Impact of educational lectures on female adolescents’ knowledge about sexually transmitted diseases and cervical cancer in the city of Jundiaí, SP

Impacto das palestras educativas no conhecimento das adolescentes em relação às doenças sexualmente transmissíveis e câncer do colo uterino em Jundiaí, SP

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ABSTRACT

Objective: To evaluate the knowledge of adolescents living in Vila Ana and Morada das Vinhas region, in the city of Jundiaí, State of São Paulo, Brazil, on prevention and diagnosis of the main sexually transmitted diseases (STDs) and on cervical cancer, as well as the immediate impact of educational lectures. Methods: A prospective cross-sectional study was performed to assess the knowledge of a particular group of female adolescents about STDs and cervical cancer, by means of a questionnaire applied before and after educational lectures. Results: After the lecture, there was an increased number of correct answers about sexual education, knowledge about HPV (44%), and prevention of cervical cancer (22%). Conclusion: The adolescents in our study had little knowledge about STDs and cervical cancer, but educational lectures could change this reality at a low cost to Public Health services.

Keywords: Knowledge; Sexually transmitted diseases; Uterine cervical neoplasms; Sex education

INTRODUCTION

Sexuality is present throughout the life of humans, and seek its confirmation during adolescence¹). Notwithstanding, sexuality development is not always followed by affective and cognitive maturing, which makes adolescence a highly vulnerable stage for humans, with some risks, such as undesired pregnancy and sexually transmitted diseases (STDs)¹). The majority of women start sexual activities during adolescence, at an increasingly younger age. This study was carried out to evaluate the knowledge of adolescents living in Vila Ana and Morada das Vinhas region, in the city of Jundiaí, State of São Paulo, Brazil, on prevention and diagnosis of the main sexually transmitted diseases (STDs) and on cervical cancer, as well as the immediate impact of educational lectures.
age\(^{(1)}\), which leads to higher incidence of STDs among teenagers\(^{2,3}\). The immediate consequences are, for example, urethritis, salpingitis and, in the long run, infertility, ectopic pregnancy and uterine cervical cancer, as well as psychosocial and financial complications\(^{(4)}\). We know that STDs are among the five main reasons for people to seek Healthcare services\(^{(5)}\).

The World Health Organization (WHO) estimates that there are about 340 million cases of STDs per year, worldwide. This estimate does not include genital herpes and human papilloma virus (HPV)\(^{(6)}\). In Brazil, the estimates of sexually transmitted infections in the sexually active population are of 937,000 cases of syphilis; 1,541,800 cases of gonorrhea; 1,967,200 cases of chlamydia; 640,900 cases of genital herpes and 685,400 cases of HPV\(^{(6)}\). Nonetheless, it is believed that the number of reported cases is way below estimates\(^{(7)}\), maybe because acquired immunodeficiency syndrome (Aids) and syphilis are of compulsory notification and many persons with STDs seek treatment in drugstores instead of looking for medical-hospital care. Moreover, many STDs are asymptomatic, especially among women\(^{(8)}\).

Many are the reasons adolescents have for doing unprotected sex. One of them is lack of information, since adolescents seem to not be aware of their own fertile period or use contraceptive pills in a wrong way; or they simply do not believe in the risk of pregnancy or diseases in their first sexual intercourse, considering themselves indestructible and untouchables in their own fantasy thinking\(^{(9)}\). Other reasons for not using contraceptive methods are: forgetfulness, cost, and reports of impairing pleasure in the sexual intercourse\(^{(9)}\). There is a wide gap between the level of knowledge and the effective use of these methods\(^{(1,10)}\). The fact is that one cannot expect adolescents themselves to take on STDs prevention as part of their lives if that does not make sense to them or if they are precluded from using proper methods\(^{(11)}\).

In order to stimulate prevention among adolescents concerning STDs, education is fundamental\(^{(12)}\). Nonetheless, the educational process is rather complex and involves numerous aspects inherent to the communicator, the communication and the audience so as to make the goals feasible and have them reach the expected targets, when it is not enough to simply provide information – given that “to be informed does not necessarily mean to know; to be aware does not necessarily mean to take measures; and to decide for taking measures does not necessarily mean to do”\(^{(12)}\). Therefore, it is necessary to develop the sense of individual and group responsibility; only such commitment can lead to the more effective and accepted behavioral changes, since it is based on acceptance and not on obligation\(^{(12)}\).

HPV is a virus of preferable sexual transmission, with high incidences of morbidity and mortality. It is considered an essential etiological agent for the development of cervical cancer – the second most common type of cancer among women, with estimates of 500 thousand new cases and 230 thousand deaths in the entire world, in 2008\(^{(13)}\). Its incidence in developing countries is about twice as high when compared to more developed countries; and the prevalence of cervix cancer becomes evident in the age range of 20 to 29 years and the risk increases quickly until its peak is reached in the age range between 45 and 49 years\(^{(13)}\). It is a neoplasia also associated to extrinsic factors, that is, factors associated with the environment and lifestyle; nonetheless, it is not easy to change the lifestyle of a population, especially amidst poverty and deficient education\(^{(14-16)}\).

According to the Datasus, the total number of HPV-induced neoplasias in the State of São Paulo, Brazil, from January to July of 2006, was 3,455, being more concentrated in age ranges when women have a more active sexual life (from 15 to 39 years of age). In the city of Jundiaí, São Paulo, Brazil, in the same period, 737 cases of cervical squamous metaplasia were diagnosed, amongst which 58 cases were associated with HPV infection\(^{(7)}\). Also in Jundiaí, this infection reaches earlier ages, reinforcing the importance of an approach with adolescents in the city so that prevention can be more efficient\(^{(8)}\).

The Brazilian program for early detection and diagnosis of lesions which are precursors of cervical cancer (secondary prevention) is based on periodical Pap smear test. The target population is sexually active women, especially those in the age range of 25 to 59 years\(^{(9)}\).

Some studies carried out in South America confirm the lack of information and the low level of knowledge about STDs, and warn to the lack of proper sexual education\(^{(17)}\).

**OBJECTIVE**

To assess the knowledge of female adolescents living in the regions of Vila Ana and Morada das Vinhas, in the city of Jundiaí, São Paulo, Brazil, on the prevention and diagnosis of the main STDs and cervical cancer, as well as to assess the immediate impact of educational talks.

**METHODS**

A prospective, cross-section study was carried out in public schools: Escola de Ensino (EE) Cel. Siqueira de Moraes, which serves the dwellers of Vila Ana and the schools: Escola Municipal de Ensino Básico (EMEB) Prof. Albino Melo de Oliveira, EMEB Morada das Vinhas and EE Padre Maurílio Tomanik, which serve the dwellers of the Morada das Vinhas district. This study was approved by the Research Ethics Committee of the Faculdade
de Medicina de Jundiaí. The knowledge of female adolescents (6th to 9th grades of the primary education/junior school) was assessed by means of a questionnaire (Appendix 1), applied before and immediately after the educational lecture, given in a classroom of the school, on the topic: “Prevention and diagnosis of cervical cancer and STD transmission”. Immediately before the lecture, an oral informed consent form was read.

After being answered by the adolescents, the questionnaires were revised and filed, and later a database was made using the Excel software (Microsoft®). For statistical analysis purposes we used the SAS 9.02 software (SAS Institute Inc., Cary, NC, USA) and the $\chi^2$ tests (McNemar and Pearson), Odds Ratio and Fisher’s exact test.

RESULTS

A total of 164 female students were submitted to the questionnaire. Their ages varied between 12 and 17 years (Figure 1), of which 42.3% were in the 7th grade and 57.7% the 8th grade.

As far as HPV is concerned, before the lecture, only 3% knew exactly what it meant; and after it, the number rose to 47.6%. Only 79.3% had already heard of Pap smear, and most of them (30.8%) obtained such information at home. After the lecture, 91.5% of the students answered yes, 36% reported having heard about it at school and 21.3% heard about it in talks. Nonetheless, 42.7% did not know why Pap smear was done and only 64.6% deemed it very important to do it. After the lecture, 59.1% stated that such test could prevent cervical cancer, and 88.4% stated to consider it very important to undergo the test (Table 1). As to the importance of using condoms, 88.4% answered it was very important to use them and, after the lecture, 90.9% of interviewees considered important to use condoms.

Table 1. Knowledge of female adolescents participating in the study on HPV and Pap smear test

<table>
<thead>
<tr>
<th>Questions</th>
<th>Before</th>
<th>After</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you heard about HPV?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have never heard</td>
<td>59</td>
<td>36.0</td>
<td>4.3</td>
</tr>
<tr>
<td>I have heard, but I do not know exactly what it is</td>
<td>97</td>
<td>59.1</td>
<td>44.4</td>
</tr>
<tr>
<td>I have heard, and I know what it is</td>
<td>5</td>
<td>3.0</td>
<td>47.6</td>
</tr>
<tr>
<td>No answer</td>
<td>3</td>
<td>1.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Have you heard about Pap smear test?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have never heard</td>
<td>33</td>
<td>20.1</td>
<td>6.1</td>
</tr>
<tr>
<td>I have heard</td>
<td>130</td>
<td>79.3</td>
<td>91.5</td>
</tr>
<tr>
<td>No answer</td>
<td>1</td>
<td>0.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Where have you heard about it?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>11</td>
<td>8.5</td>
<td>36.0</td>
</tr>
<tr>
<td>Television</td>
<td>11</td>
<td>8.5</td>
<td>20.1</td>
</tr>
<tr>
<td>Newspaper</td>
<td>3</td>
<td>2.3</td>
<td>6.0</td>
</tr>
<tr>
<td>Lectures</td>
<td>9</td>
<td>6.9</td>
<td>32.3</td>
</tr>
<tr>
<td>At home</td>
<td>40</td>
<td>30.8</td>
<td>37.2</td>
</tr>
<tr>
<td>By friends</td>
<td>6</td>
<td>4.6</td>
<td>7.4</td>
</tr>
<tr>
<td>Other places</td>
<td>2</td>
<td>1.5</td>
<td>2.1</td>
</tr>
<tr>
<td>What is the Pap smear test for?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not know</td>
<td>70</td>
<td>42.7</td>
<td>16.9</td>
</tr>
<tr>
<td>To avoid diseases</td>
<td>23</td>
<td>14.0</td>
<td>18.0</td>
</tr>
<tr>
<td>To avoid uterine cervical cancer</td>
<td>38</td>
<td>23.2</td>
<td>97.1</td>
</tr>
<tr>
<td>To avoid any cancer in women</td>
<td>33</td>
<td>20.1</td>
<td>31.8</td>
</tr>
<tr>
<td>Do you think it is necessary to undergo this test?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not know</td>
<td>47</td>
<td>28.7</td>
<td>7.0</td>
</tr>
<tr>
<td>I think it is not necessary</td>
<td>1</td>
<td>0.6</td>
<td>2.1</td>
</tr>
<tr>
<td>I think it is not very necessary</td>
<td>9</td>
<td>5.5</td>
<td>9.5</td>
</tr>
<tr>
<td>I think it is very necessary</td>
<td>106</td>
<td>64.6</td>
<td>145.1</td>
</tr>
<tr>
<td>No answer</td>
<td>0</td>
<td>0.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Who should undergo this test?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women with active sexual life</td>
<td>99</td>
<td>60.4</td>
<td>136.6</td>
</tr>
<tr>
<td>Women after menarche (first menses)</td>
<td>43</td>
<td>26.2</td>
<td>21.2</td>
</tr>
<tr>
<td>Women aged over 5 years</td>
<td>8</td>
<td>4.9</td>
<td>4.9</td>
</tr>
<tr>
<td>I do not know</td>
<td>3</td>
<td>1.8</td>
<td>0.0</td>
</tr>
<tr>
<td>No answer</td>
<td>11</td>
<td>6.7</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Tests used: $\chi^2$ test - McNemar; * Fisher’s exact test.
Among the students who participated, 58.5% were not aware of a test used to prevent cervical cancer. After the lecture, 80.5% were aware of such test (Table 2).

Table 2. Knowledge of female adolescents participating in the study on cervical cancer prevention

<table>
<thead>
<tr>
<th>Questions</th>
<th>Before</th>
<th>After</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you know someone who had cervical cancer?</td>
<td>106 64.6 105 64.0</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>I have never heard</td>
<td>106 64.6 105 64.0</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>I have heard</td>
<td>56 34.1 53 32.3</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>No answer</td>
<td>2 1.2 6 3.7</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>Where have you heard about it?</td>
<td>School 1 1.8 9 17.0 0.0114</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>Television 10 17.9 6 11.3 0.1573</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>Newspaper 1 1.8 2 3.8 0.3173</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>Lectures 1 1.8 4 7.5 0.1797</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>At home 8 14.3 10 18.9 0.5930</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>By friends 8 14.3 2 3.8 0.0578</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>Other places 0 0.0 0 0.0 80.5 105 64.0 0.8886</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>Do you know if there is any test to prevent cervical cancer?</td>
<td>80.5 105 64.0 0.0098*</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>Yes, there is 60 36.6 132 80.5</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
<td></td>
</tr>
<tr>
<td>There is none, because no cancer can be avoided</td>
<td>4 2.4 7 4.3</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
<tr>
<td>No answer</td>
<td>4 2.4 3 1.8</td>
<td>80.5 105 64.0</td>
<td>0.8886</td>
</tr>
</tbody>
</table>

Tests used: χ² test (McNemar); * Fisher’s exact test.

Only 18.3% of interviewees reported having attended previous talks concerning sexual education, and the percentage rose to 54.9% in the questionnaire done afterwards, showing that they did not know what a sexual education talk really was about. Among the students who had already attended such lecture, 93.3% reported that these talks were given at school.

DISCUSSION

The interest for studying adolescence today stems from the post-war demographic explosion, which had, as immediate consequence, the marked growth in the percentage of the young population in the world, as the expansion of the age range with characteristics of adolescents. Educational programs for adolescents are important to prevent specific problems of this age group, and in order to be implemented, it is necessary to have proper knowledge about this group.

Complying with prior publications, the present study observed that adolescents do not have much knowledge about STDs. Among the STDs, AIDS was the disease which was most remembered by the interviewees, ratifying literature data pointing out that over 50% of teenagers know about the disease. Taquette et al. ran a study with young women who went to the Núcleo de Estudos de Saúde do Adolescente of Universidade Estadual do Rio de Janeiro (UERJ), where the women interviewed were afraid of being infected specifically by the AIDS virus and not any other type of disease. Evidence from some studies reports that after the discovery of the immunodeficiency virus and the massive disclosure of its means of prevention in the press, people concerned with STDs were concerned with AIDS prevention. We must also stress that the population in our study benefit from Health Educational Programs for STDs prevention, from the Municipal Secretariat of Health as well as from Faculdade de Medicina de Jundiaí.

Knowledge about condoms and the evidence that they prevent STDs was seen in the majority of the women that were interviewed in this study, and similar findings are reported in the literature. Despite such knowledge, condoms are not regularly used. Considering the risk of pregnancy as well, Belo et al. conducted a study with pregnant adolescents aged 19 years of age or younger and found that 54.5% of participants in this study reported having used some contraceptive method in their first intercourse, and the condom was the most mentioned method (91.7%), followed by oral hormonal contraceptive and coitus interruptus. They also state that after educational lectures concerning STDs, the increased use of condoms was relevant. Although the use of male condom is the predominant contraceptive method found in most studies, many of the interviewees are not aware of the proper way of using it and its efficacy.

In the present study it is important to highlight the fact that when asked about which STDs they knew, only the minority mentioned HPV. However, at another point of the study, when questioned on their knowledge about the HPV, positive answers rose to more than half, since the following was asked: “Have you ever heard of the HPV?” and there were only three answer options: “Never heard of it”, “I have heard of it but I do not know what it is”, and “I have heard about and I know what it is”. Knowledge does not lead to practice alone, showing that Health education must be followed by actions which make practice becomes reality.

This study showed – like in previous studies – that many adolescents interviewed knew about the Pap smear test and considered it important, but they were not aware of its true function. Nonetheless, inadequate or incomplete knowledge about the Pap smear test can bring about a negative behavior concerning doing the test and the frequency with which it must be performed. Brenna et al. investigated knowledge of women with uterine cervical cancer about the preventive Pap smear test and reported that 63% of the participants had inadequate knowledge about it; most of them (81%) had an inadequate behavior regarding the need to do it and 56% did it in an inadequate way.

We can still stress the fact that when asked about the use of some uterine cervical cancer prevention
method, most female adolescents said no, thus proving a confusion regarding the role of the Pap smear test. Different from literature reports, our study found that information about the test was provided more at home than in other places, such as schools. This may be explained by the fact that the mothers of these adolescents are more concerned about uterine cervical cancer and about the health of their daughters, thus stimulating them to go to the gynecologist earlier.

Many studies emphasize the need of cervical-vaginal cytology tests as a method to screen HPV-induced lesions and uterine cervical cancer. Although most adolescents in the present study were aware of the need of collecting material for a Pap smear test after the first sexual intercourse, they were confused when asked about who should be submitted to such test. This is probably due to the fact that many adolescents do not know about the real need or function of the test.

CONCLUSION

We concluded that the level of knowledge about prevention of STDs and uterine cervical cancer among adolescents studied in the city of Jundiaí is low, and this is of much concern given the incidence and future implications of these diseases. We also concluded that educational lectures are inexpensive and represent a broadly encompassing action which could revert this situation of lack of knowledge of adolescents regarding STDs and uterine cervical cancer.

REFERENCES

Appendix 1. Questionnaire

Record number: |___|___|___|

1. Age: |__|__| years

2. Current school grade:
   a. 6º grade (Junior School)
   b. 7º grade (Junior School)
   c. 8º grade (Junior School)
   d. 9º grade (Junior School)
   e. 10º grade (High School)
   f. 11º grade (High School)
   g. 12º grade (High School)

3. School:
   a. EMEB Maria José Maia de Toledo
   b. EMEB Rotary Club
   c. EMEB Dep. Ranieri Mazzilli
   d. EE Cel. Siqueira de Moraes
   e. EE Bispo Dom Gabriel P. B. Couto
   f. EMEB Prof. Albino Melo de Oliveira
   g. EMEB Morada das Vinhas
   h. EMEB Prof. Luiz Rivelli
   i. EE Padre Maurilio Tomanik

4. Do you have or already had sexual education class?
   a. Yes  b. No

5. Do you know what a sexually transmitted disease is?
   a. Yes  b. No

6. Write down the sexually transmitted diseases you know:
   a. ______________________________ 
   b. ______________________________ 
   c. ______________________________ 
   d. ______________________________ 
   e. ______________________________ 

7. Do you think it is important to use condoms?
   a. I do not think so
   b. I do not know
   c. Yes, if the woman does not take the pill, the couple should use condom to avoid getting pregnant
   d. Yes always, because it avoids pregnancy and prevents diseases

8. Do you think women should make appointments with gynecologists?
   a. I do not know

9. Have you heard about HPV?
   a. I have never heard
   b. I have heard, but I do not know exactly what it is
   c. I have heard, and I know what it is:

10. Have you heard about Pap smear test?
    a. I have never heard
    b. I have heard: □ at school □ on television
        □ in newspaper □ in lectures □ at home
        □ by friends □ other places: ________________________

11. What is the Pap smear test for?
    a. I do not know
    b. To avoid diseases
    c. To avoid uterine cervical cancer
    d. To do any cancer in women

12. Do you think it is necessary to undergo this test?
    a. I do not know
    b. I think it is not necessary
    c. I think it is not very necessary
    d. I think it is very necessary

13. Who should undergo this test?
    a. Women with active sexual life
    b. Women after menarche (first menses)
    c. Woman aged over 5 years

14. Do you know someone who had cervical cancer?
    a. I have never heard
    b. I have heard: □ at school □ on television
        □ in newspaper □ in lectures □ at home
        □ by friends □ other places: ________________________

15. Do you know if there is any test to prevent cervical cancer?
    a. I do not know
    b. Yes, there is
    c. There is none, because no cancer can be avoided

16. Do you know someone who had breast cancer?
    a. I have never heard
    b. I have heard: □ at school □ on television
        □ in newspaper □ in lectures □ at home
        □ by friends □ other places: ________________________

17. Have you heard about breast self-examination?
    a. I have never heard
    b. I have heard: □ at school □ on television
        □ in newspaper □ in lectures □ at home
        □ by friends □ other places: ________________________

18. How should breast self-examination be performed? (explain briefly)
    a. ______________________________ 
    b. ______________________________ 
    c. ______________________________ 
    d. ______________________________ 
    e. ______________________________ 

19. Do you think is important for women to examine their breasts?
    a. Yes
    b. No

20. Have you heard about mammography?
    a. I have never heard
    b. I have heard: □ at school □ on television
        □ in newspaper □ in lectures □ at home
        □ by friends □ other places: ________________________

21. Who should undergo mammography?
    a. Hospital
    b. Office
    c. Primary healthcare clinic
    d. At all places mentioned above

22. Where can mammography be performed?
    a. Hospital
    b. Office
    c. Primary healthcare clinic
    d. At all places mentioned above

23. Have you ever undergone mammography?
    a. No
    b. Yes. How many?
        □ Once
        □ Twice
        □ More

24. Have you ever participated in such a lecture? Where?
    a. Poor
    b. Regular
    c. Good
    d. Excellent

25. What is your opinion about the lecture?
    a. Poor
    b. Regular
    c. Good
    d. Excellent