Mean; SD: Standard Deviation; ERO: Compulsory Secondary Education; EROS: Revised Sexual Opinion Survey; ECI: Scale of knowledge about HIV and other STIs.

It is noteworthy that some participants also mentioned: “of everything” 1.25%, brothers/sisters 1.14%, own experiences 1.02%, books 1.02%, pornographic 0.80%, healthcare professional 0.57%, heard around 0.46%, nature 0.34%, couple 0.11%, news 0.11%, documentary 0.11% and radio 0.11%.

**Contrast of Variables**

It performs the Kolmogorov-Smirnov normality test, where it is observed that the total score in the questionnaire EROS
has a normal distribution (sig. 0.401), but not the total score in
the questionnaire of ECI, which does not meet the criterion of
normality (sig. 0.000), therefore, the contrast analysis used non-
parametric tests.

The test was conducted of the bivariate correlation of
Spearman between the scores obtained in the two questionnaires,
resulting in a significant correlation (0.05) being the correlation
coefficient negative (-0.091), which indicates that adolescents who
have less knowledge about HIV and STIs are those that present a
higher score in the questionnaire of sexual attitudes (1st; EROS =
52.77; ECI = 12.93), i.e., those who are more likely to engage in
sexual intercourse.

The Kruskal-Wallis test was realized to contrast the
differences found between the different academic years in each
of the questionnaires. Test indicates that there are significant
differences in response to the variable academic year in the mean
score in the questionnaire EROS, not in the questionnaire ECI.
Because of the characteristics of this test, it is unknown between
what academic years is the difference therefore is performed The
Mann-Whitney U test with the courses taken two by two. The
differences are the first and second courses (Z = -2.769;
p = 0.006), first and third (Z = -4.092; p = 0.000), and first and
fourth (Z = -4.354; p = 0.000). In the other courses difference we
were found statistically significant.

Discussion

Following the first objective of this research, analysis of
attitudes and knowledge of Spanish adolescents about HIV
and other STIs, it is observed in these data a medium level of
knowledge (ECI Total = 12.48), and they have an attitude toward
sexuality tending towards erotophilia but not too pronounced
(EROS Total = 64.08). These data show a similar knowledge to
other recent studies, in which it is noted that it is necessary to
improve the knowledge of the adolescents in this matter, because
it is not knowledge high [4,12,13,17]. It is to be noted that the
results obtained approximately three quarters of the adolescent
population are unaware of the mechanisms of transmission of
HIV, and more or less half of them are unaware of the effective
contraceptive methods to prevent the transmission of STIs. The
lack of knowledge about HIV and other STIs may be related to
the place where teenagers get information about sexuality. As
has been observed in this study mostly resort to friends and
Internet, and having gone down in recent years the weight of
information obtained through professional (teachers, nurses,
doctors, etc.) and parents, compared to other studies [18]. These
data can be related to the negative perception that adolescents
have about sex education, feeling her as shameful and distant from
their interests [21]. Draws attention how some point to obtain
that information from the pornography, taking into account that
they are all under age; or of the nature, which implies that given
by known knowledge that they do not possess. It is important
the impact it can have on where adolescents get information
on sexuality about an increased risk of HIV transmission. This
is a result of information obtained through friends, Internet or
pornography shows erroneous understanding of the mechanism
of transmission of STIs, methods of protection against them and
even false knowledge about their own ITS and what a positive
attitude towards sexuality. The importance that is taking the
Internet in the sexual life of adolescents, as observed in the
data is worrying, because that is increasing cases of sexing and
cybersex, practices they themselves associated with sexual
bullying behaviours and with the dissemination of images or
Internet pornographic videos [4,22].

As can be seen in the correlations between the two
questionnaires, there is a negative correlation between the mean
scores of the Questionnaires EROS and ECI, which opens another
issue of concern to the adolescent sexuality. These data show that
those teenagers who have less knowledge about transmission of
STIs are those that have a higher predisposition to have sexual
relations. The fact of having a greater lack of knowledge of STIs
and more positive attitudes toward sexual intercourse, relate
with the possibility to perform risk practices. Since both not have
a high level of knowledge about HIV and have a positive attitude
towards sexuality are considered risk factors for carrying out
risk behaviours [4]. Between the practices of risk observed in
this study highlights, first have an early beginning of the coital
activity, being the average age 14.53, data that are consistent
with the recent research [10,11]. The knowledge and attitudes of
risk, together with the risk practices are factors that put at risk
the sexual health of adolescents.

As has been observed in the results, one confirms that
influences the academic year in attitudes toward sexuality, but not
in the knowledge about HIV and STIs. These data are considered
very important because knowledge of STIs themselves is taught
in sex education received by adolescents, imparted by the
community nurses, in the study in the last two academic years.
However, they not always are formed in an affective-sexual
education, which is where attitudes toward sexuality is taught,
and this itself is influenced by the academic year. Moreover, we
must bear in mind that today’s teens are considered in gave the
most prepared and most likely to access information generation.
But, nevertheless, they continue to have high misinformation in
what refers to sexual health.

One can say, it is the duty of the nursing profession and the
institutions responsible for sexual education in adolescence
analyse what is bad for teens are not well informed on sexual
health. That is why we have to emphasize the prevention
strategies to follow to prevent STIs, among them would do
campaigns for early detection of STIs, and of training courses
in knowledge of the unhealthy behaviours and the risks that
concern. Another main work of nursing is the promotion of
health and within it of healthy and positive sexuality. On the basis
of this principle should be give personal tools to adolescents so
that they can discard the risk behaviours that involve a possible
disease. Finally, it seems necessary that an issue as important
as is the sexual education is carried out by nurses specialized
in sexology and with a dynamic and active methodology that
involve the adolescent of their own learning and responsible for
their sexual health, promoting a positive attitude to sexuality,
and always healthy.
Conclusions

Adolescents in this study presented a significant disinfection, with a percentage of appropriate knowledge in around 50% on STIs and HIV. Furthermore, it is paradoxical effect having sexual attitudes, being those highest score in the questionnaire EROS demonstrate the least knowledge. On the other hand, confirms that influences the academic year in attitudes toward sexuality, but not in the knowledge about HIV and STIs. It is priority an action plan in this area with the aim of better understanding what influences an effective sexual education, in order to prevent the transmission of HIV and other STIs.

Limitations

The study results must be interpreted in the light of several features. Such as the distribution was not fair by academic year, and that the chosen centres correspond to a single province of Spain so can't be generalized. In the same way, those centres participating in the study were assumed greater awareness of the importance of sex education for adolescents, since they did not reject the investigation. In relation to the data, a limitation of this study is that it has not analysed the age variable, because what we wanted to discuss was the influence of the academic year because sex education is taught in the last two years.

Acknowledgments

The authors would like to thank the following High Schools their participation in the next research: Alfaguara, Casabermeja, Emilio Prados, Fernando de los Ríos and Montecillos.

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