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Attitude Examination Related to Breast Cancer Among Women in Bács-Kiskun County, Hungary

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Abstract: *Breast cancer is the most commonly diagnosed type of cancer and a leading cause of mortality among women both in developed and developing countries all over the world. Our research questions were the following: 1. What is the ratio of women participating in mammography screening? 2. What factors influence the attendance of the screening? A quantitative, cross-sectional, and descriptive study (2013) examined women aged 35-65 without a history of breast cancer from Kecskemét City and its region. Non -random, convenience sampling method was applied in the study. The self-edited and self-administered questionnaire included the following groups of questions: socio-demographic data, attitude examination related to screening, reasons for absence. Besides SPSS Statistics, 20.00 test, x2 test, t-test, and ANOVA were used (p<0.05). During the Principal Component Analysis, 23 variables of the motivational scale were grouped into six theoretical subgroups, and the Cronbach-alpha value was 0.758. The mean age of the participants was 49.96±8.91 years.71% of the interviewees never attended breast cancer screening. Regarding the sample, the mean age of women participating in the screening for the first time was 39.66±12.21 years. Women with college/university degree attained high scores on the knowledge test (p<0.05). A significant part of women went to the screening because they feel responsibility for their health status or due to the family history of breast cancer. Fear, shame, or inconveniencies during examination did not affect participation in screening. Prevention programs play a significant role in the improvement of the health status of the Hungarian population. Mortality and morbidity indicators can be reduced by regularly organized, preventive activities based on appropriate knowledge. Thus, the number of healthy years can be increased.*

Introduction

According to the statistical indicators from 2012, breast cancer is the second most prevalent cancer type in the world. 1.7 million women were diagnosed with breast cancer, and 6.3 million of them were diagnosed with the disease in the past five years. According to assessments, incidence and mortality show an increasing tendency (20% and 14%). Figure 1. illustrates that incidence of the disease is more common than mortality in European countries, resulting in a more positive surviving rate. In Hungary, similarly to international data, breast cancer is the most common gynecological tumor type. In 2013, 2263 deaths and 7594 new cases were registered (Fig.2). Comparing Hungary to developed countries, incidence shows a more positive picture than it does in developed countries (Bray et al., 2013; Ferlay et al., 2013).

Figure 1. Prevalence of breast cancer in European countries
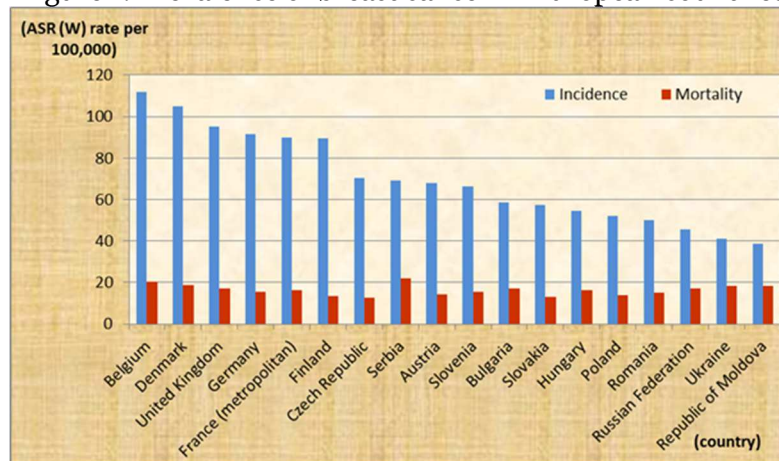
(Source: Globocan, 2012)

Figure 2. Incidence of breast cancer in Hungary between 2003 and 2013

(Source: Internet-based Hungarian Health Datawarehouse)

Organized screening of breast cancer in Hungary

A model trial for launching organized screening of breast cancer supported by the World Bank, the Soros Foundation, and the tender of the National Health Insurance Fund started in the 90's involving some counties in Hungary. The guidelines for the organized screening were determined in the light of these results. Since 1st January 1998 screening has been available for insured women aged 45-65. According to the Ministerial Decree (51/1997 [XII. 18]), mammography screening is free of charge for women every two years. The country-wide, organized screening of breast cancer was launched in January 2002, within the 'Public Health Program for the Healthy Nation' between 2001 and 2010 and the 'National Public Health Program' (Bodó et al., 1997; Boncz et al., 2005).

Objective

The purpose of our study was to assess the health behaviour of women in Bács-Kiskun County, the proportion of participation in cervical screening, and the factors affecting participation in the screening.

Methods

Our quantitative, cross-sectional study was carried out in Hungary, between July and October 2013. Data collection was supported by literature research and survey. The non-random, convenient sampling was accomplished among women aged 35-65, with Hungarian citizenship in Kecskemét City and its region (N=100). Exclusion criteria involved women with a case history of breast cancer, surgery or treatment of the disease. Filling in the questionnaire was voluntary and anonymous.

A previously used questionnaire on cervical cancer screening (Pakai et al., 2010) was revised and applied for the survey of breast cancer screening as a new one (Pakai et al., 2010; Pakai, 2011). The motivational assessment scale involved 23 questions emphasizing motivation, the reasons for absence, and the role of health staff during screening. The five-degree Likert scale extended from 'not at all' to 'positive' responses. According to the reliability of the questionnaire, Cronbach-alpha value was 0.758. For further data analysis, Principal Component Analysis was applied. The motivational scale was complemented by questions regarding demography and participation in screening. IBM SPSS Statistic 20.0 program was used for data processing. Average, deviation, and frequency were calculated. X2 test, t-test, correlation, one-way variance analysis (ANOVA) were used. Deviation were considered as significant with $p < 0.05$ (Lampek & Kívés, 2012; Pakai & Kívés, 2013; Karamánné-Pakai & Oláh, 2015)

Results

Socio-demographic data

The mean age for women was 49.96 years (SD= 8.91, range=35-65). Regarding qualification, almost half of the respondents had GCE (vocational secondary/grammar schools: 47%). Women with higher education accounted for 23%. Women with skilled worker certification accounted for 17.5%, and only 6.9% of the respondents had primary school qualification. Regarding family status, 54% of the women lived in marriage, 29% of them were divorced, 9% of the respondents were single, and 7% of them were widows (Table 1). Regarding domicile, 58% of the respondents lived in Kecskemét City, and 42% of them lived in other settlements, such as Lajosmizse, Kiskunfélegyháza, Kalocsa (Table 1.).

Table 1. Characteristics of the sample (N=100)

Variable	person/mean
Age	*49,96 years*
35-44 years	32
45-54 years	30
55-65 years	38
Family status	
Married	54
Single	9
Divorced	29
Widow	7
No response	1
Education	
Primary school	9
Vocational secondary school	21
GCE	47
College/University diploma	23
Employment	
Employed	76
Pensioner	21
On childcare allowance	1
Unemployed	2
Domicile	
Kecskemét	58
Lajosmizse	6
Kiskunfélegyháza	7
Kalocsa	8
other	21

Attendance of mammography screening

71% of the respondents went to mammography screening once in their life at least. The mean age for the first screening was 39.96 years (SD=12.21). 37 persons went to the first screening with a call-up letter, nine persons had a referral from the GP, 23 respondents indicated the 'other' category. Among the interviewees, 17 persons went to the screening on a yearly

basis, 28 respondents were screened every two years, seven persons did it every three years, and 14 women appeared at the screening less frequently (Table 2).

In the statistical analysis, we were eager to know how many women received a call-up letter during the past two years among women aged 45-65 years (n=68). 54 women of endangered age received a call-up letter, 14 persons were not informed. Due to the letter, 35 people took part in the examination, 19 persons went to it regularly, ten people participated in the screening without the letter, and three persons indicated that they did not go to the screening despite the letter.

Table 2. Participation in breast cancer screening

Variable	person/mean	%/SD
Age at the first participation (n=71)	39,66	12,21
Reason for the first participation (n=71)		
Call-up letter	37	52,1
Referral letter	9	12,7
Other	23	32,4
No response	2	2,8
How often do you go to the screening?		
Yearly	17	23,9
In two years	28	39,4
In three years	7	9,9
Less often	14	19,7
No response	5	7,0
When did you go the last time?		
2013	20	28,2
2012	12	16,9
2011	16	22,5
2010	6	8,5
Earlier	7	9,9
No recollections	2	2,8
No response	8	11,38

Knowledge level

While processing the results, we analysed the knowledge level related to the promoting factors, symptoms of breast cancer development, and the self-examination of the breast. Each proper answer scored one point. After summarizing and assessing the answers, seven points to the symptoms of breast cancer, and ten points to the risk factors could be given. 8 pictures with text explanations assessed the knowledge level on the self-examination of the breast. Proper order scored five points. Three points were given in the case of one or two errors, one point was given in the case of three or four errors, and 0 point for wrong order. The highest score was 17 from the maximum 22; the lowest score was 2. The mean score was 9.08 points (SD=3.40) (Table 3). ANOVA proved the higher score for persons with higher educational level ($p<0.05$). No significant difference was found between the questions of the socio-demographic data and the participation in the screening ($p>0.05$).

Table 3. Knowledge level related to breast cancer and self-examination (N=100)

Knowledge level	mean/deviation	minimum	maximum
Symptoms of breast cancer	3.29±1.71	0	7
Risk factors for breast cancer	3.37±1.64	1	8
Process of self-examination	2,42±1,65	0	5
Total score	9,08±3,40	2	17

Analysis of the main component of the attitude related to mammography screening

23 statements in the questionnaire were grouped into six, eigenvalue factors greater than one. In this case, MSA values (Measures of Sampling Adequacy) were between 0.536-0.911. The KMO value (Kaiser-Meyer-Olkin) was 0.813 (excellent). According to the Bartlett test, the starting values were appropriate for factor analysis (p<0.05). Greater factor weight than 0.40 was considered as a condition for belonging to a given factor. The six components retained 70.098 % of the information of the variables. The six factors were described by the following titles: 1. Psychological background factors affecting participation in screening 2. She attends screening due to prevention and the prevalence of the disease in her relations 3. The absence in the light of time factor 4. She attends screening because she cares about her health 5. She participates in screening in the light of setting an example, background financial factors, and complaints 6. The absence, because she believes she cannot prevent the disease in this way (Table 4).

Table 4. Total Variance Explained

Factor	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
Factor 1. Background psychological factors affecting participation in screening (11 questions)	7.602	33.050	33.050
Factor 2. She attends screening due to prevention and the prevalence of the disease in her relations (4 questions)	2.764	12.017	45.067
Factor 3. The absence in the light of time (2 questions)	2.088	9.080	54.148
Factor 4. She attends screening because she cares about her health (2 questions)	1.529	6.647	60.795
Factor 5. She participates in the screening in the light of setting an example, background financial factors, and complaints (3 questions)	1.085	4.716	65.511
Factor 6. The absence, because she believes she cannot prevent the disease in this way (1 questions)	1.055	4.587	70.098

Table 5. Descriptive statistical analysis of the component structure of attitude related to breast cancer screening

Factor	Average/variance	minimum	maximum	range
Factor 1. Background psychological factors affecting participation in screening (11 questions)	46.88±9.03	17	55	38
Factor 2. She attends screening due to prevention and the prevalence of the disease in her relations (4 questions)	8.30±3.38	4	18	14
Factor 3. The absence in the light of time (2 questions)	7.05±2.41	2	10	8
Factor 4. She attends screening because she cares about her health (2 questions)	5.90±2.64	1	10	9
Factor 5. She participates in the screening in the light of setting an example, background financial factors, and complaints(3questions)	6.32 ±2.11	3	12	9
Factor 6. The absence, because she believes she cannot prevent the disease in this way(1 questions)	2.66±1.56	1	5	4

The most significant component was the first factor "Psychological factors affecting participation in screening". *Fear* could be considered as an indifferent factor accounting for 14% of women. However, due to fear, 5% of women were absent from the screening. In total, fear did not deter 81% of women from participation. Pain during the screening discouraged 11% of women. 5% of them believed the lack of time was the cause of missing from participation. However, 88% of women thought the lack of time was not an affecting factor. 10% of women felt themselves fit. Therefore, they did not need screening. 5% of the respondents did not attend the screening due to the lack of the call-in letter. Only 7% of them admitted that they had no knowledge of the place of the screenings. 4% of women in the sample were ashamed because of the examination. 11% of the members of the sample claimed that examination was inconvenient in contrast to 78% of the women. Only 16% attended the screening due to the general practitioner's recommendation. 4% were absent because of previous unpleasant experiences.

The second component involved the factor "*She attends the screening due to prevention and the prevalence of the disease in her relations*".

Women admitted that they attended the screening because of the occurrence of breast cancer in the family members (81%) or among friends (84%). For prevention reasons, 63% of the respondents and for maintenance of health 67% of women participated in the screening.

The third component included the factor *"The absence in the light of time"* .17% of the respondents did not attend the screening due to prolonged waiting time. More than one-third (36%) of the interviewees blamed their lack of time for absence.

Regarding the fourth factor, 42.7% of the respondents took part in the screening because they cared about their health. 49% of the interviewees went to be screened to have the abnormality treated in time.

The fifth component involved *"She participates in the screening in the light of setting an example, background financial factors, and complaints"* factor. 87% of women admitted going to the screening in the case of a complaint. 80.8% of them felt the screening should have been free. 43% of the respondents believed she set an example for her daughter by attending the screening. In the case of the sixth factor, respondents felt that the screening could not prevent diseases.

According to the main component results of the attitude related to breast cancer screening, we analysed the scores of each factor by a socio-demographic approach and the questions on the participation in the screening. The items of the first and second factor showed no significant correlation with the socio-demographic data ($p>0.05$). According to the one-way variance analysis, a significant difference was found between the third factor and qualification ($p<0.05$). For persons with higher education, time was not an affecting factor. A weak, negative correlation was found between the fourth factor and age of the respondents ($r=-0.227$, $p<0.05$) Student's t-test showed a significant difference between participants and missing persons ($p<0.05$). Age of participation in the first screening had a weak, negative correlation with the first factor ($r=-0.354$, $p<0.05$). It showed a weak, positive correlation with the second factor ($r=0.204$, $p<0.05$), and the fifth factor ($r=0,211$, $p<0.05$).

Discussion

The prevalence rate of breast cancer is 43.1 persons/10000 inhabitants all over the world. This rate is 66.5 people in Europe that is higher in the western region than in East-Europe. Breast cancer is a public health concern regarding its incidence and mortality in Hungary. Besides national and international studies, statistical data collections served as a starting point for our analysis that focused on the level of knowledge, attitude, and the psychosocial analysis of tumor disorders in females (Betlehem & Kriszbacher, 2008; Pakai et al., 2010; Pakai, 2011; Karamánné-Pakai et al., 2009; Karamánné-Pakai, 2014; Dégi, 2006, 2007, 2008).

The purpose of mammography is to ascertain the suspected signs of a tumor, follow the patient treated by a malignant tumor of the breast, and recognize the disease early. According to several studies, early recognition of the disorder significantly reduces the mortality of breast cancer. The procedure as a screening method makes the recognition of the preclinical

stage of the disorder possible by examining asymptomatic women (Langmár et al., 2011). The organized screening of breast cancer was launched for the age group at risk (45-65) in our country, in 2002. Participation indicators were analyzed from the database of the National Health Fund by Boncz et al. The results showed that the ratio of the participants in the screening by imaging technique increased (Boncz et al., 2005, 2008, 2013). According to our study, 71% of the respondents took part in the screening in their lifetime, and 63.3% of them presented during a two-year-period. However, the level of theoretical knowledge on the topic was relatively small, 9.08 scores from 22. The findings of two national studies are similar to our results. Müller et al. (2012) reported that most of the respondents had incomplete education of the promoting factors of breast cancer. According to the results of *Ripp* et al. (2011), participants in breast cancer screening had appropriate knowledge on the incidence of the disease. However, a high degree of deficiency was seen in the knowledge on the risk factors and signs of breast cancer (Ripp et al., 2011). They set up a wrong order of questions concerning the self-examination of the breast. Only 16 persons knew the right order of questions. Prevention and prevention programs play a crucial role in the improvement of the health status of the Hungarian population. Health staff also has a significant role in these programs. Findings point to the importance of information provision in a broad range, preferably by multiple channels. Regular and convincing prevention activity based on appropriate education is necessary for the long run. Every woman should be informed of the procedure, its usefulness, risks, and side-effects. Professionals should draw their attention to risks of non-compliance. Thus, the rate of morbidity and mortality in premature, malignant cancers can be reduced. Therefore, the number of disease-free years in life can be increased (Boncz et al., 2015; Ágoston et al., 2009; Müller et al., 2012; Farkasné-Buzánczky et al., 2014).

Acknowledgements

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