

Existing Health Practices in Shaping the Decision to Participate During Breast Cancer Screening Among 50–69 Years Old Women in Estonia

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Abstract

Introduction: Breast cancer is easily detectable by mammography and many countries run national screening programs for women as a target group. Yet, the majority of these countries have screening participation rates below the recommended level of 70%.

Objective: The aim of the present article was to examine a connection between existing health practices and a decision to participate during breast cancer screening.

Methods: Methodologically, this research was a web panel and quantitative telephone survey. The survey was conducted among 1200 Estonian women in the age group 50–69 years. Statistical data analysis was performed with SPSS using a descriptive and logistic regression model.

Results: The findings revealed that among different background variables, age and existing health practices significantly influenced the decision-making for participating in the screening. Results also highlighted that the possibility to participate in the screening increased with existing supportive health practices and with the increasing age. Other sociodemographic factors did not have a significant influence on the decision-making of participation.

Conclusions: There is a need to educate people from an early age about the developments in health practices that could support a healthy lifestyle in terms of individual responsibility. Thus, public health campaigns should not only call for action but also focus on health education in terms of the role of preventive medicine and health practices.

Keywords

breast cancer screening, non-participation, health practices, cancer prevention

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Introduction

Breast cancer (BC) is the most frequent type of cancer in women globally (World Cancer Research Fund & American Institute for Cancer Research, 2018) and its incidence rate is increasing due to improved diagnostic techniques and changed lifestyle (e.g., obesity, decreased physical activity, etc.) (European Cancer Information System, 2020; Parada et al., 2019). Despite an increase in the incidence rate, mortality of BC is decreasing due to advances in treatment options and breast cancer screening (BCS) programs that allow early detection of the disease (European Cancer Information System, 2020), and the survival is increased from 65% to 80% during last 20 years in Estonia (Ginsburg et al., 2020;

Ministry of Social Affairs & National Institute for Health Development, 2021). However, only six European countries, namely Finland, Ireland, the Netherlands, Norway, Slovenia,

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and the United Kingdom (UK), have reached the recommended target rate of 70% participation in BCS programs and like many countries in Europe, a participation rate in BCS has remained lower than the recommended (70%) (OECD, 2018), reaching 55% in 2019 (National Institute for Health Development, 2021) although, national BCS programs targeting women in the age group 50–69 years started in 2003 (Ministry of Social Affairs & National Institute for Health Development, 2021; Ulp et al., 2010).

Review of Literature

There are several barriers that hinder the participation in BCS classified as, potential delays in access, diagnosis, and treatment (Mascara & Constantinou, 2021). While the diagnostic delay may be mostly related to the healthcare service provider, access delay involves women's awareness and initial access to services. Treatment delays involve potential abandonment or discontinuation of treatment and are related to individual choices (Foroozani et al., 2020) and actions as well as systemic problems (Hanna et al., 2020). Earlier research revealed several factors that contribute to BCS participation including outlined socio-demographic variables such as younger age or higher education (Glanz et al., 1992; Henry et al., 2014; Lee et al., 2010; Willems & Bracke, 2018), provider-patient communication (Clark & Reeves, 2015), social determinants of health such as low literacy, lack of awareness, health insurance, and so on (Gesink et al., 2016), fear and other emotional reasons (Clark & Reeves, 2015; Gesink et al., 2016; Lubi, Savicka, et al., 2021), personal practical issues (Lubi, Savicka, et al., 2021; Valent et al., 2020) as well as existing health practices (Lubi, Savicka, et al., 2021) which might hinder participation decision in BCS. While many of these aspects are investigated previously, the role of existing health practices is not widely explored.

Practices as “routinized type of behaviour(s)” consist of several interconnected elements (Reckwitz, 2002), form practice-bundles, and are complex units (Schatzki, 2013). Practices emerge over time-period, based on repetitions and reproduction of certain activities (Schatzki, 2013). Based on the example of qualitative interviews, we previously identified that in the context of screening participation, the role of health practices in the screening participation decision is expressed as practical (e.g., time, access, etc.) as well as habitual (e.g., during childhood acquired skills and habits to manage health issues or communicate with the medical system in general) constraints (Lubi, Savicka, et al., 2021). It was shown that in particular situations, the approach of health practices allows for detecting “the emergent and contingent properties of people's activities” (Cohn, 2014). As the social practice theory explains a link between practice and social situations (Shove, 2010; Warde et al., 2017) an approach regarding the role of health practices is closer to the actual situations of everyday social life (Cohn, 2014). Therefore, examining an interconnection among health-related

practices and their influence on adjustment of existing or development of new health practices that emerge during life course might be relevant. The aim of the present article was to examine a connection between existing health practices and a decision to participate during BCS, and thereby, to provide novel insights into potential structural and agential issues as well as solutions to BCS organization.

Methods

Design

For data collection, a questionnaire containing closed- and open-ended questions was used. In this survey, the questionnaire from the earlier research in 2006 conducted in Estonia (Aasmaa & Mägi, 2007) was used as a basis, however, since there have been several developments in healthcare systems, screening management, digital technology, and so on, relevant adjustments were implemented. The used questionnaire is not a validated tool but it has been used previously in an Estonian context. The tool was created by Aasmaa & Mägi (2007) who followed a Finnish example and the authors of the present research considered it necessary to use a questionnaire that was already used in a local context. Data was collected via web panel (75%) and telephone survey (25%) by a poll company as this was considered the most appropriate way to involve participants in the survey. The telephone survey was used to reach elderly members of the target group and those who did not respond to the web panel invitation. The total usage of computers and the internet among the age group of 16–74 years reached 88% in 2017 in Estonia. Among age groups of 55–64 years and 65–74 years, the usage of computers and the internet was 78% and 54%, respectively (Statistics Estonia, 2021a).

The questionnaire was divided into sections based on the following topics: socio-demographic background, BC-related awareness, BC-related information channels, BCS-related information channels, participation and activities regarding BCS and usual health practices (e.g., visiting general practitioners [GP], gynecologists and other specialists for different purposes, including prevention). Due to a high number of Russian-speaking participants, the questionnaire was bilingual (in Estonian and Russian).

Research Questions

The research aims to answer to following research questions: (1) Whether there is a statistically significant connection between existing health practices and BCS decisions? (2) Which sociodemographic factors influence BCS participation rate and to which extent?

Sample

For sample size formation, purposive sampling was used. The size of the target population (i.e., women in age 50–

69) which was the basis for sample formation, was 182 203 women as of January 2020 (Statistics Estonia, 2021b). The size of the sample was 1200 women of age between 50 and 69 years; this age group is the target group for BCS in Estonia. For the sample formation, the weighted average was used and the proportion of the target population based on the age, location, native language, and education was considered. The power analysis was not conducted and the sample is not representative in the sense that the inclusion criteria was the presence of valid state-covered health insurance as this is the prerequisite for participation during the BCS program (Statistics Estonia, 2021b). Women from ethnolinguistic majority (Estonian) and the biggest group of minorities (Russians) were involved, since the number of women from the other minorities was very small, disabling any relevant analysis. Russian minority however, constitutes around a quarter of total population of 1.3 million people in Estonia and the involvement was relevant also because of Estonia's Soviet heritage. The influence of the Russian media field on the relevant population group might evoke differences and influence decision-making in BCS participation based on ethnic differences as it is not known whether and how BCS topics are presented in Russian media¹. However, in terms of screening promotion in Estonia, the information does not differ for different ethnic groups and all promotional materials and campaigns were usually channeled according to the preferences of different groups (including via Baltic Russian media channels²) and in two languages – Estonian and Russian. Therefore, the information about the screening programs is equally available to the members of the target group regardless of their socio-demographic variables.

Inclusion and Exclusion Criteria

The inclusion criteria for the research were: (1) belonging to the target group of BCS, that is, women in age 50–69; and (2) the presences of a valid health insurance covered by the state of Estonia.

The reason for these criteria is derived from the general organization of the BCS program, that is, it is available to this target group and only to women who have valid health insurance. Therefore, the exclusion criteria in addition to male sex and/or less than 50 or more than 69 years old women was missing health insurance coverage.

Ethical Considerations

This research was granted an ethical permission by the Research Ethics Committee of the National Institute of Health Development (approvals no 2650, 85 and 144). All the participants were directly approached by the poll company through their database and based on the participants' prior permission to approach them on topics like presented in the research. However, since the research participation was on voluntary basis, all the participants had

an option to refuse the participation (the first question was intended to identify a willingness to participate).

Statistical Analysis

For statistical analysis, SPSS version 23 in concordance with SAPML Guidelines (Lang & Altman, 2014) was used. Only the participants who had received the invitations were included in the final analysis ($n = 1171$, 98% of the total sample). Methods of descriptive statistics and logistic regression analysis were used. A p value $< .05$ (95% CI) was considered statistically significant and the results are presented in terms of odds ratio (OR), confidence interval, and R^2 (Cox&Snell and Nagelkerke) values. To avoid misleading results in the logistic regression model, the authors revised crosstabs between dependent and independent variables to evaluate that every group contains at least a few respondents. The dependent variable was the participation during BCS (0 = participated BCS after receiving the invitation; 1 = did not participate in BCS although received an invitation). The independent variables were age, place of living (location), linguistic group, educational level, and the regularity of visiting GP and gynecologist.

Due to a low number of participants with elementary or basic education, they were merged into the group of participants with secondary education (51%) to enable adequate statistical analysis. To ensure the adequacy of this re-grouping, a separate analysis with different educational groups was performed and no difference among these participants on BCS behavior based on education was detected, indicating suitability of re-grouping. Also, Cramer's V was used to assess, how strongly two independent variables were associated to each other. This was to avoid a strong association between independent variables in the logistic regression model. As Cramer's V did not show any association higher than 0.5, all the variables were included in the analyses.

Results

Sample Characteristics

Sample characteristics are presented in Table 1. Out of 1200 respondents, 1171 participants had received the invitation to participate in BCS (98%) and 90% of the invited participants contributed in the screening program afterward.

Location was distinguished as a city wherein a tertiary health-care provider was located (38%), a county center (17%), or a rural area (44.7%). Analysis revealed that women living in rural areas were more likely to participate in BCS as compared to women from bigger cities or county centers.

Russian-speaking women are represented under the selection "other" in language category. The proportion of Russian-speaking participants (27.3%) corresponded to the ethnic allocation of Russians in Estonia, which was 27.5%

Table 1. Sample Characteristics ($n = 1171$).

		Frequency ($n = 1171$)	%
Age	50–54	268	22.9
	55–59	309	26.4
	60–64	303	25.9
	65–69	291	24.9
Language	Estonian	851	72.7
	Other	320	27.3
Location	Big cities	448	38.3
	County center	200	17.1
	Rural area	523	44.7
Education	Elementary, Basic or Secondary	601	51.3
	Higher	570	48.7
Health practices	Regular health check-ups with GP and gynecologist	252	21.5
	Regular health check-ups either with GP or gynecologist	585	50.0
	No regular health check-ups	334	28.5
BCS practice	Participates after receiving invitation	1056	90.2
	Did not participate after receiving invitation	115	9.8

Table 2. The Role of Sociodemographic and Health-Practice Related Variables on BCS Participation as Revealed by the Logistic Regression ($n = 1171$).

	B	S.E.	Wald	df	Sig.	Exp (B)
Age	−0.489	0.100	24.162	1	0.000	0.613
Location	0.33	0.112	0.088	1	0.767	1.034
Language	−0.55	0.230	0.056	1	0.813	0.947
Education	−0.53	0.203	0.069	1	0.793	0.948
Regularity of health check-ups	0.994	0.164	36.733	1	0.000	2.703
	−3.212	0.661	23.596	1	0.000	0.040

P-values that are significant ($p < .05$) are in bold. Cox&Snell R^2 is 0.049 and Nagelkerke R^2 is 0.103.

of the total population in 2020 (Statistics Estonia, 2021b). While half of the study participants were used to have regular health check-ups either with their GP or gynecologists, almost one-third of the participants did not have their regular health check-ups visits (regardless of the presence/absence of any symptoms or complaints).

Research Question Results

The main findings are outlined in Table 2. As depicted in Table 2, statistical significance in background variables was outlined in age and regular health check-ups. Higher age (OR 0.613 [0.504–0.745]) reduced the possibility of receiving the invitation but not attending; this

means, that women with higher age were more likely to attend BCS after they had received an invitation. The findings convincingly outlined that in case an asymptomatic woman is not used to take regular health check-ups at her GP, gynecologist, or any other healthcare professionals (OR 2.703 [1.960–3.728]) she is more likely to miss BCS regardless of the received invitation. Increasing irregularity (i.e., from visiting regularly GP and gynecologist to visiting either GP or gynecologist regularly to not visiting neither GP nor gynecologist regularly. For details please refer to Table 1, section “Health practices”) increased the likelihood of not participating in the BCS despite receiving a BCS invitation. Regardless of the likelihood, there were still around 20% of participants who did not have any regular health check-ups with their GP or gynecologists but were participating BCS (Table 1, BCS practices). There was no significant correlation between the BCS participation and the level of education, linguistic ethnicity, or location. Implications of the findings are further elaborated under the “Discussion” section.

Discussion

As findings of the logistic regression of present research indicated, age and existing health practices are relevant in shaping BCS-participation’s decision. Although some of the latest data show an association between higher age and increased possibility of screening participation (Jolidon et al., 2021), the majority of the previous research showed that higher age correlates to BCS-participation decision conversely along with the other factors such as lower education, lower income, and so on (Henry et al., 2014; Lee et al., 2010). The findings of the research also outlined and confirmed the relevance of a concept of social practices in the health context indicating the positive role of existing habitual ways of taking symptom-free health check-ups in determining the readiness to participate in BCS. Our findings did not indicate any association between BCS participation and other socio-demographic factors (e.g., education, location, or linguistic ethnicity), although the previous research had outlined the association among these factors (Glanz et al., 1992; Henry et al., 2014; Lee et al., 2010; Willems & Bracke, 2018). Potential reasons behind the findings might be related to a low level of awareness. However, as shown previously (Lubi, Savicka, et al., 2021), the low level of awareness might not be a primary/main issue for non-participation.

In interpreting and explaining the controversial findings, it is necessary to outline three aspects, out of which two are methodological: (1) We involved the women with health insurance coverage only. (2) We analyzed the data in terms of “receiving invitation but not participating” while the previous research had examined participation without connecting it to screening invitation. (3) Estonia, as a post-Soviet country started implementing patient engagement practices in the mid-1990s, which is a relatively recent practice compared to the other Western countries, where the first

indications of self-management appeared in mid-60s of the previous century (Lorig & Holman, 2003). Thus, the last aspect might have resulted in a relative prevalence of patient obedience characteristic to paternalism in the older age group.

In explaining the statistical significance of existing health practices in determining BCS participation, the social practice theory provides valuable insights to understand the potential mechanism behind decision development. As practices are routinized (Reckwitz, 2002), developed over time-period after several repetitions and persistence, intertwined with other practices, and form practice-bundles (Schatzki, 2013), their influence on any new practice should not be underestimated. Research on chronically ill people (Lubi, 2019) showed that readiness to make the changes in daily (including health-related) practices is impossible if they are not gradual and after continuation with old practices, which indicates the persistent nature of existing (health) practices. Also, earlier qualitative research studies involving women as a target group and exploring reasons for non-participation in BCS indicated the importance of existing health-related habits in determining BCS participation related decision (Lubi, Savicka, et al., 2021).

In light of the previous findings, the present research vigorously outlined the role of existing health practices like, preventive medicine which is often overlooked however, is most commonly used by the people to relate to the medical system. In other words, existing practices (both, behavior and occasions) are relevant in BCS-related decision-making. For example, those women who were used to have a regular health check-up either with their GP or gynecologist and had symptoms were more eager to participate in the screening program.

The findings support a social practice theory approach regarding the relevance of existing habits, wherein a routinized (i.e., somewhat unconscious nature of the) practice will be implemented despite other background variables. Thus, the main conclusions of the study indicates a need to consider re-designing of educational approaches in the area of general and public health as well as in spreading health communication messages among the general public. The latter would enable a shift from purely individualistic approaches of call of action to wider approaches, which would include a community-based approach to health prevention and adjustments in the (cultural) meanings of health and illness (Lubi, Metsoja, et al., 2021; Lubi, Savicka, et al., 2021).

Strengths and Limitations

The strength of the research is a relatively high proportion of respondents which enables the wider generalization of the findings in understanding potential barriers that might hinder participation during preventive health programs and thereby, analyzing health communication and the need to adjust messages to a wider context (i.e., general health practices) compared to purely concrete “call-to-action” messages.

Despite this positive direction, also some limitations of this study should be acknowledged. The sample size was not representative as one of the participation criteria was that the participant must be covered with health insurance (the total number of people without health insurance was around 5% in 2020 [Eesti Statistika [Estonian Statistics], 2018]); also the composition of the sample differed from actual composition in terms of locations (i.e., almost 70% of the total population was from rural areas as compared to 55% citizens, who were located in big cities and county center in the present study). However, the authors believe that despite these limitations, the results and new knowledge revealed from this study remain valuable, and provide useful insights into the issue.

Implications for Practice

In terms of practical implications, the findings of the present study highlight the need for a more comprehensive public health approach exceeding the boundaries of simplistic health campaigns directed to an individualistic call for a single action for prevention, namely a screening program. Rather, there is a need for a holistic approach in terms of prevention that might require more time to apply fully.

Conclusions

To conclude, in (re-)designing national health policies there is a need for conjugating health (communication) policies, community-based involvement, and educational interventions for children and adolescents to support the development of desired health practices which lead to the routinization of actions in the area of prevention and thereby to normalize the understanding of screening participation as “another health practice” to adopt.

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

The authors confirm that all participant information and identifiers have been removed or disguised so that the described persons are not identifiable and cannot be identified through the text details.

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Notes

1. There are no doubts about the general content regarding BCS but since the funding of such programs are country-specific, this might also influence the perception of the messages.
2. It is noteworthy that after Russian invasion to Ukraine, the situation has been changed with the access of Baltic Russian and Russian media channels, while the data of this research are from previous geopolitical situation. Therefore, the situation should be re-analysed in the future.

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