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The sexual behaviors of young Polish women and their knowledge about contraception

Abstract

Introduction. With the increasing trend of early sexual activity among adolescents, contraception has become a crucial topic. Poland ranks last in the Contraceptive Atlas, as the country with the poorest access to contraception methods and information. This results in a low level of contraceptive knowledge among young people, leading to unintended pregnancies and sexually transmitted infections. Adequate sexual education is a key element in promoting sexual health, enabling informed contraceptive choices based on medical knowledge. The responsibility for sexual education lies not only with parents but also with educators, pedagogues, doctors, and governmental bodies.

Aim. To assess knowledge about contraception and investigate the sexual behaviors of women aged 15-25, comparing the results with available literature and indicating possible preventive actions in the studied area.

Material and methods. An anonymous electronic survey was conducted among women aged 15-25 from across Poland. The survey was distributed on various internet groups, primarily comprising students. It included closed-ended questions verifying knowledge of the topic under study and a demographic section. Statistical analysis of the data was performed using Statistica and Microsoft Excel.

Results. The average age of sexual initiation among respondents was 17.84±1.96 years, with one-third of them yet to engage in sexual activity. The majority of respondents (58%) had 1 to 3 sexual partners, and with increasing age and education level, the percentage of those with a higher number of sexual partners increased. The most popular contraceptive methods among respondents were barrier methods, combined oral contraceptive pills, and a combination of barrier and hormonal methods. The main sources of contraceptive information for the respondents were the internet, gynecologists, and scientific literature. Almost all respondents were aware of the definition of contraception, but only half were aware of the Pearl Index. Less than half of the respondents could identify the most effective contraceptive method, while almost all correctly identified the least effective method. The knowledge of the majority of respondents was assessed as moderate, good, or very good.

Conclusions. Despite the generally good knowledge of contraception among the majority of respondents, there are still gaps that need to be filled. Due to the progressively decreasing age of sexual initiation, education on contraception is a priority that will help reduce the number of unintended pregnancies and sexually transmitted diseases in the future.

Keywords: contraception, sexual education, young women, public health, health education.

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INTRODUCTION

According to the 2022 WHO report on Sexual Health and Reproductive Rights (HRP), the definition of sexual health comprises various factors. It includes not only the absence of diseases or organic dysfunctions but also mental well-being, a healthy approach to sexuality, and safe, pleasurable, non-violent sexual experiences.

The trend of adolescents engaging in sexual intercourse at an increasingly younger age is becoming common both in Poland and worldwide. The age of sexual initiation for most countries falls between 15 and 18 years old. Analyzing scien-

tific literature, it can be inferred that sexual activity before the age of 18 affects up to 80% of teenagers.

Contraception refers to all methods and actions aimed at preventing pregnancy. These include hormonal two-component methods (combined oral contraceptives, patches, vaginal rings), hormonal single-component methods (progestin-only pills, hormonal intrauterine devices, DMPA injections, implants), non-hormonal methods (copper intrauterine devices), barrier methods (condoms), behavioral methods (withdrawal, fertility awareness-based methods), and natural methods (calendar, cervical mucus, basal body temperature).

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In the Contraceptive Atlas prepared by the European Parliamentary Forum on Sexual and Reproductive Rights, Poland ranks last as a country with one of the poorest accesses to contraception methods and information. This is reflected in numerous studies showing low levels of contraceptive knowledge among young people. This situation, combined with early sexual activity, contributes to an increase in unintended pregnancies and sexually transmitted diseases among young women.

Globally, about 40% of pregnancies result from ineffective contraception or lack thereof. Approximately half of these pregnancies end in abortion. This carries long-term consequences for both society (e.g., financial burdens, increased healthcare costs) and young mothers (e.g., birth complications, higher risk of maternal mortality, limited access to healthcare services, difficulties in obtaining education and employment).

The use of contraception during sexual intercourse among young people worldwide is increasing; however, many still do not use any method or use it irregularly. Condoms seem to be the most commonly chosen method, providing protection against sexually transmitted infections, although their effectiveness is lower compared to other contraceptive methods.

A study conducted in 2022 regarding contraceptive methods used by Korean women showed a preference for condoms and natural methods over Long-Acting Reversible Contraception (LARC) such as hormonal or copper intrauterine devices. However, women in the latter group reported higher satisfaction levels with their chosen contraception method. Researchers concluded that more women would opt for LARC if counseling on contraceptive methods was of a higher standard, allowing for a comprehensive understanding of the advantages and disadvantages of each method.

Therefore, it can be concluded that adequate sexual education is an important element of actions aimed at maintaining sexual health. Properly conducted education enables informed choices regarding contraceptive methods based on medical knowledge, thereby reducing the incidence of sexually transmitted diseases and unintended pregnancies. The responsibility for sexual education should lie not only with the parents of young people but also with educators, pedagogues, doctors, and governmental bodies.

AIM

To assess knowledge about contraception and investigate the sexual behaviors of women aged 15-25, compare the results with available literature, and identify possible preventive actions in the studied area.

MATERIALS AND METHODS

An anonymous electronic survey was conducted, in which 430 women aged 15-25 from across Poland participated. The survey was made available from December 14, 2023, to December 24, 2023, on numerous internet groups, primarily comprising students. The average age of the respondents was 20.46 ± 2.88 years, with the majority of them coming from the Podkarpackie Voivodeship (22.09%), Dolnośląskie Voivodeship (12.1%), or Mazowieckie Voivodeship (10.9%). Nearly half of the respondents lived in rural areas (26%) or cities with a population of over 500,000 (23%). Over half of the respondents had secondary education (55.3%), with similar proportions having higher (23%) or primary (21.4%) educa-

tion. More than half of the respondents were students (63%), with every fourth respondent attending high school (28.1%).

The statistical analyses have been performed using the statistical suite StatSoft. Inc. (2017), STATISTICA (data analysis software system) version 13.0. www.statsoft.com. Figures were created in Microsoft Excel 2010 version 14.0.7268.5000.

The quantitative variables were characterized by the arithmetic mean of standard deviation or median (1st – 3rd quartile) or max/min (range) and 95% confidence interval. The qualitative variables were presented with the use of count and percentage.

In order to check if a quantitative variable derives from a population of normal distribution the W Shapiro-Wilk test has been used. To determine dependence, strength, and direction between variables, Pearson's chi-square test, Cramer's V, and the Mann-Whitney U test were used. In all the calculations the statistical significance level of $p=0.05$ has been used.

RESULTS

The vast majority of respondents identified as heterosexual (77%), while nearly one-sixth identified as bisexual (15.8%). A similar proportion of respondents identified as nominal Christians (37.7%) or non-religious (35.8%). More than half of the respondents (56.5%) were in informal relationships, while a significantly smaller proportion (40%) were not in a relationship.

The average age of sexual initiation among respondents was 17.84 ± 1.96 years, with nearly one-third of them not having engaged in sexual activity yet (32.1%). Residents of the Dolnośląskie, Mazowieckie, and Lubelskie Voivodeships initiated sexual activity significantly more often ($p < 0.01$) than residents of Podkarpackie and Świętokrzyskie Voivodeships. Residents of cities with a population over 500,000 initiated sexual activity more frequently ($p < 0.01$) and at a younger age than residents of rural areas. Respondents who identified as practicing Christians ($p < 0.01$) engaged in sexual activity significantly less frequently and at a later age than others. Each of the described relationships is relatively weak.

The majority of respondents described themselves as sexually active individuals (58.1%), with similar proportions engaging in sexual intercourse several times a month (36.51%) or at least several times a week (33.33%). Individuals in informal relationships engaged in sexual intercourse most frequently several times a week, followed by married individuals several times a month, while single individuals engaged in sexual intercourse several times a year ($p < 0.01$). This relationship is relatively weak.

Most respondents had 1 to 3 sexual partners (58.4%). With increasing age ($p < 0.01$) and education level of the respondents ($p < 0.01$), the proportion of those having a greater number of sexual partners increased. Individuals identifying as practicing Christians ($p < 0.01$) had fewer sexual partners than others. The first described relationship is moderately strong, the second is relatively weak, and the third is weak.

Among the contraceptive methods used in the past, respondents most frequently mentioned barrier methods (81.2%) and combined oral contraceptive pills (34.6%), while nearly one-fifth of them (6.16%) had never used any contraceptive method despite being sexually active.

The most popular contraceptive method among sexually active respondents was barrier methods (38.8%), followed by combined oral contraceptive pills (19.6%) and a combination of barrier and hormonal methods (11.2%), while nearly one-tenth of them (8.8%) did not use any contraceptive method.

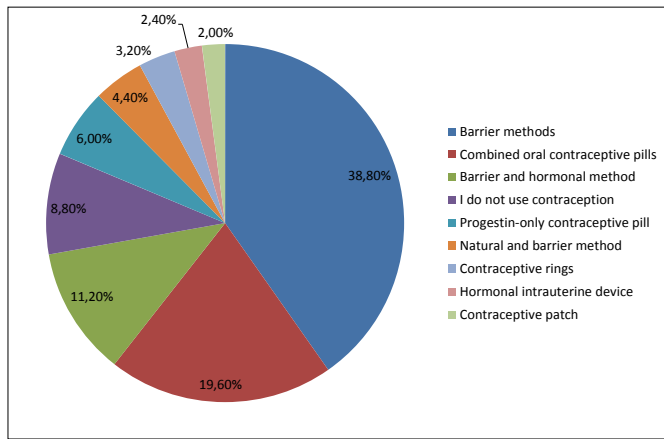


FIGURE 1. Contraceptive methods used by sexually active respondents.

The majority of respondents stated that they do not engage in casual sexual intercourse (70.89%). Nearly one-third (31.76%) of those who reported engaging in such intercourse do not always use any contraceptive method during it. Individuals identifying as practicing Christians ($p=0.01$) were less likely than others to use contraception during casual sexual intercourse. With an increase in the number of sexual partners ($p<0.01$), the proportion of women engaging in casual sexual intercourse also increased. Such intercourse was primarily reported by women engaging in sexual intercourse several times a month ($p<0.01$). The first described relationship is relatively weak, the second is moderately strong, and the third is relatively weak.

Among respondents using a contraceptive method, close to three-quarters (73.96%) were afraid of pregnancy, while less than half of them (43.2%) relied on calculated fertile days to engage in sexual activity. This phenomenon was most common among individuals identifying as practicing Christians ($p<0.01$), residing in rural areas ($p<0.01$), and using barrier methods of contraception ($p<0.01$) – the first and second relationships are relatively weak, while the third one is moderately strong.

More than half of the respondents regularly visit a gynecologist (54.2%), with a similar proportion (56.5%) having visited this specialist within the last 12 months. Nearly one-tenth of the respondents (12%) who initiated sexual intercourse in the past had never visited a gynecologist. With age ($p<0.01$), the proportion of women regularly visiting a gynecologist increases, and they visit more often (the first relationship is relatively weak, while the second one is moderately strong). Residents of the Dolnośląskie and Lubelskie Voivodeships ($p<0.01$) visit gynecologists much more regularly than residents of the Podkarpackie Voivodeship (relatively weak relationship). Women in relationships ($p<0.01$) visit gynecologists significantly more regularly and often than single women (relatively weak relationships), and the same applies to sexually active women ($p<0.01$) (the relationship regarding the regularity of visits is relatively weak, while the frequency is moderately strong). The highest regularity and frequency of visits to gynecologists were observed among women with 1 to 6 sexual partners in the past ($p<0.01$) and those using hormonal contraceptive methods ($p<0.01$) (relationships related to the regularity of visits were moderately strong, while those related to the frequency were relatively weak). It should be noted that the higher frequency of visits to gynecologists among women using hormonal contraception is most likely due to the necessity of obtaining a prescription for these methods.

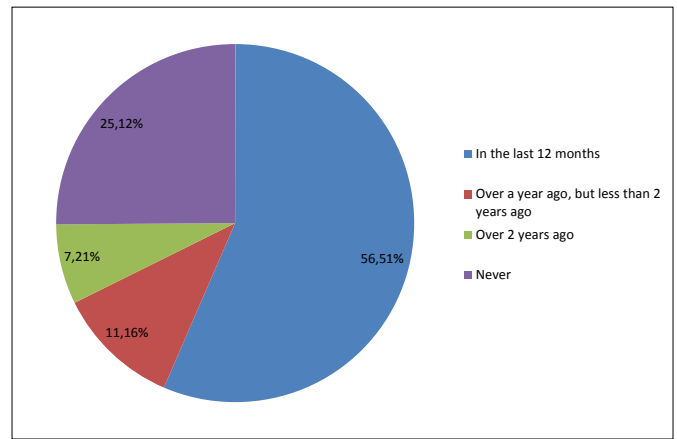


FIGURE 2. Answers to the question about respondents' last visit to a gynecologist.

The majority of respondents (57.2%) were not vaccinated against HPV. The highest proportion of vaccinated women was found in the Dolnośląskie Voivodeship ($p<0.01$) and among older individuals in the surveyed group ($p<0.01$). Both relationships are relatively weak. It should be noted that the majority of respondents in school age were unable to answer whether they had been vaccinated against HPV, which means that the above conclusion should be approached with caution.

The main sources of information regarding contraception for the respondents were: the internet (87.9%), gynecologists (51.6%), and scientific literature (50.9%). Percentages do not sum up due to the possibility of choosing multiple answers. A gynecologist was the main source of information about contraception for women: older individuals in the surveyed group ($p<0.01$), those with higher education ($p<0.01$), those in relationships ($p<0.01$), sexually active individuals ($p<0.01$), those using hormonal contraceptive methods ($p<0.01$), and those with 1 to 6 sexual partners in the past ($p<0.01$). All described relationships, except for the last one, which is moderately strong, are relatively weak. The internet was an important source of information for women before sexual initiation ($p=0.03$), while scientific literature was important for older individuals in the surveyed group ($p<0.01$). The first relationship is weak, while the second is relatively weak.

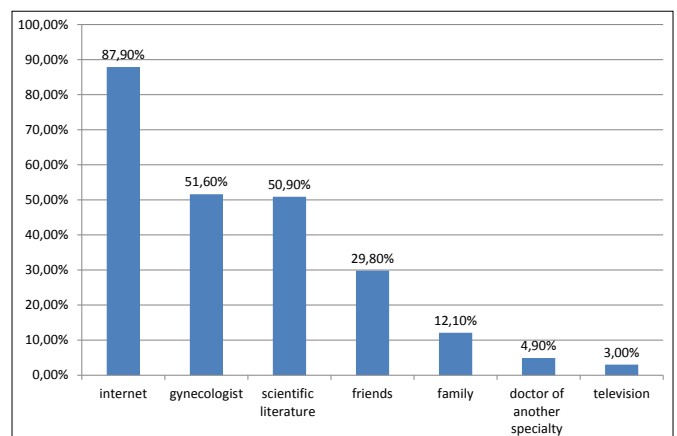


FIGURE 3. Sources of knowledge about contraception (multiple choice question).

Practically all respondents (97%) were able to correctly identify the definition of contraception, however, only half of them knew what the Pearl Index is (53.3%). Correct answers to this question were mainly known by older women in the surveyed group ($p < 0.01$), after sexual initiation ($p < 0.01$), sexually active ($p < 0.01$), and those using contraception ($p < 0.01$), however, these relationships are relatively weak. Less than half of the respondents (44.2%) were able to identify the most effective method of contraception among those listed (hormonal intrauterine device), it is worth noting that almost one-fourth of them (28.8%) incorrectly indicated the combined oral contraceptive pill. Interestingly, practically all respondents (93.5%) correctly identified the least effective method of contraception among those listed (calendar method).

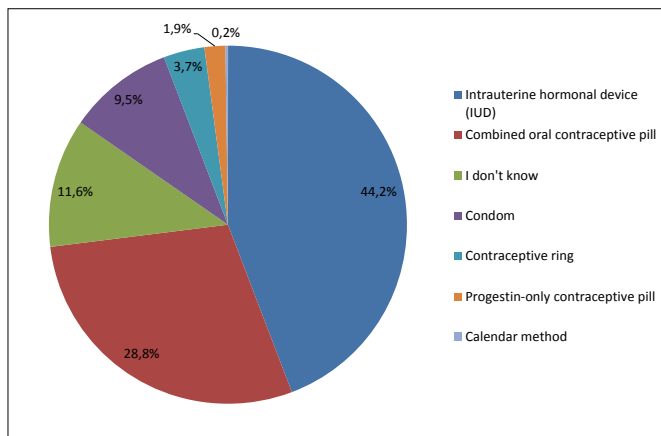


FIGURE 4. Answers to the question about the most effective method of contraception.

Close to half of the respondents (52.6%) know that using hormonal contraception does not lead to fertility disorders in the future, while almost one-third of them (32.8%) gave an incorrect answer to this question. Correct answers were given mainly by women after sexual initiation ($p < 0.01$), sexually active ($p < 0.01$), and those using hormonal contraception ($p < 0.01$), although these relationships are relatively weak. Similarly, the distribution of responses to the question about reducing the risk of certain cancers by hormonal contraceptives was as follows: 50.2% correct answers and 29.1% incorrect answers. The vast majority of respondents were able to correctly identify the principle of the calendar method (66%). Correct answers were given mainly by older women in the surveyed group ($p < 0.01$), although this relationship is rather weak. Just over half of the respondents (58.4%) knew that surgical sterilization on request is illegal in Poland. Correct answers were given mainly by older women in the surveyed group ($p < 0.01$), after sexual initiation ($p < 0.01$), and using contraception ($p < 0.01$), although these relationships are rather weak. Practically all respondents (97.9%) knew that it is possible to conceive during the first sexual intercourse in life, but a noticeably smaller percentage of them (87.9%) knew that it is also possible during intercourse occurring during menstrual bleeding. Close to one-fifth of the respondents (17.7%) believed that withdrawal method prevents pregnancy. Correct answers to this question were given mainly by women after sexual initiation ($p < 0.01$) and using contraception ($p < 0.01$) – these relationships are rather weak. Almost all respondents knew that hormonal contraception does not protect against sexually transmitted diseases (92.8%) and that douching af-

ter intercourse does not prevent fertilization (92.3%). Close to one-fifth of the respondents (18.4%) believed that condoms provide 100% protection against sexually transmitted diseases. Differentiating between emergency contraception and early abortion methods proved to be challenging for respondents – slightly over half (53.7%) gave the correct answer. Correct answers were given mainly by older women in the surveyed group ($p < 0.01$), although this relationship is rather weak. Almost all respondents (94.2%) knew that contraceptive pills maintain their effectiveness only with regular intake, but significantly fewer of them (68.8%) were aware that food and other substances may affect their effectiveness. Correct answers were given mainly by older women in the surveyed group ($p < 0.01$), after sexual initiation ($p < 0.01$), and sexually active ($p < 0.01$), although each of these relationships is rather weak.

The majority of respondents rated their knowledge of contraception as good (38.8%) or moderate (38.8%). Older women in the surveyed group ($p < 0.01$), those in a relationship ($p < 0.01$), after sexual initiation ($p < 0.01$), sexually active ($p < 0.01$), using contraception ($p < 0.01$), and regularly attending a gynecologist ($p < 0.01$) rated their knowledge of contraception better, although all of these relationships are rather weak.

The questionnaire consisted of 17 questions assessing knowledge of contraception, with 1 point awarded for each correct answer and 0 points for incorrect answers. After summing up the points, the result was described according to the following scale: 0-5 points very poor, 6-9 poor, 10-12 moderate, 13-15 good, 16-17 very good. The knowledge of the majority of respondents was assessed as moderate (35.81%), good (33.49%), or very good (23.95%). Older women in the surveyed group ($p < 0.01$), those in a relationship ($p < 0.01$), after sexual initiation ($p < 0.01$), sexually active ($p < 0.01$), using contraception ($p < 0.01$), and regularly attending a gynecologist ($p < 0.01$) showed better knowledge of contraception, although all of these relationships are rather weak.

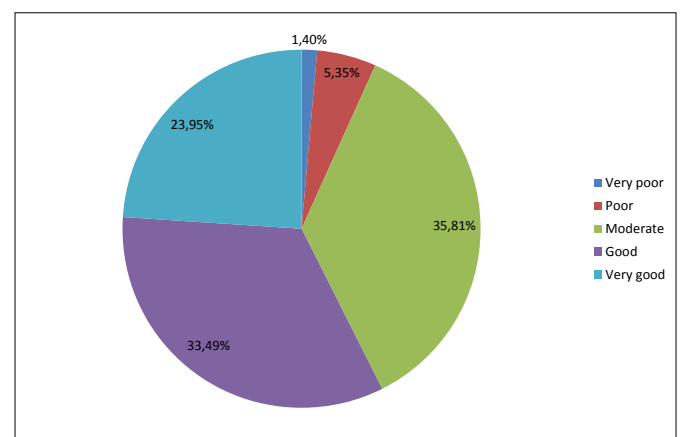


FIGURE 5. Assessment of respondents' knowledge about contraception.

DISCUSSION

An important aspect of human health and well-being is their sexuality [8]. The study results are compared with the research of Krzysztof Wąż and Angelika Hejmej. In our own study, the vast majority of respondents identified as heterosexual, while almost one-sixth of them identified as bisexual. In contrast, in the compared studies, nearly 90% of respondents defined their orientation as heterosexual, 8% as homosexual, and 2% as bisexual [9]. A similar percentage of respondents in our study

identify as nominal Christians or non-religious individuals. In the studies of Krzysztof Wąż and Angelika Hejmej, the group of women surveyed was more diverse in terms of their attitude towards the Roman Catholic religion [9]. Among the surveyed individuals, between 20% [8] and over 50% [9] were deeply religious and regularly practicing. Approximately 40% [8] were believers but practiced irregularly. In contrast, 30.0% of non-believers or believers who did not practice were reported in Krzysztof Wąż's study [10], or 7.7% in Angelika Hejmej's study [9].

Sexual initiation is a significant event in a person's life. Correlations between the place of residence and the age of initiating sexual activity can be observed – residents of larger cities engage in sexual activity more frequently and at a younger age than women in rural areas. In a study conducted by Magdalena Nieckula and others [11] among students aged between 16 and 18 years old, 65.55% of girls had not yet engaged in sexual intercourse. According to M. Babik's study [12], in Poland, since the interwar period, the number of people initiating sexual life before reaching legal adulthood has been increasing. It is noticeable that the age of sexual initiation for women has decreased compared to previous years. Many studies show that nowadays women experience sexual initiation earlier than men, which is a result of socio-cultural changes that impact women's sexual behaviors more than men's [12].

Sexual customs are rooted in our culture. Satisfaction with sexual life is an indicator of sexual health. Factors influencing sexual satisfaction in adults may be different for young people who are just starting sexual activity and for older individuals who have already had their first sexual experiences [13]. Sexual activity is very important and also has significant implications for women's health [14]. In our study, over half of the respondents claim to be sexually active, with over a third of them engaging in sexual intercourse several times a month, and another third multiple times a week. This indicates that the majority of surveyed women regularly engage in sexual activity.

In every woman's life, the character of a relationship, its stability, overall satisfaction with marital and family life, diversification of lovemaking, and partner's adoring behaviors are important [15]. Our obtained data indicates that the majority of respondents had 1 to 3 sexual partners (58.4%), while in Anna Kremaska's study, which included women in early and middle adulthood, over half of the women had only one sexual partner (61.0%) [15]. From our own study, it emerges that with age and education, the percentage of respondents having a greater number of sexual partners increases. There is also a correlation between the number of sexual partners and the approach to religiosity.

Contraception, with its roots in antiquity, evolved in the 19th century as a social movement advocating natural family planning. A modern approach to contraception enables conscious decision-making about offspring, effectively reducing instances of unplanned births and positively impacting the quality of sexual intercourse. Although there are various methods of preventing pregnancy, hormonal contraception is gaining increasing popularity among women today [16]. In our conducted studies, over 80% of surveyed women declared that in the past, they most commonly used barrier methods, with almost every third woman using combined oral contraceptives, while nearly every 20 did not use any contraception method despite engaging in sexual activity. A significant con-

venience of modern times is the ability to choose the most suitable method, considering individual needs and preferences, and changing it throughout the entire reproductive period as needed [17]. Our study showed that the most commonly used contraceptive method was the barrier method (38.8%). A nearly identical result was obtained in a 2013 study, where condoms accounted for almost 40%. The second most commonly used method is combined oral contraceptives (19.6%), while in Krzysztof Wąż's study, 33.94% of surveyed women admitted to using this method. The combination of barrier and hormonal methods was reported by 11.2% of respondents. Over 8.8% of respondents did not use contraception, almost identical to the study conducted by Krzysztof Wąż, which reported 8.18%. Modern hormonal contraception methods, such as the contraceptive patch, implant, or vaginal ring, are used by a minimal percentage (1-3%), which is related to the limited knowledge of young women about these contraceptive methods [18].

Casual sexual encounters are considered risky sexual behaviors, and this topic is poorly researched in Poland, likely due to its controversial nature within the local cultural context [19]. The majority of surveyed women do not engage in casual sexual encounters, and among those who declare having such encounters, almost a third do not always use contraception during them. The study also demonstrated correlations between the number of sexual partners and engaging in casual encounters – as the number of sexual partners increases, the percentage of women engaging in casual encounters also rises. Similar results were obtained in a study by Aleksandra Boli-brzuch, which showed that casual sexual encounters are common episodes in the lives of both women and men, often occurring without the use of condoms [20]. In Agnieszka Fijoł's study, engaging in sexual activity with a casual partner using a condom was an experience for over half of the participants, while more than a third of respondents engaged in unprotected intercourse [21].

Sexual abstinence during the fertile period is a significant element of natural contraceptive methods. The Pearl Index for these methods ranges from 0.6 to 25. According to the recommendations of the Expert Panel of the Polish Gynecological Society, natural family planning methods are recommended for women who, for ideological reasons, do not accept other forms of contraception, have contraindications, or show reluctance to other pregnancy prevention methods. Moreover, they are recommended for women who would accept a pregnancy if it occurs [22]. In studies by other authors, it has also been shown that natural methods are increasingly less commonly used – approximately 2 to 3 out of ten respondents (17% to 28%) use natural contraceptive methods. Rutkowska et al. demonstrated that views on contraception and the decision to use a specific method are influenced by the level of religiosity. Women for whom faith is important, tend to hold views consistent with the position of the Catholic Church. Furthermore, the studies by the mentioned authors indicate that women declaring Roman Catholic faith less frequently use contraceptive methods not accepted by the Church, such as hormonal contraception [22].

Regardless of age, a visit to the gynecologist is not easy for a significant majority of women. Often, even young women do not know the most appropriate time to schedule their first appointment, as they evoke feelings of shame and anxiety in women [23]. Our study indicates that over half of the surveyed women regularly visit the gynecologist, and it is rare for them to have not visited a gynecologist after initiating sexual

activity. Among the surveyed women, an increase in the frequency of gynecological visits can be observed with age. There is also a correlation between women in relationships, who more often attend appointments than in single women. Similar results were obtained in Ewa Fiega's study [24], from which, as in our study, it follows that the most numerous group among the respondents was women who regularly attend gynecological appointments. This suggests that the majority of women are aware of the role of this doctor in their lives.

Infection with the HPV virus is one of the most common sexually transmitted infections worldwide. It is estimated that sexually active women and men will be infected with this virus at least once in their lifetime [25]. Many cancers worldwide are caused by the HPV virus. The most commonly associated cancer with this infection is cervical cancer. Although it could be completely curable nowadays, it remains the fourth most common cancer in women globally. Therefore, prevention of its development and other cancers caused by the HPV virus is very important. Vaccination against HPV is considered the most important method of prevention [26]. Despite the significance of this vaccination, in Poland, systematic refund of this vaccination for specific age groups was only introduced last year. Worldwide, as of June 2020, 55 countries included this vaccination in their national programs [27]. According to the WHO recommendations, when implementing an HPV vaccination program, efforts should be made to achieve the highest possible coverage in target groups, as the recommended level of coverage is $\geq 90\%$, and $>80\%$ of vaccinated girls provide indirect protection in the population of unvaccinated boys [28]. In a study conducted by Tanja Y. Walker et al. (CDC) from the 2016 National Immunization Survey–Teen (NIS-Teen), it was found that 60% of 13-17-year-olds received 1 dose of the vaccine (of which 65% were female and 56% were male), and only 37% of those surveyed received 3 doses. These results were significantly below the target set by Healthy People 2020, which aimed for an 80% vaccination rate among 13-15-year-olds [29]. Scientists from Oklahoma City, in a study conducted among American Indian adolescents, achieved slightly higher results than us in our study – over 70% of surveyed 13-17-year-olds received 1 dose of the vaccine. Additionally, it was shown that a higher rate of vaccine initiation was among those whose parents had knowledge and information from their doctor about HPV [30]. The above data indicate a significant room for improvement in raising awareness among societies worldwide about the HPV virus, vaccination against it, and increasing vaccination rates in the population, as HPV vaccinations are closely related to the frequency of vaccine-type HPV occurrence and have a significant impact on reducing the prevalence of oncogenic HPV genotypes. Good state policy can effectively reduce society's fear of this vaccination, so it should be one of the priorities of governments worldwide [31].

In the modern world, accessing information is not a significant issue for most individuals. They have a wide range of options, ranging from professional scientific literature to television and radio programs, and ending with the Internet. However, the important and more difficult aspect to achieve is the ability to critically evaluate the information obtained and subject it to verification. Despite globalization, changes in social norms and the existence of increasingly better sources of knowledge about contraception, there are still environments where access to sexual education is limited. This may stem from the persisting, difficult-to-overcome taboo top-

ics among societies, as evidenced by the results described in a study conducted by Margarate Nzala Munakampe et al. – they indicate limited access to education due to resistance in discussing reproductive health and sexuality, leading to consequences of dangerous behaviors among young people, such as using battery acid and crushed bottles for abortion [32]. This underscores the necessity of improving educational efforts, delivering content in an accessible and understandable manner, considering a change in approach to information dissemination, expanding the audience, and involving additional authorities. In our study, the main sources of information for respondents were the Internet, followed by gynecologists, and thirdly, professional literature – similar results were obtained in several other studies. In “Knowledge and Patterns of Use of Emergency Oral Contraception among Portuguese Female Users of Healthcare Services”, “media” were identified as the main sources of information, including the Internet (63.4%), family and friends (43.1%), and healthcare professionals (41.2%) [33]. In a study conducted by Okud A. et al., respondents identified doctors as the main source of information, followed by social media and the Internet, and family members. Newspapers were the least chosen source of information [34]. Alkalash SH. et al. showed that among their respondents, the most common sources of information on contraceptive methods were: friends and family, healthcare workers, and the Internet and social media. Interestingly, the authors of this study point out a possible reason for such responses, stemming from cultural conditioning in Saudi Arabia, which affects the poor availability of sexual education in schools, and highlight the significant role of healthcare workers in disseminating knowledge about contraception and family planning among women. Additionally, they emphasize the need for active action aimed at educating about sexual health by experts associated with the Muslim religion due to their still strong authority among Saudi society [35]. Poland is also a country where the strong influence of religion on the lives of its citizens is noticed, and sexual education is no exception. It is a topic still stirring up a lot of emotions in our country, additionally often used as an element of political and ideological skirmishes. An example of this are regulations from the Ministry of Education regarding the goals, topics, and outcomes of sexual education in Poland, which are largely based on the values of the Catholic faith. This means that sexual education in Poland, not only being at a low level, largely does not present evidence-based scientific knowledge, but also leaves educators with no choice but to follow a single narrative – focusing on promoting family values, heteronormative model of relationships, and perpetuating stereotypes. In practice, this often means that education is based on the “abstinence only” principle [36]. Different results were obtained in a study conducted among medical students, who identified a gynecology course taken during their studies as the main source of information on contraception, followed by the internet and family [37]. The reasons for this can be attributed to the hermetic nature of the study group, focusing on individuals from the medical field, while in our study, a more polarized group of respondents participated, which influenced different sources of information acquisition.

From numerous studies examining the general level of knowledge about contraception conducted worldwide [38-41], as well as in Poland [2,42], it emerges that the awareness of teenagers and young women in this aspect is low and unsatisfactory. Few studies presented different results; one of them

was a Spanish study conducted by Sanz-Martos S, et al., in which the knowledge of 93.1% of participants was assessed as high [43], yielding similar results to those obtained in our study, where more than 2/3 of women aged 15-25 demonstrated overall knowledge at a good or very good level. However, it should be noted that this variability of results may be due to variations in the standards selected to measure the level of knowledge. It is worth mentioning that women's subjective feelings about their good knowledge of contraception and reproductive health were confirmed in objective tests, both in our study and in the studies by Sanz-Martos S, et al. [43] and Vieth SJ et al. [44]. In the study by WSK Kara et al., the authors demonstrated a significant correlation between the level of respondents' knowledge and their age and relationship status. Older women (over 25 years old) had greater knowledge than younger ones, similar results to those obtained in our study. In our own study, women in relationships were characterized by greater knowledge, while in the indicated study, single women were characterized by greater knowledge. The study authors indicate that the described dependencies may be due to an educational campaign conducted in the country [45].

However, when analyzing more detailed aspects of contraception, such as knowledge of different contraceptive methods, their effectiveness, additional actions and sexual behaviors that may lead to unplanned pregnancy, the level of participants' knowledge becomes more varied. Comparing the results of our study with other studies on similar topics, certain similarities can be pointed out: women aged 15-25 do not have problems indicating the correct definition of contraception [40], among all contraceptive methods, they are most familiar with condoms, as an example of a barrier method, and oral contraceptive pills [39,40,46], of natural contraceptive methods, they are familiar with the calendar method [40]. Women are aware that condoms are used not only as protection against unplanned pregnancy, but also as a method to reduce the risk of sexually transmitted diseases [40].

Teenagers and young women participating in our study demonstrated better knowledge regarding the possible negative consequences of certain sexual behaviors. Compared to participants in the study conducted by Serván-Mori E. et al. [47], our respondents were better informed about the fact that first sexual activity or sex during menstrual bleeding without using a contraceptive method can result in unplanned pregnancy. They also showed better knowledge about withdrawal as a method that does not constitute effective protection against possible fertilization and greater awareness that oral contraceptive pills do not protect against sexually transmitted diseases (92.8%) compared to the study by Ashley Sons et al. (about 1/3) [46].

Despite satisfactory general knowledge about contraception, there are certain informational gaps regarding some issues. One of them is the effectiveness of different contraceptive methods. This parameter can be evaluated in several ways, one of which is the Pearl index. It is defined as the number of contraceptive failures per 100 women-years of exposure. The lower the Pearl index, the stronger contraceptive effect and the more effective method [48]. Among the respondents of our study, only about half of the women correctly answered the question about this issue. Insufficient knowledge in this aspect seems to imply further difficulties associated with identifying the most effective contraceptive methods currently available on the market. Among different methods of birth control,

LARC (Long-acting reversible contraception), which includes hormonal intrauterine devices, copper intrauterine devices and subdermal implants, prove to be more effective than other methods [49]. In our questionnaire, when asked about the most effective contraceptive method, the only representative of LARC among possible answers was the hormonal intrauterine device. Less than half of the respondents of our study indicated this answer as correct, while close to one-fourth of them incorrectly chose the combined oral contraceptive pill, yielding results comparable to the study conducted by Tina Hylton-Kong et al., where only 30.2% of participants chose the intrauterine device as more effective than other contraceptive methods [50]. Young women in our study also have noticeable educational gaps related to surgical sterilization and its legal aspects, comparable to the results of the study by Abdulrahman M. et al. [40]. An important issue related to contraception, especially hormonal contraception, is its role in the etiopathogenesis of the development of certain cancers. It has been proven that hormonal methods are a protective factor in the development of, among others, ovarian cancer or endometrial cancer, while on the other hand, they increase the risk of developing breast cancer or cervical cancer [51]. Numerous studies (including ours) show that knowledge on this topic is insufficient among women [41].

CONCLUSIONS

1. The age of sexual initiation among women in Poland is gradually decreasing.
2. The most popular methods of contraception among young Polish women are barrier methods and combined oral contraceptive pills.
3. Young Polish women least frequently use long-acting reversible contraceptives (LARCs), such as hormonal intrauterine devices and implants, which is associated with a lack of knowledge about these contraceptive methods. Therefore, there is a need to increase public awareness about LARCs.
4. A common phenomenon among young, sexually active, and contraceptive-using women is the fear of pregnancy and, less commonly, the reliance on fertile days to determine sexual activity. This phenomenon is more pronounced among women living in rural areas, using barrier methods, and practicing religion. This highlights the necessity of increasing education on the effectiveness of different contraceptive methods and their proper use.
5. Vaccination against HPV and knowledge about HPV vaccination in Poland remain low. It is necessary to increase public awareness about the importance of HPV vaccination in preventing cancer.
6. The knowledge of young Polish women about the effectiveness of various forms of contraception is average, but overall knowledge about contraception is fairly good.
7. Women from urban areas, with higher education, and older women (within the studied group) demonstrate greater knowledge about contraception and use it more consciously. This indicates the need to pay particular attention to educating the unmentioned groups to reduce health inequalities.
8. Older women (within the studied group), those in relationships, better educated, and sexually active ones mainly acquire knowledge from gynecologists, while women before sexual initiation mainly rely on the internet. It is important to educate young individuals on obtaining information from credible and reliable sources to avoid errors in contraceptive use.

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