RESEARCH ARTICLE

Assessment of Midwifery Student Preparation for Performing the Role of Breast Cancer Educator

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Abstract

Purpose: Our research project aimed at presenting midwifery student self-assessment of performing the role of breast cancer prevention educator. Materials and Methods: Investigations were carried out in 2011 at the Medical University of Lublin in Poland, and Katolieke Hogeschool of Kortrijk in Belgium, after obtaining approval of the ethical committee of Polish Midwives Association (III/EC/2011/PMA). The project involved a total of 155 midwifery students, made up of 95 from Poland, and 60 from Belgium. Relations between opposing characteristics were tested with Chi-square (x^2) test for independent traits. To assess the dependence relation between the examined variables Pearson's corrected coefficient was used. Data base and statistics were carried out with computer software STATISTICA 9.0 (StatSoftPoland). Conclusions: Student knowledge on prevention against breast cancer was unsatisfactory.The students place of residence determined their self-estimation of personal knowledge of breast cancer prevention and diagnosing methods to assess the incidence of the disease, this knowledge being better with the students of Lublin. Better self-estimation in the students of Lublin of their personal knowledge on factors rising the risk of breast cancer, such as alimentation method, application of oral contraceptives and breast feeding was found than in Belgian students.

Keywords: Education - breast cancer prevention - midwifery students - Poland - Belgium

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Introduction

Breast cancer is the most frequent cancer to occur in women of the majority of developed world countries. This is the case both of European countries, characteristic of high living standards, and the developing ones. An increase in the number of patients suffering from breast cancers is presently observed (Emons and Luiten, 2002; Plesnicar et al., 2010; Bosetti et al., 2012; Yousuf et al., 2012; Avci et al., 2014). Accordingly, breast cancer is the most frequently noted tumor in women in Poland. It makes about 17.00% of disease cases and 14.00% of deaths induced by cancerous diseases. The results of EUROCARE-4 research imply that the difference in percentage of 5-year survivals in women suffering from breast cancer in Poland and other countries of the European Union has been lately reduced. One among twelve women of the developed countries can be expected to get sick of breast cancer, and one among twenty to die for this reason. According to the data released by Cancer Research UK, the occurrence of breast cancer among 100,000 women amounts to 145.2 in Belgium and 66.3 in Poland. It is to be noted, however, that among all women suffering from malignant tumors, every fourth dies from breast cancer (Cancer Research UK, 2008).

Preventive measures are vital against the incidence of breast cancer. In many countries informative actions have been undertaken since some years to extend women's knowledge on the issue (McTiernan et al., 2008; Avci et al., 2014). In Poland, as well as in the entire European Union, National Program against Cancer has been considered the most effective instrument of reducing the incidence and improving the results of malignant cancer treatment. These programs are financed by government means, and the main activity conducted within their framework also includes beside population screening method, purchase of modern diagnosing-therapeutic equipment educational actions directed to the population and the medical staff (Jurczak, 2005).

Measures taken against breast cancer by early detection of disease symptoms stand for an essential factor to reduce the number of sick women. The instruction of students of breast cancer prevention plays a vital role in education of future midwives and their professional activity (Avci et al., 2014). By reinforcing appropriate standards of healthy lifestyle and giving a right example to follow in one's attitude, the medical staff takes an active part in the early phase of health promotion (Directive 2005/36/EC; Demireloz et al., 2010; Rosmawati, 2010). Being an educator in the field of the prevention of breast cancer is

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one of midwives tasks (Act in the Matter of Occupation of Nurse and Midwife, 2011; Yousuf et al., 2012).

In his respect, the midwife's task is mainly to fulfill duties dealing with woman's health promotion at different stages of her life, gynecological disease promotion, care of gynecologically sick at different stages of disease, and in all care protection units, in scientific, life and labor environment.

Hence the document "European WHO Strategy" has acquired a particular significance in the process of education of Polish and Belgian midwives. According to its precepts, the teaching program must be based on the progress the graduate is to incarnate. To say it in other words, the midwife's competence, skills, capacity, and attitudes should enable her performing the tasks determined by her professional status. European Union Directives state the duration of the instruction and subjects to deal with. According to Directives 2005/36/E and 80/155/ EEC, education ending with a diploma confirming qualifications for midwifery profession should embody two parts: the first concerning theoretical and technical instruction, and the second concerning practical and clinical training (Directive 2005/36/EC; Council Directive 80/155/EEC).

Practical and clinical training also produces an important effect on individual knowledge and prevention against breast cancer, and midwife's skills of breast self-examination (Avci et al., 2014). It should be pointed out here the necessity to have a midwifery student take care of women displaying pathological and gynecological symptoms. Professional training of a midwife is carried out in a differentiated way in European countries, taking account of local traditions and realities (Emons and Luiten, 2002).

The tasks of a Belgian midwife are outlined in the document Beroepsprofiel van der vroedvrouw, presented as midwife's professional profile, which deals with midwife's defin-ition according to ICM, FIGO and WHO, as well as regulations of article 4 of directive 4 80/155/ EEC. Here the document lays a particular emphasis on the midwife's role in disease prevention of second and third degrees (Emons and Luiten, 2002).

Midwifery education in Belgium is practiced within two systems: Flemish System three-year cycle, in which midwifery is taught from the beginning, and the Walloon four-year cycle where the first year is dedicated to nursery studies; the second one of a mixed type to nursery-midwifery training; and where two last years of studies are devoted to midwifery. Accordingly, practical instruction is the very basis of the professional training. Nonetheless instruction programs hardly take account of subjects dealing with reproductive organ and breast cancers (Emons and Luiten, 2002).

In Poland midwifery instruction is carried out on two-degree levels of studies: 3-year license course, and two-year master studies. Educational programs pertaining to reproductive organ and breast cancers account for the results to achieve in education both as to personal knowledge and skills (Dz.U.2012.631). Polish educational system aims at preparing midwives for a professional, competent and safe professional activity, already from the beginning. It also enables the students to learn and cling to changes undergoing in the surrounding in order to have them acquire and deepen knowledge necessary for practicing a definite specialized activity or that exercised at the moment.

The research project aimed at presenting the midwifery students' self-assessment of the preparation to be the educator in the field of the prevention of breast cancer.

Principles of informed consent confidentiality were observed during data collection. The students were informed as to the aim and methodology of the study and they were assured that their participation or non-participation would in no way affect their academic Progress. The study was approved by Bioethical Committee of the Polish Midwives' Association.

Materials and Methods

Investigations were carried out at Medical University of Lublin in Poland, and Katolieke Hogeschool of Kortrijk in Belgium, after getting the approval of Bioethical Commission of the Head Office of Polish Midwives' Society. The project involved in total 155 midwifery students, made up of 95 from Poland, and 60 from Belgium.

The project used a novel questionnaire elaborated following the literature analysis of the issue. Prior to completing it, each inquired student was acquainted with the instructions of the questionnaire, and informed on the objective of the research. Participation in the research was facultative and anonymous.

Information collected in the investigations was further subjected to computational analysis using electronic calculation technique. The statistical unit was the responder mid-wifery student providing answers to the questionnaire used in a research tool. Relations between opposing characteristics were tested with Chi-square (χ^2) test for independent traits. To assess the dependence relation between the examined variables C. Person's corrected coef-ficient was used. Data base and statistics were carried out with computer software STATISTICA 9.0 (StatSoftPoland). Descriptive statistics and cross tabulations were used to characterize the data.

Results

Above a half of the interrogated Polish students aged 18-20 years (52.0%), and the others 21-22 years (45.0%). There came only 3 women from the age section of above 22 years, which makes the lowest number of the inquired (3.0%). A notable majority (90.0%) of Belgian students was 18-20 years old, while 5 women made an age section of 21-22 years, which makes 8.00% of the whole investigated group. Students of Kortrijk of above 22 years were the least numerous group (2.0%).

The opinion of Polish and Belgian inquired students on their knowledge of breast cancer prevention is presented in table 1. The investigations showed a statistical correlation between the country of residence and self-estimation of their knowledge of the issue ($p<0.0001$). In the inquired Polish students, the most numerous group (44.21%) were those who admitted that their knowledge had to be

completed, while the respective Belgian group was almost three times smaller (15.0%). A majority of the inquired midwifery Belgian students (70.0%), and an almost three times smaller group (17.9%) of Polish students conceded having a defective knowledge of prevention against breast cancer. Meanwhile a-bove one third (36.8%) of Polish inquired students, contrary to one Belgian (1.7%) only, proved to have a very good knowledge of the question. Conversely, only one Polish student admitted the total lack of knowledge in this respect, but surprisingly eight students (13.3%) on the Belgian side.

An outstanding majority (91.6%) of Polish interrogated students, and three fifths (60.0%) of the investigated Belgian claim that have the competence of performinga breast examination. Yet, two fifths (40.0%) of the interrogated KATHO, and almost five times smaller group (8.4%) of students of Medical University of Lublin conceded having no knowledge in this respect (p<0.0001) (Table 2).

A vast majority (90.5%) of the interrogated Polish students admitted that not each change in the thoracic area entails formation of a cancerous process, while this view is shared by six times smaller group (15.0%) of the inquired Belgium. However, above three fifths (65.0%) of those students concede not to know whether each lesion may have a cancerous nature, contrary to one Polish student (1.1%) only. Discrepancies observed between the investigated students appeared statistically significant (p<0.0001) (Table 3).

Knowledge of the breast area by the inquired students on selected factors to increase the incidence of the breast cancer is presented in Table 4. The investigations showed an important statistical correlation between the country of origin and individual knowledge on the effect of the diet on a greater risk of incidence of breast cancer (p<0.0001). If an overwhelming majority (92.63%) of the interrogated Polish students, and two thirds (66.7%) of their Belgian counterparts, ventured an opinion that diet might have an effect on a greater risk of breast cancer, an almost six times larger (25.0%) Belgian student group than the Polish one (4.2%) considered the diet not to exert such an impact (Table 4).

The investigations we carried out showed almost four fifths (77.4%) of the ques-tioned Belgian and Polish students to consider breast cancer as a hormone-dependent tumor (Table 4). Almost every eighth inquired student (12.9%) disagreed with that view; still this group included almost nine times more students from Belgium (28.3%) than from Poland (3.2%) (p<0.0001).

Our studies found a statistical correlation between the kind of attended school and students' knowledge on the effects of using contraceptives on the incidence of breast cancer (p<0.000001). According to 93.7% of the inquired Poles and 36.7% Belgians, application of oral contraception might favor the evolution of a cancerous disease. This opinion was rejected by above two fifths (46.7%) of the inquired Belgian and hardly any (3.2%) Polish students. True, rare individual Polish students (3.2%) admitted lack of knowledge on the issue, but this makes an almost five times larger group (16.7%) of Belgian students (Table 4).

Table 1. The Inquired Students' Opinion on their knowledge of Breast Cancer Prevention

	Knowledge of breast cancer prevention					
	Poland		Belgium		In total	
	No.	%	No.	%	No.	%
My knowledge of the subject is very good	35	36.84	1	1.67	36	23.23
My knowledge of the subject is good	42	44.21	9	15.00	51	32.90
My knowledge is incomplete	17	17.89	42	70.00	59	38.06
I do not have knowledge of the subject	1	1.05	8	13.33	9	5.81
In total	95	100.00	60	100.00	155	100.00

χ^2=64.908; p<0.0001; C=0.54

Table 2. The Ability of Performing Examination of Breast

	The ability of performing examination of breast					
	Poland		Belgium		In total	
	No.	%	No.	%	No.	%
Yes	87	91.58	36	60.00	123	79.35
No	8	8.42	24	40.00	32	20.65
In total	95	100.00	60	100.00	155	100.00

χ^2=22.384; p<0.000001; C=0.36

Table 3. Knowledge of the Inquired Students on Lesions in Thoracic Gland likely to Indicate Evolution of the Cancerous Process

	Lesions in breast area and evolution of the cancerous process					
	Poland		Belgium		In total	
	No.	%	No.	%	No.	%
Yes	8	842	12	20.00	20	12.90
No	86	90.53	9	15.00	95	61.29
Do not know	1	1.05	39	65.00	40	25.81
In total	95	100.00	60	100.00	155	100.00

χ^2 =22.384; p<0.000001; C=0.36

Table 4. Students' Knowledge on Selected Factors to Increase the Risk of Breast Cancers

	Poland		Belgium		In total	
	No.	%	No.	%	No.	%
The way of feeding and a greater incidence of breast cancer[a]						
Yes	88	92.63	40	66.67	128	82.58
No	4	4.21	15	25.00	19	12.26
Do not know	3	3.16	5	8.33	8	5.16
In total	95	100.00	60	100.00	155	100.00
Breast cancerranked among hormone-dependent cancer[b]						
Yes	85	89.47	35	58.33	120	77.42
No	3	3.16	17	28.33	20	12.90
Do not know	7	7.37	8	13.33	15	9.68
In total	95	100.00	60	100.00	155	100.00
The effect of oral contraception on development of breast cancer[c]						
Yes	89	93.68	22	36.67	111	71.61
No	3	3.16	28	46.67	31	20.00
Do not know	3	3.16	10	16.67	13	8.39
In total	95	100.00	60	100.00	155	100.00
Breast feeding as a protective measure against breast cancer[d]						
Yes	90	94.74	43	71.67	133	85.81
No	4	4.21	10	16.67	14	9.03
Do not know	1	1.05	7	11.67	8	5.16
In total	95	100.00	60	100.00	155	100.00

[a]χ^2=17.875; p<0.0001; C=0.32; [b]χ^2=24.021; p<0.0001; C=0.37; [c]χ^2=59.502; p<0.000001; C=0.53; [d]χ^2=16.624; p<0.001; C=0.31

The majority (94.72%) of Polish and two thirds (71.67%) of young Belgian women thought breast feeding prevented from breast cancer. However, following rare Polish (4.21%) and for almost four times larger group (16.67%) of the interrogated Belgians, breast feeding is no protective measure against breast cancer ($p<0.001$) (Table 4).

Discussion

Presently a greater incidence of breast cancer is noted, and protection measures against his disease via early detection of symptoms are considered an essential factor to bring down the number of women suffering from this disease. Prevention against it by controlling risk factors is a task of the medical staff, and on each stage of health protection, education comes to play a significant role. This involves making population aware of the relation between woman's heath, her lifestyle, and physico-social surrounding. Medical staff should prevent disease through education about risk factors (The National Program for Fight Cancer, 2005; Khan et al., 2010; Menvielle et al., 2011; Fotedar et al., 2013; Avci et al., 2014).

Heath education entails mainly information activity promoting directly convictions, motivations and capacities, and therefore healthy personal attitudes that should make such a behavior real. This does not necessarily mean that all people hazard a cancer in exactly the same way, including breast cancer. And this is so, since many factors determine a greater or minor incidence of this tumor (Montazeri et al., 2008; Khan et al., 2010; Pudrovska and Anikputa, 2012). Interestingly, the most numerous (44.2%) in Polish students were those who appeared well acquainted with prevention against breast cancer; yet this knowledge is still to be completed, contrary to the majority of Belgians (70.0%) admitting their knowledge on the question to remain insufficient.

Breast cancer ranks among cancers of a long preclinical phase. Hence midwives should have knowledge and ability to perform breast examination. 91.6% of the inquired students of Lublin and 60.0% of Kortrijk displayed this knowledge. The medical staff ought to share it with women and encourage those last to make their self-examinations and have regularly performed their screening tests (Avci et al., 2014). Early detection of cancerous changes is vital for the success of treatment (Akhtari-Zavare et al., 2013; Fotedar et al., 2013).

The anatomic structure, structure and lesions of the breast make the very basis of knowledge a midwife should be familiar with. The majority of Polish (90.5%), and only 15.00% of Belgian students advocate that lesion in the thoracic area does not necessarily entail originated cancerous process.

The spread of risk factors, such as application of hormonal preparations, reduction of the number of children, short time of breast feeding, abnormal alimentation, little physical activity, and obesity are considered to cause breast cancer in all countries of the world. The idea to modify at least three of these factors, i.e. alimentation, diet habits, physical activity, struggle of obesity makes it possible to reduce the incidence of breast cancer (Monninkhof et al., 2007; Cummings et al., 2009; Khan et al., 2010).

Rich in fats diet is an essential factor linked to the lifestyle that may enhance a risk of breast cancer. A greater risk of incidence was observed in women with the triad of symptoms: obesity, arterial hypertension, diabetes. Conversely, a diet rich in fruit and vegetables, as well as cereal products reduce the risk of breast cancer in post-menopausal period of about 20.0% (Chlebowski et al., 2006; Monninkhof et al., 2007; Cleary and Grossmann, 2009; Khan et al., 2010; Linos et al., 2010). An overwhelming majority of students (92.6%) coming from Poland, and above a half from Belgium (66.7%) conceive the way of alimentation as an in-creased predicator of breast cancer.

As said above, breast cancer ranks among hormone-dependent cancers, and this opinion is shared by above three fourths (77.4%) of the inquired students. The danger of generation of breast cancer is increased in case of extended exposition to ovular hormones. Woman's hormonal system exerts a notable effect on breast cancer, the course of treatment, and the results of some therapeutical methods. Therefore, hormone characteristics, as well as their impact on some physiological phenomena, such as menstruation, pregnancy or lactation become very important (Freund et al., 2005; Cummings et al., 2009; Ma et al., 2010; Faupel-Badger et al., 2013).

Contraceptive oral pills (containing mainly estrogens) are believed to produce more often an effect of factor to ease and accelerate the progress of the disease than one to bring forth genetic mutations and induce the disease. This risk mainly concerns women of high risk group; f. ex. genetically loaded ones (Burkman et al., 2004; Hunter et al., 2010). The analysis of our research showed remarkable differences between Polish and Belgian students in individual knowledge on the effect of oral contraception to bring forth a breast cancer ($p<0.000001$). The majority of the interrogated students of Medical University of Lublin (93.7%) favor an opinion that oral contraception can give rise to breast cancer, which did not share a half smaller group (46.7%) of KATHO students. The research showed a little higher risk for a cancerous disease to appear in women using oral contraception (Hunter et al., 2010).

The research suggests the breast feeding to be one of the simplest and at the same time an effective way of protection against breast cancer; however, no sufficiently valid proof of a protective effect of this factor has been found so far (Collaborative Group on Hormonal Factors in Breast Cancer, 2002; Lodha et al., 2011; do Carmo França-Botelho et al., 2012; Faupel-Badger et al., 2013). In a way, breast feeding may protect against breast cancer; still pregnancy proved itself to have a notably more protective effect (Freund et al., 2005; Ma et al., 2010; Kobayashi et al., 2012). The majority of the questioned Poles (94.7%), and above two thirds of Belgian students (71.7%) considers breast feeding as a protective means against the development of breast cancer.

The role of a midwife entails first of all promoting healthy lifestyle and preparation to self-observation in all periods of life to detect early and get rid of all risk factors of cancerous disease (Kyrkjebø and Hage, 2005; Plesnicar

et al., 2010; Harhra and Basaleem, 2012).

Women's education is a priority task for gynecologists and medical staff in the opinion of the Polish Gynecological Society, which emphasized the importance of education, in the Recommendation on the prevention and early diagnosis of changes in the mammary gland (Recommendation of the Board of the Polish Gynaecological Society on the prevention and early diagnosis of changes in the mammary gland, 2005).

In conclusion, the research findings indicated that: *i*) The students' knowledge on prevention against breast cancer is unsatisfactory; *ii*) The students' place of residence determines their self-estimation of personal knowledge of breast cancer prevention and diagnosing methods to assess the incidence of the disease this knowledge is better estimated by the students of Lublin; *iii*) Better self-estimation in the students of Lublin of their personal knowledge on factors rising the risk of breast cancer, such as alimentation method, application of oral contraceptives and breast feeding than in Belgian students.

Deepening of the knowledge on prevention against breast cancer enjoys an important status among the midwife's professional duties; therefore it seems justified to intensify the theoretical knowledge on the issue in educational programs for students in midwifery.

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