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The knowledge of young women about breast cancer

Abstract

Introduction. Breast cancer is the most common malignant neoplasm among women in Poland. Many factors, both non-modifiable and modifiable, are involved in the development of this cancer, so it is important that women know the risk factors and the principles of cancer prevention. Numerous studies show that the knowledge of women in this area is small.

Aim. Determining the state of knowledge about breast cancer of young women in Poland, comparing the analysis of social awareness on this subject with previous research, and identifying the most important preventive measures in this area.

Material and methods. An anonymous questionnaire survey was conducted in electronic form among women aged 16-25 from all over Poland. The study was carried out using a proprietary questionnaire (Google form) completed online. The questionnaire contained closed questions verifying the knowledge of the topic under study and a certificate. The following computer programs were used for statistical analysis of data: Statistica and Microsoft Excel.

Results. Less than a third of women knows the typical age at which breast cancer develops and is aware of the relationship between the use of oral hormonal contraceptives and the development of this cancer. Few of the respondents are able to correctly identify the risk factors for breast cancer, practically every tenth respondent knows the principles of breast cancer prevention, and nearly one third of them correctly indicated its symptoms.

Conclusions. There are gaps in the knowledge of young women about breast cancer that need to be filled. Education in the field of breast self-examination and risk factors for breast cancer development is a priority, which in the future may contribute to increasing the detection of breast changes and reducing the number of breast cancer cases.

Keywords: neoplasm, breast cancer, prevention, health education.

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INTRODUCTION

In 2018 breast cancer constituted almost a quarter of all malignancies among women in Poland, being, at the same time, the most common cancer in women. The number of cases has been showing an upward trend in the recent years with a slight decrease in 2017. This neoplasm ranks second in the incidence of female deaths from malignant neoplasms, every seventh woman suffering from cancer dies as a result of it. The number of deaths caused by this type of cancer over the last years has been constantly growing [1].

In the development of breast cancer both non-modifiable factors: BRCA1/2 gene mutation, sex, age, and modifiable ones, among others: oral hormonal contraceptives, excessive body weight, excessive alcohol consumption, are significant. The majority of breast cancer incidence concerns women after 50 years old – therefore, preventive actions taken by women from the beginning of entering into adulthood are, undoubtedly, essential. Numerous studies conducted in the past showed that women have knowledge concerning some breast cancer symptoms and risk factors, however this knowledge is incomplete and it does not very often translate into the preventive measures taken [2-4]. According to the conducted research, main women's source of knowledge concerning breast cancer are media, not medical staff [2,3]. On the basis of the available literature, it may be concluded that about half of women regularly performs breasts self-examination [3]. Almost half of females does not do it correctly [4]. A lot of women lack knowledge about preventive examinations when it comes to both, methods appropriate for particular age groups, and frequency of performing [2-4]. Prognosis in the case of breast cancer diagnosis depends, among others, on the stage of the tumor when it is detected. Therefore, it is important that women have sufficient knowledge concerning this type of cancer and that they have cancer detected at the initial stage, as it is the most common neoplasm among females in developed countries and it is a vital clinical, economic and social problem.

AIM

Determining the state of knowledge about breast cancer of young women in Poland, comparing the analysis of social awareness on this subject with previous research, and identifying the most important preventive measures in this area.

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MATERIAL AND METHODS

An anonymous questionnaire survey was conducted in electronic form among women aged 16-25 from all over Poland. The most numerous age group was 18-20 years. The biggest number of respondents lives in the voivodeships: Lublin, Masovian and Lesser Poland. Over half of respondents has secondary education, while similar number has higher or basic education, few persons has vocational education. The most numerous groups among the respondents were students and high school students. Nearly half of the surveyed declares to be in an informal relationship, similar number is not in any relationship. The study was conducted using a proprietary questionnaire (Google form) completed online. The questionnaire contained closed questions verifying the knowledge of breast cancer (epidemiology, risk factors, symptoms prophylaxis) and a certificate (age, voivodeship, the size of the place of residence, education level, profession and relationship status). The following computer programs were used for statistical analysis of data: Microsoft Excel and Statistica. Figures 1-6 show information about respondents.

RESULTS

Over half of women taking part in the study thinks that breast cancer most often occurs at the age of 31-45 years. Almost one third claims that a typical age of onset of this type of cancer is over 45 years. Pearson's chi-squared test showed relationship (p=0.007) between education level and answer to this question. Mostly persons with higher education answered this question correctly.

Figure 1. shows opinions of the respondents concerning morbidity and deaths from breast cancer in Poland. The majority of the surveyed women claims that both morbidity and deaths from breast cancer are serious health problem of the country. Relatively big number of examined women considers deaths from breast cancer only as some problems. Few among the respondents believe that this malignancy does not constitute a serious problem in Poland. Cases of breast cancer in Poland were defined as a serious health problem mostly by persons with higher education, Pearson's chi-squared test proved this dependency (p=0.03), Cramer's V test showed that this relationship is weak.

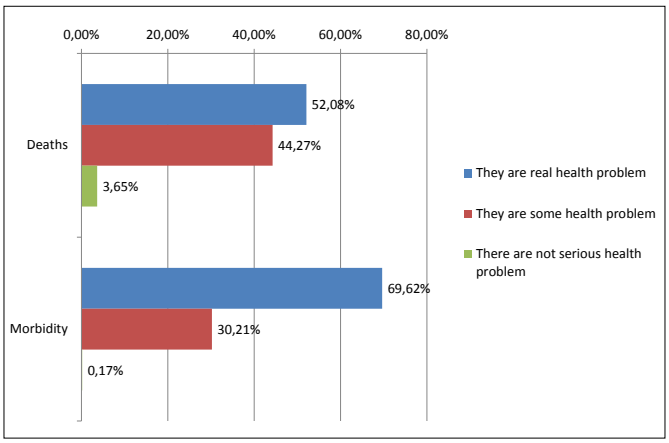

FIGURE 1. Morbidity/deaths from breast cancer in Poland.

Approximately 43% of respondents thinks that women in Poland die from cancer more often than women from other European countries. Similar number of respondents cannot adopt a position on the matter, while only 13.54% of persons believes that Polish women do not die due to breast cancer more often than women from other European countries.

Figure 2. shows respondents' answers for the questions concerning risk factors of breast cancer. Practically all the respondents consider genetic factors as risk factors. Particularly frequently, cigarettes and age were indicated. A bit less often having many children, lack of children and breastfeeding were mentioned. Women being in the relationship, slightly more frequently than those not being in relationship, included oral hormonal contraception as a breast cancer risk factor, Pearson's chi-squared test proved this dependency (p=0.001), Cramer's V test showed that this relationship is weak.

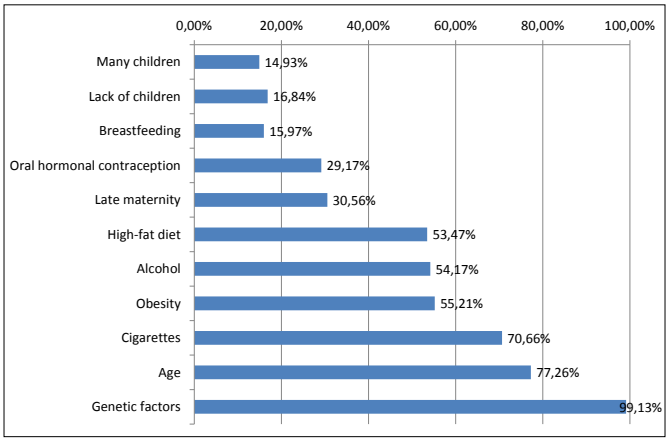

FIGURE 2. Breast cancer risk factors.

Figure 3. shows number of correct answers concerning breast cancer risk factors given by the respondents. Few of the examined women were able to correctly name all the risk factors. The majority of respondents gave only half of correct answers.

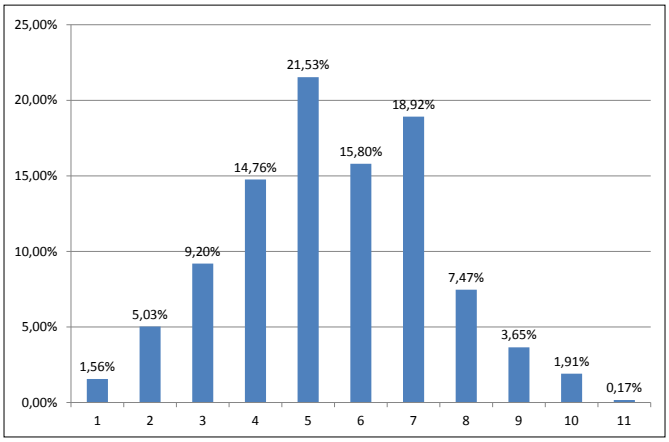

FIGURE 3. Number of correct answers to the questions about breast cancer risk factors.

The vast majority of respondents thinks that the occurrence of cancer in one breast does not exclude the possibility of its occurrence in the other one (98.75%). Only 1.22% of young women believes that the occurrence of cancer in one breast excludes the possibility of its occurrence in the other one, while 5.03% did not take a position on the matter.

Figure 4. shows number of correct answers concerning breast cancer symptoms given by the respondents. Practically all the examined women indicate presence of a lump in the breast as a symptom, the majority of them also listed: change in the appearance of the breasts, breast pain and discharge from the nipple. Significantly less frequently retraction of the nipple or wrinkled skin on the breast were mentioned.

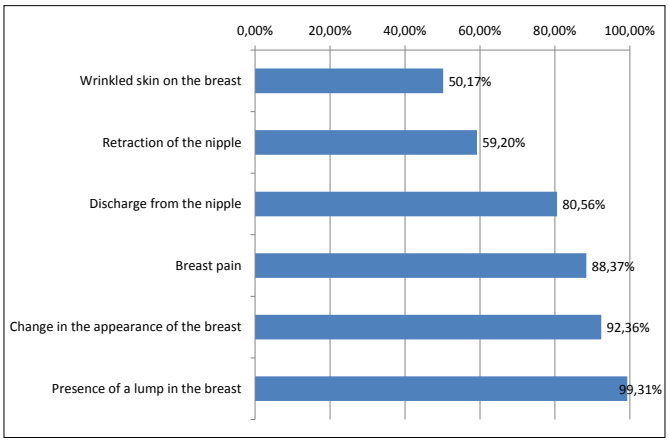

FIGURE 4. Symptoms of breast cancer.

Figure 5. shows the number of correct answers concerning symptoms of breast cancer given by the respondents. The majority of them answered all the questions correctly. Few of the women gave very small number of correct answers. The Mann-Whitney U test proved relationship (p=0.0028) between the respondents' education level and the number of correct answers given in this category. More correct answers were given by women with secondary and higher education.

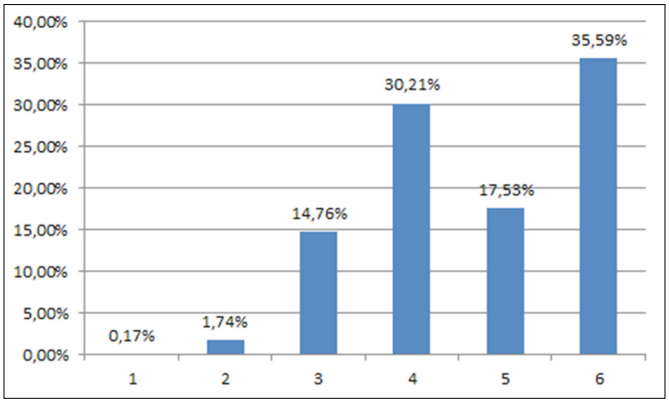

FIGURE 5. Number of correct answers to the questions concerning breast cancer.

Figure 6. shows number of correct answers concerning breast cancer prevention given by the respondents. Practically all the surveyed women indicated: breast self-examination, mammography and breast ultrasound. Slightly less frequently, regular gynecological appointments were listed. Few respondents chose oral hormonal contraception or breastfeeding.

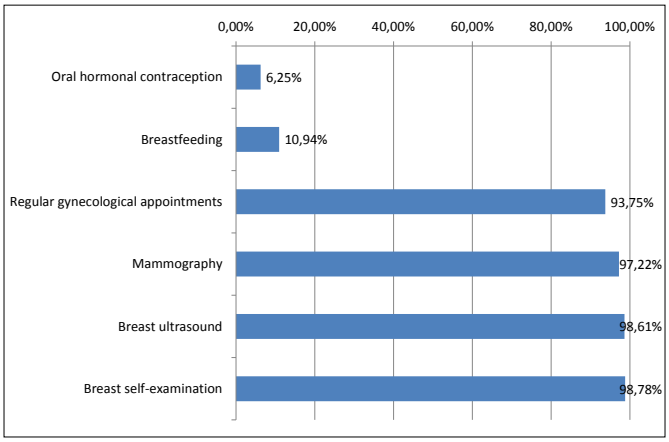

FIGURE 6. Breast cancer prevention.

Figure 7. shows number of correct answers concerning breast cancer prevention given by the respondents. The vast majority of them gave only one incorrect answer. Small number of the respondents gave few correct answers.

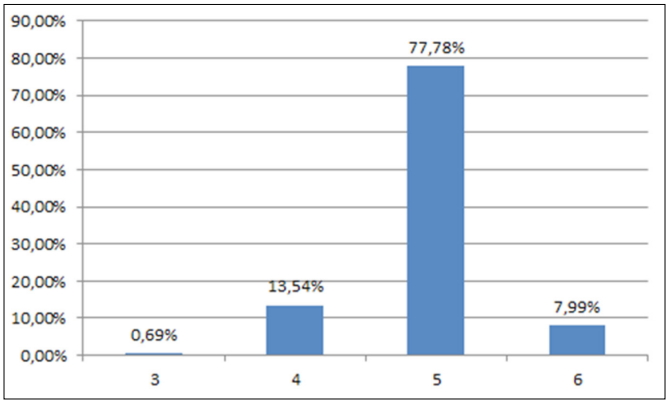

FIGURE 7. Number of correct answers to the question about breast cancer prevention.

Figure 8. shows answers concerning frequency of breasts self-examination given by the studied women. The majority of them examines their breasts once a month, while slightly less does it once a year.

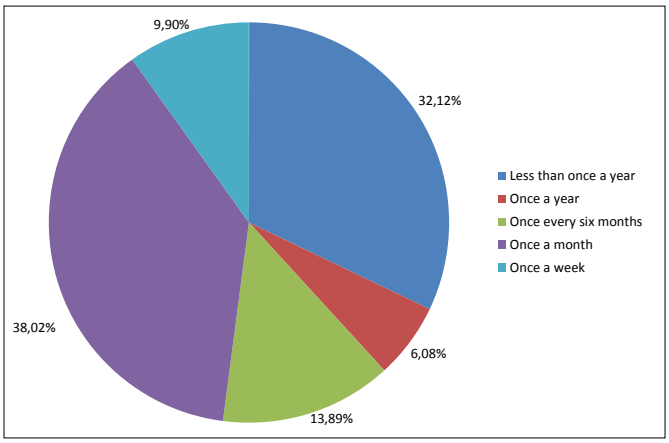

FIGURE 8. How often do you perform breasts self-examination?

About a quarter of respondents thinks that they self-examine breasts well. Similar number of women do not examine them at all (24.85%). Almost half of persons taking part in the study has doubts concerning correctness of their breast examination technique (46.18%).

The majority of respondents (66.32%) believes that a breast cancer prevention program functions in Poland. Slightly over 6% of the women excludes existence of such program, while 27.26% of young women did not take a position on the matter.

The majority of respondents (about 70%) claims that breast ultrasound should be performed from the age of 20 years. Nearly every fifth person states that this examination should be made from the age of 30 years. About 10% of women chose the answer concerning later stage of life.

Almost half of women taking part in the study believes that breast ultrasound should be performed once a year. Slightly over a third of women claims that it should be made twice as often. Approximately 12% of respondents thinks that, according to recommendations, breast scanning ought to be made once every 2 years, and only 2.26% claims that it should be performed once a month.

Almost 30% of the studied women believes that mammography should be performed from the age of 20 years. Similar number claims that it should be made from the age of 30 years (29.69%). Nearly a quarter of respondents claims that this examination needs to be performed from the age of 40 years. None of the women chose the answer "from the age of 50". Pearson's chi-squared test showed relationship (p=0.006) between education level and answer to this question, Cramer's V test showed that this relationship is weak. Persons with higher education answered this question correctly.

Over half of respondents thinks that mammography should be performed once a year. The answer "once every six months" was chosen by 24.31% of the studied women, while "once every two years" – by 21.7%. Practically all the respondents excluded necessity of performing this examination once a month.

Figure 9. shows sources of knowledge concerning breast cancer. The women taking part in the research most often indicated the internet, next – information brochures or gynaecologist, the least frequently – information heard on the radio.

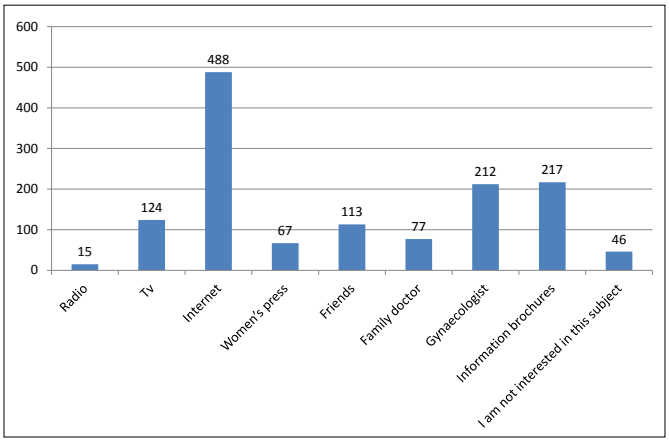

FIGURE 9. Sources of knowledge concerning breast cancer.

Figure 10. shows subjective assessment of respondents' knowledge concerning discussed issues. In each category, the majority of respondents determines their knowledge as average. In the case of a knowledge assessment of prevention and symptoms, a similar number of subjects determines their knowledge as good or poor. Few respondents evaluate their knowledge as very good. Pearson's chi-squared test excluded relationship between the size of the place of residence, relationship status and education level, and the subjective assessment of respondents' knowledge.

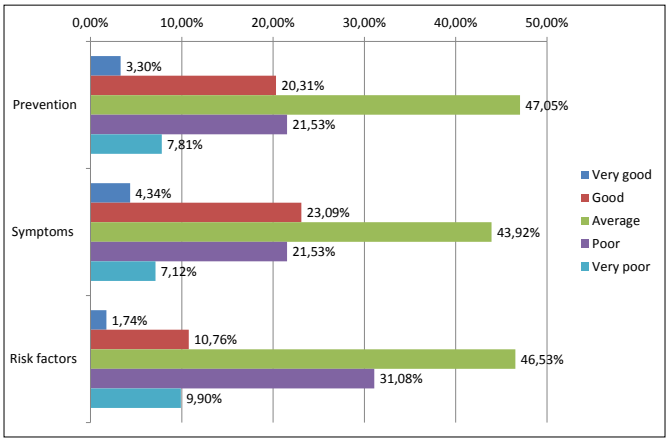

FIGURE 10. Subjective knowledge assessment.

DISCUSSION

Breast cancer rarely occurs in women before 45. year of age, and the majority, as much as 80%, concerns women after 50. year of age [1]. The own study proved that the vast majority of respondents believes that breast cancer incidence most frequently refers to women aged 31-45 – a similar question was asked in one of the surveys prepared by an Independent Epidemiology Unit of the Medical University of Lublin, then the students most often indicated the suggested range of age 31-49, which corresponds to the results obtained in own study [5].

According to the WHO, breast cancer was the most common cancer in the world in 2020: at that time, over 2 million of new cases were diagnosed, and 685 000 persons died as its result [6]. In 2020 in Poland almost 100 000 new cases were found and there were over 50 000 deaths caused by this type of cancer – it means that it was the most frequently diagnosed cancer in women and the second – taking into account mortality, just behind lung cancer [7]. It demonstrates an existing big health problem, both in Poland and in the world, of which not all respondents are aware of. Similar results were obtained in other studies conducted among women who had problem with indicating number of deaths caused by this malignancy in Poland [5].

Mortality caused by breast cancer in Polish women, compared to Europe, has changed over the years, however in 2020 it was very high and according to the ECIS, only in Slovakia and Cyprus there were more deaths due to this cancer [7]. It means that, statistically, women in Poland more often die from breast cancer than women from other European countries.

Risk factors of this malignancy development can be divided into non-modifiable and modifiable ones. Non-modifiable ones are genetic factors and age (>45 years old), while a significant number of breast cancer risk factors are modifiable ones: alcohol, smoking cigarettes, high-fat diet, obesity, lack of children, late maternity, and oral hormonal contraception. In turn, breastfeeding and having many children decrease the risk of breast cancer development [1,6,8]. Women taking part in the own study most often as risk factors considered genetic factors (99.13%), age (77.26%) and cigarettes (70.66%) (Figure 2). Genetic factors and age were the most frequently chosen in other studies conducted by, among others, persons from an Independent Epidemiology Unit of the Medical University of Lublin [5]. The latest data published by the WHO show that smoking cigarettes, and tobacco smoke in particular,

is also a breast cancer risk factor [6]. Until recently, there had not been any research confirming relationship between smoking and breast cancer, however some information had appeared about decreased risk of this malignancy development during smoking [1,2]. Despite recent consideration of tobacco smoking as a factor increasing breast cancer development, female respondents in the previous years often indicated cigarettes as a risk factor of this neoplasm development [4,5]. Also, in the studies from 2018 conducted by Malicka et al., suggesting negative impact of cigarettes on breast cancer, the vast majority of female students of various Polish universities indicated smoking as risky [9]. Alcohol was indicated by 54% of respondents, similar number chose obesity as a risk factor (55.21%)(Figure 2). These results are satisfactory when compared to older studies, when alcohol and excessive body mass were omitted as risk factors by study participants [5,10]. Only slightly over half of respondents in the own study is sure that high-fat diet contributes to breast cancer development, however, when comparing this result to other researchers' findings [4,10], it can be concluded that women's awareness concerning effects of improper diet has been growing. The state of knowledge of young women in relation to the use of oral hormonal contraceptives is worse (Figure 2). The worst results were found out in the study by Kalinowski et al. [5], while participants of the study by Ślusarska et al. showed greater knowledge of this issue [4]. It was proved that women taking oral hormonal contraception or using estrogen replacement therapy, may observe magnification and tenderness of their breasts, which, combined with other risk factors, might lead to breast cancer [8].

Lack of knowledge concerning late maternity and lack of children as breast cancer risk factors is frequently encountered on the occasion of similar research [3,14], however numerous sources of knowledge confirm influence of reproductive factors on breast cancer development [1,8]. Nulliparous or women who had their first term pregnancy after 30 years of age have a greater risk of developing the disease than women who gave birth before the age of 20 [1].

Prolonged breastfeeding is a factor that reduces the risk of breast cancer, which means that having many children is also a factor that partially protects against the development of breast cancer [6,8].

Out of 11 suggested in the survey risk factors, only 0.17% of respondents correctly indicated all those important ones in breast cancer development, excluding incorrect ones (Figure 3). The research conducted in the past shows that risk factors for the development of breast cancer were also a problematic issue for the respondents, mainly in terms of non-modifiable factors [3-5].

A history of breast cancer more than three times increases the risk of developing cancer of the other breast [1]. It means that cancer of one breast does not exclude development of cancer of the other one. High awareness concerning this matter was also confirmed in the study among students from 2012, whose participants in over 80% correctly assessed the possibility of cancer incidence in the other, healthy breast [2].

Respondents are familiar with most of the disease symptoms, although almost half of them does not know that wrinkled skin on the breast and retraction of the nipple also indicate breast cancer (Figure 4). When compared with the study from 2014, the women's knowledge in the own study is higher [4].

Women taking part in the research know most of the prevention methods. However, as many as 89% of them is not aware that breastfeeding may reduce breast cancer risk (Figure 6). When compared to the study from 2012, an increase in awareness concerning breast cancer is observed [10].

Among the study participants, almost half performs breast self-examination once a month or more often. It is worrying that as many as 32% of women from the study makes this examination less that once a year or not at all (Figure 8). When compared to the study from 2018, we observe an increase in the percentage of women carrying out breast self-examination and an increase in the regularity of self-examination [9].

Among the respondents, almost a quarter thinks that performs breast self-examination correctly. Over half of women taking part in the study is not able to say whether they do it properly, while 25% does not do it at all. In the study conducted in 2011 among students, similar results were obtained [2].

The majority of study participants (66%) knows about existence of preventive program in Poland, however a third part is not aware of that. It is potentially caused by its not enough promotion or lack of interest in the program by women aged 16-25 years, what is confirmed in the study from 2018, in which over 90% of respondents did not take part in breast cancer prevention programs [9]. In addition, in the scientific work from 2014, a similar percentage of respondents to the own study knows which age group the breast cancer prevention program is addressed to [4].

The majority of respondents (69%) rightly believes that breast ultrasound should be performed from the 20. year of age. In the study conducted in 2014, similar results were obtained [4].

The majority of respondents thinks that that breast ultrasound should be carried out once a year or more. Only 12% claims that this examination should be made once every two years, which is the upper limit of ultrasound frequency. In spite of women's awareness regarding performing breast ultrasound frequency, the study from 2015 showed that the majority of women has breast scanning done on average every two years [11].

According to recommendations, mammography should be preventively made from the age of 40 and such answer was given by almost a quarter of respondents [9]. When it comes to 14%, they indicated age after 50 years. As many as 60% of study participants gives too early age of performing first mammography. It is essential because we should not perform this screening before 35 years of age in people out of the the risk group, as it has not been shown that the benefits of this method outweigh the risks in this age group [12].

Among the respondents, the most frequent source of knowledge regarding breast cancer is the internet. Over half less often, they obtain information from a gynaecologist and from information brochures. More than 100 women indicated friends and TV as sources of knowledge, less persons chose women's press and a family doctor, this may indicate insufficient attention paid to prophylaxis during visits to health centres. The majority of study participants is interested in the subject matter of breast cancer, which is a positive result, proving growing awareness of women regarding breast cancer (Figure 9). A study conducted among 221 women in 2011 showed that, invariably for 10 years, the main source of knowledge about breast cancer has been the internet. The second place took TV,

which in the own study was not chosen as often as gynaecologist or information brochures [9].

In all the categories almost half of respondents assesses the level of own knowledge as average. In fact, in the own study, the surveyed women showed good knowledge in the field of prophylaxis, as well as satisfactory in terms of the symptoms of breast cancer. In majority, they correctly evaluated their knowledge concerning risk factors as average or poor (Figure 10). In the study conducted in 2011, similarly to own study, almost half of respondents coonsidered their knowledge as average [13].

CONCLUSIONS

1. Young women are still not aware of some breast cancer risk factors, such as late maternity, or lack of children. It is important to pay attention to this problem and implement educational programs.
2. Comparing the results to those obtained in previous years, women show greater knowledge about the impact of an improper diet on cancer.
3. A large percentage of women does not perform breast self-examination, and some of them do it with the wrong frequency. Women should be encouraged to conduct such preventive examinations frequently enough.
4. A small proportion of women consider their breast self-examination to be correct. Women should be educated about breast self-examination, for example in doctor's offices, as well as in schools and through mass media.
5. The vast majority of women know about the existence of a breast cancer prevention program in Poland, but it is still not a satisfactory result. More intensive promotion of the program is needed to make it noticeable to a larger audience.
6. A large proportion of young women do not have sufficient knowledge about the frequency and age to enter the prophylactic examinations related to the diagnosis of breast cancer.

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