

ASSESSMENT OF OCCURRENCE FREQUENCY AND THE LEVEL OF STUDENTS' KNOWLEDGE OF VAGINITIS

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Abstract: Introduction. Vaginitis is a pathological state, which potentially every woman can get afflicted with, independent of age. The aim of this work was to assess the frequency of vaginitis occurrence and the level of students' knowledge on the subject matter.

Materials and methods. The research was conducted on the group of 200 Lomza State University of Applied Sciences female students in Lomza. The studied women were in 19-50 age range. Diagnostic survey was used as a method and a self-prepared questionnaire as a tool for the research.

Results. Among various etiological factors of vaginitis, the students were most acquainted with a yeast infection (66.0%) and the most often mentioned factors fostering its occurrence included: „insufficient hygiene level” (56.0%) and sexual intercourse (55.5%). A vast majority (83.0%) stated that having multiple sex partners fosters the inflammation. 55.0% of the women stated that checkups at a gynecologist should be done „once half a year”, but as many as 44.5% of the respondents attended a specialist only in case the symptoms occurred and 23.5% had never done it. The students claimed that the most well-known way of preventing vaginal infections was „a proper hygiene of private parts” (88.0%). 32.0% of the women had undergone vaginitis, where 21.9% had its recurrence. The most frequent cause of vaginitis were yeasts (62.5%). 47.0% of the respondents admitted that the subject matter is being very seldom discussed in the available sources.

Conclusions. 1. The female students' knowledge of the issues connected with vaginitis was poor.

2. Many from the surveyed women visited gynecologists irregularly and some of them had never done that.

3. Every third woman had suffered from vaginitis in her lifetime and in every fifth of them the disease had a recurring nature.

4. There is a necessity of more extensive education on the issues connected with vaginitis for women in various age groups, beginning from the school period.

Key words: vaginitis, candidiasis, bacterial vaginosis, trichomoniasis

Introduction

Vaginitis is a pathological state, which potentially every woman can become afflicted with, independent of age, life-style, or profession. It belongs to the most frequent gynecological problems and reasons for which women appoint to the K. clinic. Vaginitis appears when the healthy vaginal microbiota is disrupted. Acidic environment of vaginal discharge, which protects from infections, is conditioned by lactic acid produced by *Lactobacillus* bacteria. The disruption of healthy vaginal microbiota can be caused by sexual intercourse or a period. Inflammations are fostered by maintaining insufficient or excessive personal hygiene (irrigation, tampons), using public lavatories, swimming-pools, towels, sponges, taking contraceptives and frequently changing sex partners. The endogenic factors include: diabetes, pregnancy, states of reduced immunity.

The most frequent etiological factors causing vaginitis include anaerobic bacteria, yeasts and protozoa [1, 2]. Anaerobic bacteria cause the so-called bacterial vaginosis (BV), which gives little or no symptoms and is diagnosed with

the use of the Nugent Score or/and the Amsel criteria [3]. Yeasts cause candidiasis, i.e. vaginal and vulvar yeast infection [4]. *Candida albicans* is responsible for 85-80% of all the infections. The etiologic factors rarely comprise of other species of yeasts, such as: *Candida glabrata*, *Candida tropicalis* and *Candida krusei* [2]. Yeast infection usually gives symptoms of a yellowish or white, cottage cheese-like and thick vaginal discharges accompanied by intensified subjective symptoms and signs of inflammation. For some part of women, it has a recurring nature [5]. *Trichomonas vaginalis* causes vaginal and urinary system inflammation with intensified subjective and objective symptoms [6, 7]. Aerobic bacteria, among others: *Escherichia coli* and *Enterococcus faecalis* are more and more often said to be the reason for vaginitis, which can lead to serious gynecological and obstetrics consequences [8]. This type of inflammations may occur in an isolated form, or coexist with a yeast infection, trichomoniasis or bacterial vaginosis [9].

Women's knowledge of vaginitis is very important, most of all due to the possibility of complications and infecting their sex partners. It is important for every woman, irre-

spective of age, to possess knowledge of the proper personal hygiene rules as well as of prevention, etiological factors and clinical symptoms of vaginal inflammations. She should be aware of the need to contact a specialist as early as possible. Other important problems are insufficient access to laboratories that diagnose infections of female genital tracts and too frequent practice of the so called self-treatment.

The aim of the work was to estimate the frequency of vaginitis occurrence and to assess the knowledge level of female students of the issue under consideration.

Research Material and Methodology

The study was conducted on the group of 200 female students of Lomza State University of Applied Sciences. The surveyed women were divided into the age groups from „18-20” to „≤50”. The most numerous group was composed of women in the 21–26 age range (61.5%) and the least numerous one of students in their 50s or above (0.5%). The students in the 18-20 age range group constituted 21.0% of the total number of the surveyed women, 27-30 years – 8.5%, 31-40 years – 6.5% and 41-50 years – 2.0% of the women.

The diagnostics survey method was implemented for the purpose of the research and a self-prepared questionnaire was used as a research tool, which was composed of 26 survey questions and 4 personal questions (age, place of residence, marital status, field of study). These questions were constructed so as to enable the assessment of the level of the surveyed women’s knowledge of vaginitis, their views as well as to present the dependencies between the pro-health behaviors of the women and the risk of infection.

The survey questions were completely facultative and anonymous. The surveyed women could at any time resign from participation in the research.

Results

All the surveyed students heard or had some experience in the issue under consideration. Most frequently, they acquired knowledge on vaginitis from the Internet (80.0%), sometimes from the family (53.0%) and from the health care employees (41.0%). 32.5% of the students obtained their knowledge at their university.

Among various etiological factors of vaginitis, the students were most acknowledged with a yeast infection (66.0%) and the least with trichomoniasis (40.5%). Fig. 1 presents a detailed analysis of answers for the aforementioned questions.

In the question related to the factors fostering vaginitis, the surveyed students most frequently mentioned insufficient personal hygiene level (56.0%) and the least – excessive hygiene and pregnancy (11.5% respectively). 55.5% of

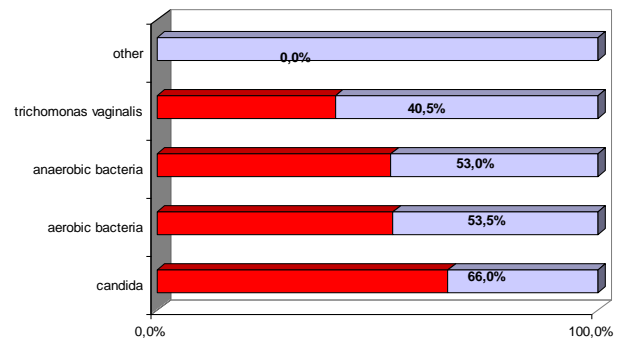


Fig. 1: Respondents' Answers to the Question Concerning the Knowledge of Etiological Factors of Vaginitis (n=200).

the students claimed that sexual intercourse is a contributing factor, 40.0% chose „using other people’s towels or underwear” and 34.0% stated that it is „visiting saunas or swimming-pools”. 27.5% of the women declared that all the above listed states or behaviors influence the occurrence of vaginitis. A vast majority of respondents (83.0%) thinks that having multiple sex partners fosters inflammations, 5.0% denies that and 12.0% admitted that they are not sure whether such a correlation exists (Fig. 2).

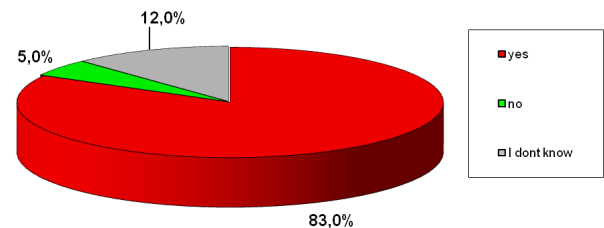


Fig. 2: Students' Answers to the Question Concerning the Influence of Having Multiple Sex Partners on the Occurrence of Vaginitis (N=200).

Next question concerned the type of vaginitis which should be cured by a specialist. The most frequently chosen answer was that „all the above mentioned inflammations should be cured” (71.5%). 11.5% of the women selected only „yeast infection”, 7.5% – „trichomoniasis” and 5.0% of the women – „bacterial infection”. Table 1 presents a detailed analysis of answers for the aforementioned questions.

Fig. 3 illustrates the percentage response rate of students for the question about their knowledge of the proper frequency of regular gynecological checkups. The most often selected answer was „once half a year” (55.0%) and the least – „once two years” and „less frequently than once two years” (1.5% respectively).

Later, the women were asked about the frequency of their gynecological checkups. Only 32.0% of the surveyed admitted to regular visits to a specialist. 44.5% of the women attended a specialist only when symptoms occurred and 23.5% of the respondents had never visited the gynecological clinic (Fig. 4).

Table 1: Numerical and Percentage Values of the Students' Answers for the Question Concerning the Types of Vaginitis, which Demand Specialized Treatment (n=200).

Possible answers	The number of answers (n)	Answers' percentage (%)*
candida infection	23	11,5
Trichomonas vaginalis infection	15	7,5
Bacterial infection	10	5,0
All the above mentioned	143	71,5
None of the above mentioned	2	1,9
I don't know	25	12,5

*The percentage results of the acquired data do not sum up to 100, because the respondents had a multiple choice.

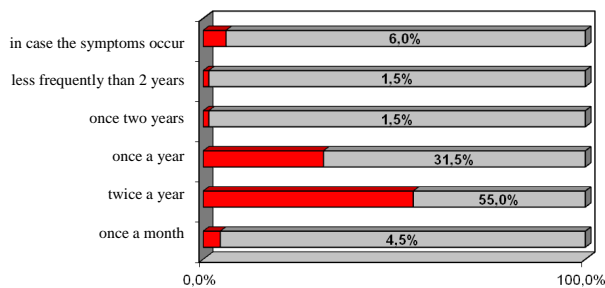


Fig. 3: Respondents' Answers to the Question Concerning the Proper Frequency of Visiting a Gynecological Clinic (n=200).

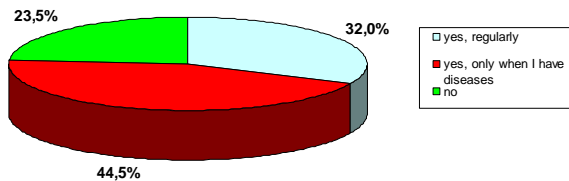


Fig. 4: Respondents' Answers to the Subject of Their Own Visits to Gynecological Clinics (n=200).

The next question concerned students' knowledge of the ways to prevent vaginal infections. The most frequently chosen method was „proper hygiene of private parts” (88.0%), more seldom was „regular visits to a gynecologist” (65.5%), „using loose cotton underwear” (58.5%) and „using condoms” (57.0%). Fewer students mentioned – „avoiding excessive moisture of the private parts” (33.0%) and „reducing the use of tampons” (31.0%). The results of the acquired data do not sum up to 100%, because the survey included multiple-choice questions.

When the students were asked about the frequency of maintaining private parts hygiene, 50.0% of them selected the answer: „once a day”, 41.0% „twice a day” and 7.5% – „more often than twice a day” (Fig. 5).

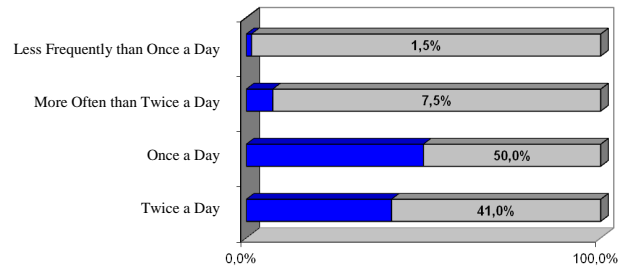


Fig. 5: Frequency of maintaining private parts hygiene by the respondents (n=200).

The next question concerned women's personal hygiene cosmetics. A vast majority of the women (70.5%) used special cosmetics with 5.5 pH, 20.5% of the studied females used normal soap and 8.0% only water. 1.0% added own response – „grey soap” (Fig.6).

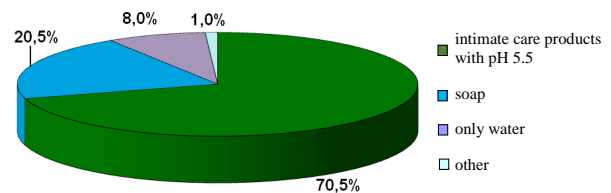


Fig. 6: Types of Cosmetics Used By Respondents for Personal Hygiene (n=200).

In the group of two hundred surveyed women, 32.0% had undergone vaginitis, 54.0% had never had this pathological state and 14.0% were not able to say if the inflammation had ever happened to them (Fig. 7).

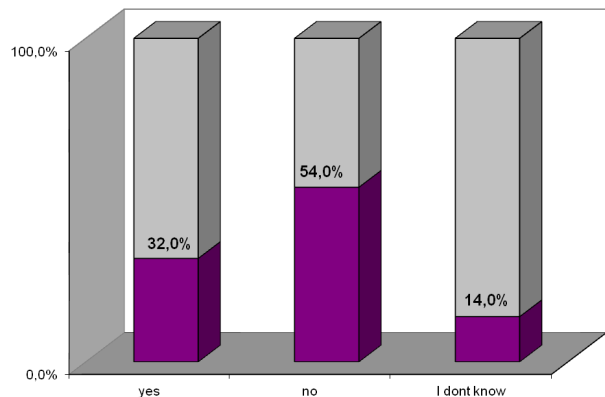


Fig. 7: Women's Answers to the Question of Suffering from Vaginitis (n=200).

Further questions were devoted only to women who suffered vaginitis (n=64). 53.1% of the women had it only once, 25.0% two or three times and in 21.9% vaginitis had a recurring nature (Fig. 8). The most frequent cause of vaginitis are yeasts (62.5%) and the least frequent – trichomoniasis (1.6%). 15.6% of the respondents admitted that in

their case there were no confirmatory examinations. Table 2 presents the detailed data.

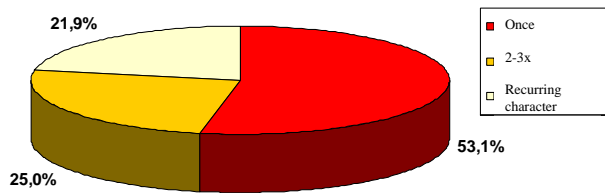


Fig. 8: Vaginitis Occurrence Frequency in the group of students (n=64).

Table 2: Type of Etiological Factors of Vaginitis in the Studied Group of Women (n=64).

Etiological factor	The numer of answers (n)	Answers' percentage (%)*
candida	40	62,5
aerobic bacteria	10	15,6
anaerobie bacteria	8	12,5
Trichomonas vaginalis	1	1,6
The examinations were not conducted	10	15,6

*The percentage results do not sum up to 100, because the women could select a couple of answers

Finally, the female students were asked to provide their opinion about the level on which the issue is being discussed in the available sources. The majority of the women (47.0%) admitted that it is very low. 27.0% claimed the available information on vaginitis is sufficient and 13.0% described the level as satisfactory, 9.0% of the surveyed claimed that the issue is rarely raised publicly.

Results Summary and Discussion

Vaginitis is a common pathological state that affects women of all ages, independent of their social status, education or profession. The earlier a woman acquires knowledge of prevention, risk factors and clinical symptoms of this kind of state, the better she will be able to prevent serious consequences and avoid infecting her sex partner.

Own research proved that all the surveyed women share some knowledge of vaginitis. The main source of it is the Internet (80.0%), probably because a vast majority of them (91.0%) are 30 or less. CBOS research confirms it and indicates that the main Internet users are young people [10]. Due to this, promoting this source of knowledge seems justifiable and it would be advisable to provide it with much valuable and verified information. There is a chance that young generations will search information on the bothering questions.

According to Zielinska, „the research carried out in Poland on the school youth proved that sexual education taught in the present form is insufficient, mainly due to the lack of engagement from the side of parents/family in shaping attitudes towards body, gender and sex according to biological, physical, cultural and ethical aspects of human sexuality” [11]. These words find confirmation in own research. In case of only every other person, the source of knowledge was their family (53.0%). It seems alarming that the health care, which is supposed to play a significant role in pro-health education of the society, in case of the researched group was not so often (41.0%) mentioned as a main source of information. The objective should be that people connected with health care were systematically trained and the health care system modified according to the current needs of the society. 1/3 (32.5%) of the respondents indicated their university as a main source of knowledge. It is important that the issues connected with vaginitis were mentioned as early as in primary school and the latest in lower or higher secondary school.

In own research, from all etiological factors causing vaginitis, the surveyed female students were acquainted the most with yeast infections (66.0%) and the least with those caused by trichomoniasis (40.5%). The students should be familiar with the subject, because as Reroń and Trojnar-Podleśny stated, infections of vagina and uterus belong to the most common health problems of women in all ages and especially of those who are sexually mature [12]. It is therefore important that health education included also the knowledge of vaginitis.

There are many factors fostering inflammations of private parts [13, 14]. Awareness of them very often helps to avoid unpleasant symptoms. The respondents' knowledge of the risk factors of genital tract infections varied. Only 27.5% of the students selected the total number of the correct answers. The rest marked only single factors such as: no or excessive personal hygiene, using shared towels and sponges, swimming pools and saunas. A vast majority (83.0%), however, knew that frequent change of sex partners is one of the main factors fostering vaginitis. According to Filipp et al. only the abstinence programs that promote late commencement of sexual initiation and limitation of the number of sex partners, offer opportunity for reducing the spread of vaginitis and other sexually transmitted infections [15].

According to CBOS research from 2012, 34.0% of the respondents claimed that regular health checkups influence the improvement in health condition [16]. In own research, we checked the women's knowledge of proper frequency of visits to a gynecological clinic. The most often chosen answer was „once half a year” (55.0%) and the least – „once two years” and „more seldom than once two years” (1.5% respectively). Unfortunately, only 32.0% of the women visi-

ted a gynecologist regularly, 44.5% of them used his service only when the symptoms occurred and 23.5% had never been to the gynecological clinic. It would be advisable to place a stronger emphasis on pro-health education about the inflammation of genital tract and encourage women to visit a gynecologist regularly.

A great majority (88.0%) of the women from the surveyed group selected „proper hygiene of private parts” among the various ways of preventing vaginal infections. Insufficient hygiene or its excess can cause genital tract infections. According to own research, it can be concluded that not even the whole half of the students (41.0%) implemented a proper hygiene practice by maintaining it twice a day. Slightly more (50.0%) do it only once a day. However, there is a very positive fact that a great majority (70.5%) of the women used special cosmetics with pH 5.5, which provides good protection for sensitive parts.

The problem of vaginitis is widespread in the population of women, independent of age, but mostly when they are sexually mature. It constitutes the most frequent cause of visits to a gynecological clinic. Similarly, own research demonstrated a significant increase in the number of private parts disorders. 32.0% of the surveyed students admitted that they had suffered from vaginal infection, where slightly more than a half (53.1%) only once and 21.9% suffered from a recurring infection. All of the women were in a breeding period. As for the causes of inflammations, the most common answer were yeasts (62.5%) and the least common – trichomoniasis (1.6%). It appears to be a positive phenomenon that in the majority of women, the reason was verified by examinations. Only 15.6% of the women did not have their diagnostics confirmed. Such situations should not take place in modern medicine, because only properly diagnosed infections have the chance to be early and completely cured and their reoccurrence prevented as much as possible. In the available literature, we found no articles similar to those included in own research and due to that there was no opportunity to compare the acquired results with the results gained by other authors.

Conclusions

1. Students' knowledge of vaginitis types, risk factors and prevention was on an average level.
2. The Internet constituted the main source of information.
3. Every other from the surveyed women used the service of a gynecologist irregularly and every forth had never visited a gynecological room. It would be advisable to encourage women to more frequent visits to a gynecologist.
4. The problem of vaginitis in the studied population of women was common. Every third woman had undergone private parts infection and every fifth suffered from a recurring one.

5. Almost half of the respondents claimed that the problem of vaginitis is being discussed on a low level. There is a necessity of broad-based education in the field of vaginitis, in various age groups of women, beginning from the school period.

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