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Breast cancer prevention behaviour of nurses and midwives - introduction to the discussion

Marianna Charzyńska-Gula [1], Grażyna Rożek [1], Piotr Szulich [2],Agnieszka Sojda [1],
Bogdan Tomczyk [3], Marta Zielińska [1]

Affiliation:

1 Faculty of Medical and Health Sciences, Prof. Stanisław Tarnowski State Vocational College in Tarnobrzeg

2. Faculty of Social Sciences and Humanities, Prof. Stanisław Tarnowski State Vocational College in Tarnobrzeg

3. Prof. Stanisław Tarnowski State Vocational College in Tarnobrzeg

Summary

Introduction Nurses and midwives are a large and therefore very important - for the population effect of many public health activities - group of health care professionals. Breast cancer prevention is one of them.

Aim of the study The aim of the study was to initiate a discussion on the decision-making processes related to the reporting of breast cancer screening by nurses and midwives. The discussion was prompted by the diagnosis of analogous behaviours in a selected group of nurses and midwives working in a selected hospital.

Material and methods A total of 118 nurses and midwives working in one of the Podkarpackie hospitals were studied. A diagnostic survey was used with an author's questionnaire prepared for this study with elements of a knowledge test. The study was conducted in January 2023.

Results In the group of nurses and midwives aged 50 years and older, 10% of nurses and 33.3% of midwives had never performed mammography. Breast ultrasound had never been performed by 25% of nurses and 23.8% of midwives. The reasons for this are varied and stem from both the family experience of the respondents and personal health concerns and beliefs. In the light of the review, it was shown that the participation of nurses and midwives in breast cancer prevention programmes requires a special approach in the design of such programmes and the attitude of nurses and midwives towards participation in oncology screenings demonstrates the need for special support for this group in their decisions.

Conclusions There is an urgent need to use different approaches and models in the preparation of modern decision aids for women recipients of oncology prevention programmes that take into account the trade-offs and preferences of women from both groups - medical women and their clients.

Keywords: nurses, midwives, undergoing a mammogram, decision aids , discussion

Introduction

OECD data shows that Poland records one of the worst results in the EU when it comes to women's mammography reporting. In 2019. 54% of women aged 50-69 declared that they had had a mammogram in the last two years. This is seventh from the bottom in the EU, well below the EU average (66 %). There are clear inequalities in breast cancer screening participation rates according to education level and income. Screening participation rates are more than twice as high among women with higher education (67 %) than among women with lower education (33 %) - this disparity related to education levels is the second highest in the EU. There are also inequalities according to income, but in this respect the gap is close to the EU average (around 15 per cent) [19]. This situation raises legitimate concerns that, in the coming years, the cancer will increasingly be diagnosed at a more advanced stage.

According to the National Cancer Registry (NCR), in 2020, 17,500 women in Poland will develop breast cancer and 7,500 will die from this cause. These figures are somewhat falsified by the pandemic, as 19,000 women will develop breast cancer in our country in 2019. In 2020, the proportion of breast cancer diagnoses in Poland decreased by 11 per cent. In Poland, only 41 per cent of patients are diagnosed with breast cancer at early stages (the EU average is 51 per cent). It can therefore be assumed that an increase in the incidence of breast cancer is likely in the coming years [11]. This supposition is confirmed by the results of a study by Anna Andrzejczak and co-authors conducted between January and May 2020 in three provinces. During the period of the pandemic restrictions (April-May 2020), the number of mammography examinations decreased by more than 90% compared to the same period in 2019. During the study period, no statistically significant relationship was observed between the decrease in screening and the number of recorded SARS-CoV-2 infections per province [2].

According to reports as at 1 November 2023. 36% of eligible women have received mammography, and there are even some municipalities where this percentage oscillates around 5%. For example, in the Podlaskie Voivodeship, 37.66% and 37.07% of women between 50 and 69 years of age in 2021 and 2022, respectively, registered for screening [32]. In order to achieve the population effect of these tests, i.e. a reduction in breast cancer mortality, we should exceed 70% [12].

Nurses and midwives play an important role as influencers in improving health in the community. Due to their accessibility, they are the main role models and health educators for the wider population. The nurse, like the midwife, accompanies and assists the individual in activities that relate to health. The fulfilment of the professional task of advising on health requires them not only to have the right knowledge and competence but also the right attitude that translates into desirable health behaviour. Nurses' and midwives' perceptions of health and health behaviours can influence professional attitudes and involvement also in breast cancer prevention practice. Demonstrating one's own health, forming habits, and realising health beliefs is a very effective way of influencing others.

The results of studies on the health behaviour of Polish nurses and midwives - also students of these faculties - clearly indicate that relatively good knowledge - although sometimes unfortunately low [1,15,28] - of the principles and practice of health activities is not associated with their positive health behaviour [29, 30]. Also, a high level of knowledge does not correlate with their health behaviour [24]. This finding applies to various lifestyle elements such as nutrition, use of stimulants, rest, physical activity and stress management

[18,21] as well as to cancer prevention behaviours and participation in cancer-focused programmes and screening [7,31].

Purpose of the study: The aim of this study was to initiate a discussion on the decision-making processes associated with nurses' and midwives' reporting for breast cancer screening. The discussion was prompted by the diagnosis of analogous behaviours in a selected group of nurses and midwives working in a hospital.

Material and methods: Nurses and midwives working in a hospital in the Podkarpackie region were studied. The study involved 118 women, including 72 nurses (approx. 25% of all employees) and 46 midwives (approx. 92% of all employees). A diagnostic survey with a questionnaire questionnaire prepared for this study with elements of a knowledge test was used. The study was conducted in January 2023.

Characteristics of the study group

More than 70% of the respondents were women over the age of 41 , living in cities, most often in a relationship (formal or informal). Almost 70% of the respondents had been working for at least 10 years. More than 75% of the nurses and midwives surveyed had experience of having a woman in their immediate family environment who had or was suffering from breast cancer.

Detailed characteristics of the study group are provided in Table 1.

Table 1 Characteristics of the surveyed nurses and midwives - selected variables

Variable	**Variable indicators**	**integer**	**%**
occupation	nurses	72	61,0
	midwives	46	39,0
age	23-30 years	19	16,1
	31-40 years	12	10,2
	41-50 years	46	39,0
	over 50 years old	41	34,7
marital status	Miss	20	16,9
	married	82	69,5
	divorced	14	11,9
	widow	2	1,7
education	secondary/professional	3	2,5
	higher bachelor degree	101	85,6
	higher masters degree	14	11,9
accommodation	town	78	66,10
	village	40	33,90
seniority	0-10 years	37	31,36
	11-20 years	26	22,03
	21-30 years	26	22,03

	over 31 years of age	29	24,58
principal place of work	non-surgical hospital ward	55	46,61
	hospital treatment unit	63	53,39
a history of breast cancer in the woman's immediate family	yes	88	74,58
	no	30	25,42
a close family history of non-breast cancer	yes	81	68,64
	no	37	31,36
birth experience	yes	95	80,51
	no	23	19,49
breastfeeding	yes	88	74,58
	no	17	14,41
	not applicable (she did not give birth)	23	19,49

Source: own elaboration

Questions about breast cancer screening were preceded by a knowledge test on epidemiology, risk factors, early symptoms and eligibility criteria of women for breast cancer prevention programmes. More than 80% of the women surveyed achieved a good score, placing them at a high or medium level of knowledge (high: 51.7%; medium: 30.5%). The knowledge of almost 18% (17.8%) of the nurses and midwives was at a low level. No statistically significant differences were found between the two professional groups.

Due to the eligibility criteria in force at the time of the study for free mammography under the National Health Fund (50-69 years), part of the analysis of the selected behaviours of the respondents related to breast cancer prevention and early diagnosis was done for the whole group and part by age, dividing the respondents into younger women (23-49 years) fifty years old and older women. From November 2023, women aged between 45 and 74 years can benefit from free mammography.

Tab.2 Behaviours and experiences of nurses and midwives surveyed related to breast cancer prevention

Behaviour analysed	**respondent's choice**	**integer**	**%**	
Does she perform breast self-examinations? (assessment of all women)	yes, systematically	61	51,69	
	yes, unsystematically	24	20,34	
	no	33	27,97	Reasons: lack of time - 14,4 %; fear of detecting change - 7,6%; lack of skills - 2,5%; " I only need to be examined by a doctor

				" - 4,4%
Has there ever been a physical examination of the breast by a doctor? (assessment of all women)	yes	57	48,31	
	no	55	46,61	
	I don't remember	6	5,08	
Have you ever had a breast ultrasound? (Assessment of women aged 23-49)	yes	50	64,9	- referral from a doctor - 68% - independent decision - 32%
	no	27	35,1	Reasons: - b I am afraid of the test result - 48,4%; - I am ashamed to undress for examination - 11,1% - other causes - 40,5%

Source: own elaboration

More than half of all ladies systematically performed breast self-examination and the most common reason for those who did not do it at all was lack of time, but also fear of detecting "something worrying" (7.6%). Almost 52% of those surveyed had either never had a physical breast examination by a doctor (46.61%) or did not remember it (5.08%). An in-depth analysis of the reasons associated with the decision to have an ultrasound examination shows that the younger respondents who had one (64.9%; n=50) overwhelmingly did so in response to having received an invitation for this examination (68.0% of this group). For nine ladies (32.0%), the invitation did not influence this decision.

This information on the older group of female respondents is illustrated in the next table (Table 3).

Table 3. Performance of ultrasound and mammography - data for the older group of respondents aged over 50 years old (N=41)

Have you ever had any of the following tests performed?		**nurses**		**midwives**		**total**	
		integer	**%**	**integer**	**%**	**N**	**%**
Breast ultrasound	yes	15	75,0	16	34,8	31	75,6
	no	5	25,0	5	23,8	10	24,4
Mammography	yes	18	90,0	14	66,7	32	78,0
	no	2	10,0	7	33,3	9	21,9

Source: own elaboration

Both ultrasound and mammography were performed by a large majority of both nurses and midwives. Mammography was performed more often by nurses and this difference was found

to be statistically significant (Chi square:4.86;p=0.05;df=1). Unfortunately, there were also some ladies among the respondents who did not perform any of these examinations. The analysis of the relationship between older respondents' mammography performance and level of knowledge about breast cancer did not confirm this relationship. Statistically, the level of knowledge was not significant for reporting for this examination (Chi-square: 1.81; df=3;p=0.05).

The reasons why the women surveyed did or did not have a mammogram are illustrated in Table 4.

Table 4 Reasons for having and not having mammograms - data for older group respondents aged 50 and over (multiple-choice questions)

REASONS FOR NOT HAVING A MAMMOGRAM	%	%	REASONS FOR MAMMOGRAPHY
I am afraid of detecting a cancerous lesion	12,2	25,0	*I want to detect possible abnormalities at an early stage of the disease*
I am afraid of pain during the examination	4,9	14,8	*I am taking the opportunity since the study is free*
I don't have time to do research	9,7	14,8	*I am getting tested because there is a family history of breast cancer*
I believe that mammography has a low diagnostic value	4,9	7,4	*I was persuaded to do so by my husband/partner*
I do not feel the need to have mammograms	19,5	22,2	*I have noticed some abnormalities in my breasts*
		29,6	*I wanted to make sure I was healthy*

Source: own elaboration

Although the most frequently selected reason for not having a mammogram was the full oncological awareness of the women surveyed, the reasons for not having a mammogram include the phrases I think mammography is of low diagnostic value and I do not feel the need to have a mammogram. As a reminder, medical women - nurses and midwives - were surveyed.

An attempt was made to determine what actions would encourage the nurses and midwives surveyed to perform the next examination provided for their age group as part of the breast

cancer prevention and early diagnosis programme (ultrasound, mammography)? The answers obtained are contained in the table below.

Table 5. Actions to encourage further examinations - opinions of female respondents (single choice single selection)

What would most convince/encourage you to have the next examination provided for your age group as part of the breast cancer prevention and early diagnosis programme (ultrasound, mammography)?	integer	**%**
Receiving a referral from a primary care physician/gynaecologist	38	32,2
Confidence that early detection of cancer is curable	32	27,1
Easy accessibility to the study	18	15,3
Guarantee of rapid access to treatment (when diagnosed)	17	14,4
Feedback, encouragement from a friend who had the test done	6	5,1
Examination by female medics	4	3,4
Always free of charge	3	2,5
Persuasion of husband/partner	0	0,0
Total	118	100,0

Source: own elaboration

The two most frequently chosen 'incentives' seem to have a certain logical relationship with each other. Most female medics surveyed would perform the next examination with a referral from a specialist. In contrast, the second most popular answer was "Knowing that early detection of cancer is curable". Does this result mean that the nurses and midwives surveyed would simply expect an honest conversation with a competent specialist, who does not assume that because they are medical professionals they "already know everything"? Our research naturally does not provide an answer to this question, but it does draw attention to the likelihood of such an outcome.

Discussion

The problem of the gap between health awareness and health behaviour is obviously not only a problem for Polish nurses and midwives. This problem is confirmed by numerous studies conducted in many centres around the world. For example, researchers in Australia found that many nurses lead unhealthy lifestyles that put them at high risk of developing non-communicable diseases, sometimes higher than in the Australian population. This result is all the more worrying as nurses in this country are the widest source of health education.The authors of this study point to urgently needed health promotion strategies for nurses [27]. The Turkish team, on the other hand, investigated the levels of perceived and calculated risk of breast cancer and the practice of breast self-examination and use of mammography among 215 nurses and midwives working in primary care. It was found that the level of perceived risk among the study participants was admittedly higher than the level of calculated risk, but given that the study participants were health care workers, the practice of breast self-examination and mammography as preventive behaviours was lower than expected [6]. Another Turkish team, which studied nurses and midwives working in a hospital, found that nurses were slightly more likely than midwives to perceive the benefits of mammography, but at the same time were less likely to report having this examination [3]. In contrast, an Iranian study of nurses and midwives indicated that it was not their knowledge of breast cancer screening but their awareness of breast cancer risk due to, for example, family history that was more important to register for mammography [17]. In another cross-sectional study of Taiwanese nurses, it was found that greater knowledge of breast cancer screening and breast cancer risk factors did not correlate with the surveyed nurses' breast cancer screening practices. More than 50% of participants in this study reported that they had never performed breast screening (ultrasound and/or mammography) in the past [33]. The work of another - this time a Nigerian team - found that more than 68% of the nurses surveyed in one rural tertiary hospital had not practised breast self-examination and did not know how to perform it correctly [26].

Why do some women avoid breast cancer screening? Why are these tests avoided by nurses and midwives? Some women fear the radiation from mammography, others that it takes a long time, and still others that the examination is painful. The practice of preventive measures and their effectiveness - not only in Poland - clearly shows that convincing a woman - including a medical professional - to take part in screening is difficult, and encouraging her to have a mammogram seems to be particularly difficult.

With the knowledge that early detection of breast cancer can save lives, health professionals are trying to find ways to help women understand the risks they face and encourage them to have mammograms. As the guidelines for breast cancer screening change (e.g. the age criterion changes) it is necessary to conduct research to fully understand the impact of different aids in the decision to participate in these screenings especially in age groups for which the recommendation has not previously applied (e.g. younger women).

It is worth quoting more extensively here the results of a systematic review of the effectiveness of 'decision aids' used with women to support their decision to have mammography. It illustrates how complex the process of constructing decision aids to support the decisions of a woman who is being encouraged to have mammography is and how insightful the evaluation of their effectiveness should be.

This study included data on screening intentions covering 2040 women [14]. The commentary on the results of this study published in Evidence Based Nursing in 2018 [9] allows for a deeper analysis of the counselling aimed at women encouraged to have mammograms - also in the context of nurses and midwives, who are both counsellors and recipients of this counselling.

The decision aids for patients undergoing breast cancer screening (BCS-PtDA - Breast Cancer Screening Patient Decision Aids), the effectiveness of which was evaluated by Ilya Ivlev's team, comprise six educational packages with different designs and content. Some of them (four) were based on the International Patient Decision Aid Standards (IPDAS/ International Patient Decision Aid Standards) [10], while the others were developed independently of them. The aids evaluated were:

- three BCS-PtDAs - are a set of computer files with screening information in the form of text and diagrams, of which only one in this group used animation to convey information to women
- three BCS-PtDAs were information brochures or leaflets.

The detailed content of these packages also varied:

- an algorithm to assess the risk of breast cancer in women was included in four of the BCS-PtDAs assessed
- risk factors that may lead to breast cancer were described by five BCS-PtDAs
- an extensive list of medical terms that patients may not have been familiar with was included in two BCS-PtDAs; an explanation of only one or two such terms was included in the other two BCS-PtDAs; one BCS-PtDA contained no explanation of medical terms and one had no information to assess this element.

The level of personalisation achieved when using these aids varied. The five BCS-PtDAs provided significant personalisation as they included interactive exercises to identify patients' life values, critical factors for their decisions and their expectations. In these, both the woman and the counsellor received feedback relating to the content of the support. Finally, all six BCS-PtDAs were found to provide some level of involvement not only of the woman, but also of relatives or other stakeholders (e.g. employer) in the woman's decision-making process.

Although the review of studies on the effectiveness of BCS-PtDA mainly included women in their 30s and 40s, not the age at which screening is routinely performed in some countries, the results were discouraging. The patient decision aids evaluated did not increase the number of women intending to have mammography. The prediction of the referenced studies showed that - unfortunately - evaluated decision aids may increase the proportion of women aged 38-50 years who do not intend to undergo breast cancer screening (the absolute difference from the usual care group - without the BCS-PtDA - was 8.5%). In contrast, the implementation of BCS-PtDA for women over 68 years of age may not affect their plans to continue mammography screening.

The authors of the cited review point to the need for large-scale randomised controlled trials - on the one hand, based on evidence of the efficacy of BCS-PtDA, and on the other hand, studies showing that screening mammography can lead to overdiagnosis [16]. Due to the asymptomatic phase of the disease, mammography is recommended as the primary screening procedure for early diagnosis. However, the American Cancer Society estimates that if 1,000 American women aged 40 years with average population risk of breast cancer undergo screening mammography, 125 of these women will be - unnecessarily - called for additional testing [22]. False-positive results will cause fear and anxiety in these women and - consequently - may lead to further imaging and/or biopsies. As an aside, these facts are corroborated by the interesting, albeit controversial, opinion of Marie Myung-Ok Lee, a nearly 50-year-old American author of a paper on the future of medicine, who, as early as 2014 in the pages of The New York Times, explains "Why I have never had a mammogram" [13]. Criticism based on the frequent false-positive results, which occur with even greater frequency with annual screening than with biennial screening [23], is reinforced by the lack of evidence that screening mammography significantly reduces breast cancer mortality among women aged 40 to 70 years [25]. Older women with a life expectancy of less than 10 years may not benefit from screening mammography [25]. Another disadvantage of screening mammography is the high number of examinations needed to prevent one death - in the case

of two-year screening, equal to 1034 for women aged 40 years, 426 for women aged 70 years and 1339 for women aged 80 years [8].

In our review, we also find - admittedly scant - positive evidence of the effectiveness of interventions to increase reporting of breast cancer screening, and this already relates directly to the group of nurses and midwives. In a study conducted in Minnesota, Katherine Martin and her team found that non-physician primary care providers (e.g. advanced practice nurses) were more likely to recommend mammography screening to women, both older and younger, because they were more effective in getting women to take an interest in their health [20]. In contrast, a study conducted in Turkey in 23 urban primary care centres and 25 rural primary care centres shows that supporting nurses and midwives in their cancer prevention tasks is effective. A group of 291 nurses and midwives (experimental), participated in the breast cancer training. Most of the ladies participating in the training were under 40 years old (average age 34 years), as nurses and midwives in Turkey can retire at the age of 42 after completing 20 years of compulsory service. The educational programme consisted of three components: 1. educational presentations in small groups (epidemiology, risk factors, early warning signs, breast cancer symptoms and significance, guidelines and methods for annual screening (with focus on mammography). 2. instruction in breast self-examination (video), 3. practice in palpation /diagnosis of breast lump on a specialised phantom. One year after the end of the programme, its effects were checked in the experimental and control groups. The educational intervention applied proved to be effective not only in the area of knowledge, but also had a positive impact on women's behaviour. The following positive changes occurred over the year following the training: 1. regular monthly breast self-examination (BSA-Breast Self-Awareness) experimental group 53%; control group 48%; however, the difference was not significant; 2. use of a physical examination of the breast performed by a doctor (CBE-Clinical Breast Exam)-experimental group 26%; control group 14%; significant difference; 3. performance of mammography; experimental group 38%; control group 4.3%; significant difference-most pronounced among the oldest trainees aged 40-42 years. The health beliefs of the participating nurses and midwives also changed and were translated into health counselling aimed at their female clients, related to motivating them to participate in breast cancer screening. The project used the Health Belief Model (HBM) [4], which has for quite a long time become the primary research tool to evaluate the effectiveness of oncology education [5].

Conclusions

Nurses and midwives are a large and therefore very important - for the population effect of many public health activities - group of health care professionals. Breast cancer prevention is one of them - a special one, because it provides an opportunity to establish a woman-woman relationship in which there is a nurse or midwife on one side and a woman who should benefit from various cancer screening methods on the other. It turns out that repeated personalised invitations to mammography sent by the Polish Post Office or INPOST, SMS text messages, the Internet Patient Account, etc. are not enough if no one will talk to such a woman.

We read in a number of documents, recommendations and recommendations that one of the conditions for increasing mammography uptake is the language of communication with the woman who is being encouraged to undergo this examination. The message must be credible and the language of communication simplified. One way to achieve this effect is for nurses and midwives - mainly in primary care - to participate in preventive activities preceded by special preparation [12]. Then, such a message - with features of therapeutic education - will be applied by a nurse or midwife who has previously received help herself in overcoming her own inhibitions that negatively influence her decisions related to her participation in preventive oncology programmes.

There is an urgent need to use different approaches and models (e.g. the Health Belief Model) in the design of support programmes for nurses and midwives as well as in the preparation of modern decision aids for women recipients of oncology prevention programmes, taking into account the trade-offs and preferences of women from both groups - medical professionals and their clients.

The effectiveness of primary care in the area of cancer prevention is also linked to the extended competences of nurses and midwives, who, by encroaching on the existing tasks of doctors (e.g. prescribing medicines and referring for various examinations) and being closer to their charges, have the chance to change these unfavourable patterns of breast cancer screening practice.

Author's contribution

Conceptualisation: Marianna Charzyńska-Gula , Grażyna Rożek,

Software: not applicable

Verification: Marianna Charzyńska-Gula , Grażyna Rożek , Piotr Szulich, Bogdan Tomczyk, Marta Zielińska

Formal analysis: Marianna Charzyńska-Gula , Grażyna Rożek, Bogdan Tomczyk, Marta Zielińska

Research: Marianna Charzyńska-Gula

Resources: not applicable

Writing: Marianna Charzyńska-Gula , Grażyna Rożek, Agnieszka Sojda,

Writing review and editing: Marianna Charzyńska-Gula , Grażyna Rożek, Agnieszka Sojda, Bogdan Tomczyk, Marta Zielińska

Visualisation: Marianna Charzyńska-Gula ,

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