Knowledge, Attitudes and Barriers Towards Breast Cancer Health Education Among Iraqi Community Pharmacists

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Abstract
With the increasing prevalence of breast cancer among female internationally, occupies about 25% of all cases of cancer, with a measured 1.57 million up to date cases in 2012. Breast cancer has turn a most warning to health of female in Iraq, where it is the major cause of death among women after cardiovascular diseases, with a mortality rate of 23% related cancer. Recently there is a crucial requirement to include community pharmacists in health elevation activities to support awareness and early diagnosis of cancer, specially breast cancer. The aim of this study is to assess knowledge, attitude and perceived barriers amongst Iraqi community pharmacists towards health promotion of breast cancer. This study is cross sectional research. A questionnaire was given to pharmacists. The questionnaire comprised from four parts: community pharmacist's demographics and description of practice; knowledge of signs, symptoms and risk causes; knowledge around breast cancer screening and perceived barriers.300 questionnaires were finished and returned by Iraqi community pharmacists. Mean score of knowledge and screening of breast cancer was 7.9 ± 1.86 and 1.69± 0.33 points respectively, categorizing the overall knowledge and screening of breast cancer among participants as poor level, while mean score for pharmacist attitude was 26.44± 3.86 points, categorizing the overall attitude as favorable. Lack of time was perceived by a great proportion of pharmacists (68.2%) as a major barrier to providing patient education.
Keywords: Breast cancer, Knowledge, Screening, Attitude, Perceived, Community pharmacy.

دراسة المعرفة والمواقف والحواجز لدى صيادلة المجتمع العراقيين حول سرطان الثدي
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الخلاصة
مع تزايد انتشار سرطان الثدي بين النساء على الصعيد العالمي، حيث يشكل حوالي25% من جميع حالات السرطان، حيث سجلت ١.٥٧ مليون حالة حتى الآن في عام ٢٠١٢. وقد شكل سرطان الثدي تهديداً كبيراً لصحة النساء في العراق، حيث يعتبر السبب الرئيسي للوفاة بين النساء بعد أمراض القلب والاوعية الدموية، بمعدل وفيات ٢٣٪ من حالات السرطان. في الآونة الأخيرة هناك حاجة ملحة لإدراج صيادلة المجتمع لزيادة الوعي الصحي ولدعم وتشخيص السرطان مبكرا، وخاصة سرطان الثدي. ان الهدف من هذه الدراسة هو لتقييم معرفة وخبرة صيادلة المجتمع العراقيين والمعوقات التي تواجههم حول سرطان الثدي. هذه الدراسة عبارة عن بحوث مقطعية. حيث قدم الاستبيان للصيادلة. ويتألف الاستبيان من أربعة أجزاء: الوصف السكاني للمجتمع الصيدلي ووصف الممارسات المهنية؛ معرفة العلامات والأعراض وأسباب الخطر؛ والمعرفة حول فحص سرطان الثدي والمعوقات المتوقعة. وقد تم الانتهاء من الاستبيانات وإعادتها بعد ذلك من قبل صيادلة المجتمع العراقي. وكان متوسط درجة معرفة وفحص سرطان الثدي ٧.٩ ± ١.٨٦ و١.٦٩ ± ٠.٣٣ نقطة على التوالي، حيث تم تصنيف المعرفة الشاملة وفحص سرطان الثدي بين المشاركين على أنها ذو مستوى ضعيف، في حين كان متوسط درجة موقف الصيدلي ٢٦.٤٤ ± ٣.٨٦ نقطة، حيث تم تصنيفها على انها درجة مقبولة. كان ينظر إلى ضياع جزء كبير من الوقت من قبل نسبة كبيرة من الصيادلة (٦٨.٢٪) كحاجز رئيسي امام تعليم المريض.
الكلمات المفتاحية:سرطان الثدي،المعرفة ، الفحص ، الموقف ، الادراك ، صيادلة المجتمع .

Introduction
Breast cancer is the most frequent cancer in the midst of women worldwide, occupies about 25% of all cases of cancer, with a measured 1.57 million up to date cases in 2012 [1]. Breast cancer has turn a most warning to health of female in Iraq , where it is the major cause of death among women after cardiovascular system diseases, with a mortality rate of 23% related cancer [1-4]. Early diagnosis through screening plays a vital role in reducing mortality and morbidity of breast cancer [5,6]. Localized cancer diagnosis enhance survival, restore the breast, and declines the recurrence rate [7]. The growing burden of breast cancer in the Eastern Mediterranean Region (EMR) in general, and Iraq in specially, focus the critical need to found full national control programs of cancer.

Of the registered methods to breast cancer control, as planned by the World Health Organization (WHO), early diagnosis and screening suggestion the immediate goal for a decline in mortality [8]. The risk factors that may have a relation with the occurrence of breast cancer are late age menopause, young age at menarche, late age at first live birth, use of oral contraceptives, hormone replacement therapy, high weight, extreme alcohol intake, and radiation exposure [9]. Healthcare professionals are important sponsors in helping breast cancer awareness amongst their publics [10,11]. Recently, the range of practice of pharmacy had developed to a patient-focused method rather than a product motivated method, allowing pharmacists to enlarge health services to patient-oriented actions in its place of traditional drug services [12,13]. Previous reports shown that community pharmacists are probable providers to health promotion actions attractive into attention their accessibility and reliability [12-15]. As readily available health care specialists, pharmacists can evaluate breast cancer risk and possibly advantage large numbers of female, irrespective of age. Pharmacists, in combination with physicians, can offer knowledge to permit women to create educated choices about screening and prevention [16]. Pharmacists can tell women of their breast cancer threat and let them to work collected with all participants of the health care group to make balanced choices. Patient teaching relating to breast cancer awareness and diagnosis through Breast self-examination (BSE), Clinical breast examination (CBE), and mammography is significant [5,17,18,19]. Nevertheless, inadequate number of texts evaluated the role of community pharmacists in educating public awareness about cancer disease, highlighting on early diagnosis and screening [20-22]. Thus, there is a crucial requirement to include community pharmacists in health elevation activities to support awareness and early diagnosis of cancer, specially breast cancer. To reach this, it is necessary for community pharmacists to have widespread knowledge, progressive attitudes, willingness and essential tools to deliver specialized pharmaceutical care services [12,20,23,24]. The aim of this study is to assess knowledge, attitude and perceived barriers amongst Iraqi community pharmacists towards health promotion of breast cancer.

Methods

The study was conducted over an 8-month period from December 2016 to July 2017. Of 375 questionnaires given to Iraqi pharmacists, 300 questionnaires were finished and returned, resulting a response rate of 80%. A descriptive cross-sectional research design was applied to this study. A structured questionnaire was established and modified from questionnaires used in previous studies [25-27]. The study was approved by scientific committee of college of pharmacy – Baghdad University. Suitability sampling was taken to employee pharmacists in multiple geographical areas in Baghdad City (Capital of Iraq). Participants who have bachelor's degree in pharmacy or a higher educational degree were permitted to contribute in this research. This method is thought to reach a great answer rate of contribution. The questionnaire was established in English language and was given to pharmacists. The survey firstly evaluated by use Face and content validity by different faculty memberships at college of pharmacy – Baghdad University. Significance and survey questions clarity were further assessed through a pilot study (n = 30). Feedback and comments by the pilot group resulted in minor edits to the survey tool, which was considered in order to increase clarity and understanding of survey items. The sample data from pilot study were excluded from the final study. The study presented composed of 21 questions to be finished in 15–20 minute. The questionnaire comprised from four parts: (1) community pharmacist's demographics and description of practice (2) knowledge around breast cancer signs, symptoms and risk causes; (3) knowledge around breast cancer screening and (4) perceived barriers to supporting breast cancer awareness and providing pharmaceutical care in community pharmacy locations. Pharmacists answered to a 15-item scale around breast cancer risk factors in addition to signs and symptoms of the cancer. Answers fluctuated between 'Correct', 'Incorrect' and 'I don't know'. Then, each 'Correct' answer was counted 1 point and each 'Incorrect' and 'I don't know' answers were both counted zero (0) point. The total level ranged from 0 to 15 points on overall knowledge of breast cancer. Pharmacists with level range 0–8 were measured to have poor level of knowledge of breast cancer risk causes and symptoms, while those with 9–15 points were considered to have an acceptable level of knowledge. Knowledge around breast cancer screening was evaluated over seven different questions established by researchers based on recently published guidelines and recommendations by American Cancer Society (ACS) for screening and early detection of cancer [27]. The total level ranged 0–7 points. In the same way, answers to screening knowledge questions were spread between 'Correct', 'Incorrect' and 'I don't know'. Knowledge of screening was divided into 'poor' if participants counted (0–3) points or 'satisfactory' if the level reached between 4 and 7 points. Attitudes to breast cancer screening were calculated by a 7-item Likert type attitudinal scale with five-point answers ranging from strongly agree to strongly disagree. The total attitude level ranged from 0 to 28 points, where higher values suggest more satisfactory attitude amongst participants. In this study, the internal reliability

coefficient (Cronbach's a) measured for attitude items was 0.734. Analysis of data was done using IBM SPSS statistical package (IBM Corp. Version 21.0. Armonk, NY, USA). By using descriptive statistics to report study variables. Pearson's chi-square (v2) test of independence was used to exam for correlations between categorical variables. Bivariate correlation analysis was done to test for correlations between continuous variables. Variances were considered to be statistically significant at P< 0.05.

Results

Demographics and description of practice

Demographics and practice features of community pharmacists are represented in Table 1. The average age of answering pharmacists was 29.27 ± 3.165 years (median = 28.50 years) with a range from 24 to 41 years. Majority of participants were male pharmacists (54%) and were under 30 years (63.7%). 235 (78.3%) of pharmacists have bachelor degree while 65 of them (21.7%) have postgraduate degree. Nearly half of the pharmacists surveyed [148 pharmacists (49.3 %)] stated that pharmacy technicians were one at one shift of work. Pharmacists' view about oncology education in the undergraduate degree presented that [114 pharmacists (38.0%)] agreed to receive adequate education, while 68 of pharmacists (22.7%) disagreed and 118 of pharmacists (39.3%) providing a neutral response. 170 (56.7%) of pharmacists answered yes around the oral anticancer agents that dispensed in the community pharmacy while 128 (42.7%) and 2 (0.7%) answered no and I don't know respectively.

Knowledge about breast cancer risk factors and early symptoms among community pharmacists:

Most of community pharmacists [208 pharmacists (69.3%)] agreed to the fact that breast cancer is the most usually diagnosed type of cancer among women worldwide. When asked if breast cancer should not be of concern for patient younger than 40 years, 152 (50.7%) of pharmacists agreed that this statement was incorrect. 171 (57.0%) of pharmacists agreed that approximately 50--70 % of patients with primary or metastatic breast cancer have hormone receptor --positive cancer. Regarding the initial signs and symptoms of breast cancer, more than half of pharmacists [169 pharmacists (56.3%)] agreed that a painless lump is the initial sign. Questioning about findings in advanced breast cancer 174 (58.0%) of respondents agreed that pain, nipple discharge and skin edema are common findings in this stage. Additional results are demonstrated in Table 2. In order to evaluate the knowledge of prompting factors to breast cancer risk, responses were assessed in form of level out of 15 points. Mean score was 7.9 ± 1.86 points (median = 8, range 1–15), categorizing

the overall knowledge of breast cancer among participants as poor level of knowledge of breast cancer risk factors and symptoms. Overall assessment of pharmacists' knowledge shown that half the pharmacists (50%) had poor knowledge, while the other half had satisfactory level of knowledge of breast cancer. Nearly 172 pharmacists (57.3%) agreed that average-risk women should consider mammography at age of 40 and yearly thereafter. The overall mean score for pharmacists' knowledge of screening strategies was 1.69± 0.33 out of a maximum score of 7 points (median = 2, range 0–7) categorizing the knowledge as poor. Additional screening data are shown in Table 3.

Description of attitudes towards breast cancer health promotion among community pharmacists

Community pharmacist's attitude about involvement in breast cancer health activities is represented in Table 4. 117 of pharmacists (39.0%) strongly agreed that pharmacists should be involved in breast cancer health promotion in community pharmacy settings. In addition, more than 200 pharmacists either agreed or strongly agreed that it is the pharmacist's responsibility to provide breast cancer counselling to patients. Mean score for pharmacist attitude was 26.44± 3.86 out of a maximum score of 28 points (median = 27, range 4–28), categorizing the overall attitude as favorable.

Perceived barriers towards breast cancer health promotion among community pharmacists

Perceived barriers to breast cancer health activities amongst community pharmacists are shown in Figure 1. Lack of time was perceived by a great proportion of pharmacists (68.2%) as a major barrier to providing patient education. Other greatly documented barriers were lack of skills (65.2%), lack of privacy (64.9%) and lack of educational materials (60.3%). A small percentage of pharmacists (30.5%) stated lack of direct profit as a barrier to involvement in patient education.

Relationship of demographics and characteristics of practice with knowledge and attitudes towards breast cancer health promotion among community pharmacists

Bivariate correlation analysis of continuous variables (represented in table 5) showed that age had no significant association with overall knowledge of breast cancer (r = - 0.021, P = 0.360), knowledge of breast cancer screening (r = -0.098, P = 0.045) or attitude (r = - 0.010, P = 0.434) among pharmacists. Instead, there was a significant positive association between pharmacist's knowledge of breast cancer and knowledge of breast cancer screening (r = 0.285, P = 0.000).

Table (1):Demographic and practice characteristics (N = 300)

Characteristic	n (%)
Age (years) <30 30—40 40—50 >50	191 (63.7) 104 (35.6) 2 (.7) -------
Gender Male Female	162 (54.0) 138 (46.0)
Marital status of pharmacist single Married Divorced Widowed	148 (49.3) 146 (48.7) 5 (1.7) 1 (0.3)
Education of pharmacist Bachelor Postgraduate Degree	235 (78.3) 65 (21.7)
Place of graduation Local Public Private	83 (27.7) 172 (57.3) 45 (15.0)
Number of years of practice <3 3—5 6—10 11—20 >20	143 (47.7)) 95 (31.6) 61 (20.3) 1 (.3)
Types of pharmacy Chain Independent	64 (21.3) 236 (78.7)
Description of practice Staff pharmacist Pharmacist in charge Owner	79 (26.3) 90 (30.0) 131 (43.7)

Continued table (1)

Employment Status Full time Part time	54 (18.0) 246 (82.0)
Average number of adult patients seen in pharmacy in one shift <20 20—59 60—80 >80	 64 (21.3) 177 (59) 52 (17.3) 7 (2.3)
Percentage of female patients seen in the pharmacy at one shift <25 25—50 51—75 >75	 100 (33.3) 168 (56) 32 (10.7) ----------
Number of pharmacists working in the pharmacy at one shift 1 2 3	 227 (75.7) 61 (20.3) 12 (4.0)
Number of pharmacy technicians in the pharmacy at any one shift None 1 2 >2	 91 (30.3) 148 (49.3) 49 (16.3) 12 (4.0)
Dispensing of oral anticancer agents in the community pharmacy Yes No I don't know	 170 (56.7) 128 (42.7) 2 (.7)
Family history of cancer disease Yes No I don't know	 97 (32.3) 176 (58.7) 27 (9.0)
Received educate oncology education in the undergraduate degree Agree Disagree Neutral	 114 (38.0) 68 (22.7) 118 (39.3)

values are expressed as *n* (%).

Table (2) :Knowledge of breast cancer signs and symptoms among participants (N =300)

Breast cancer knowledge item	n (%)		
	Correct	Incorrect	I don't know
Breast cancer is the commonly diagnosed form of cancer among women worldwide (correct)	208 (69.3)	54 (18.0)	38 (12.7)
Breast cancer should not be of concern for patients younger than 40 of age (Incorrect)	121 (40.3)	152 (50.7)	27 (9.0)
Approximately 50--70 % of patients with primary or metastatic breast cancer have hormone receptor --positive tumor (correct)	171 (57.0)	77 (25.7)	52 (17.3)
A painless lump is the initial sign of breast cancer in most women (correct)	169 (56.3)	80 (26.70	51 (17.0)
Pain , nipple discharge , retraction , or dimpling , skin edema , redness , or warmth are common findings in breast cancer patients advanced stages (correct)	174 (58.0)	82 (27.3)	44 (14.7)

Table (3):Participants' performance on breast cancer screening guidelines (N = 300)

Breast cancer screening item	n (%)		
	Correct	Incorrect	I don't know
Women should be counseled about the importance to start breast self-examination (BSE) starting at 30 years of age (Incorrect)	129 (43.0)	135 (45.0)	36 (12.0)
If a women chooses to do breast self-examination (BSE) , it is recommended to be done on monthly basis (Correct)	166 (55.3)	94 (31.3)	40 (13.3)
Limitation of BSE include the possibility of a false-- positive result (Correct)	163 (54.3)	86 (28.7)	51 (17.0)
A symptomatic women aged 40 years or older should not receive CBE as part of their periodic health examination (Correct)	136 (45.3)	101 (33.7)	63 (21.0)
Average-- risk women should begin annual mammography at of 40 years (correct)	172 (57.3)	82 (27.3)	46 (15.3)
There is no need to continue mammography after 50 years of age as a regular tool for the early detection of breast cancer (Incorrect)	98 (32.7)	142 (47.3)	60 (20.0)
Mammography will not detect all breast cancers , and some breast cancers detected with mammography may still have a poor prognosis (Correct)	139 (46.3)	104 (34.7)	57 (19.0)

values are expressed as *n* (%).

Table (4) :Attitude of pharmacists regarding breast cancer health promotion (N = 300)

Statement	n (%)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Pharmacists should be involved in breast cancer health promotion in the pharmacy	117 (39.0)	140 (46.7)	22 (7.3)	3 (1.0)	18 (6.0)
It is my responsibility as a pharmacist to provide breast cancer counseling , and this can improve my professional status and satisfaction	102 (34.0)	127 (42.3)	36 (12.0)	19 (6.3)	16 (5.3)
As a community pharmacist, I feel confident and prepared to provide breast cancer health promotion	94 (31.3)	138 (46.0)	31 (10.3)	20 (6.7)	17 (5.7)
Distributing breast cancer education materials is important in community pharmacy settings	77 (25.7)	137 (45.7)	33 (11.0)	34 (11.3)	19 (6.3)
It is important to discuss breast cancer with my female patients to encourage breast cancer early screening and detection	97 (32.3)	117 (39.0)	27 (9.0)	25 (8.3)	34 (11.3)
Patients demand to get counseling on breast cancer screening and early detection from the community pharmacist	76 (25.3)	81 (27.0)	53 (17.7)	46 (15.3)	44 (14.7)
Patients appreciate efforts of community pharmacists when counselled about breast cancer	120 (40.0)	76 (25.3)	33 (11.0)	35 (11.7)	36 (12.0)

values are expressed as *n* (%).

Table (5):Correlation analysis for continuous variables (N = 300)

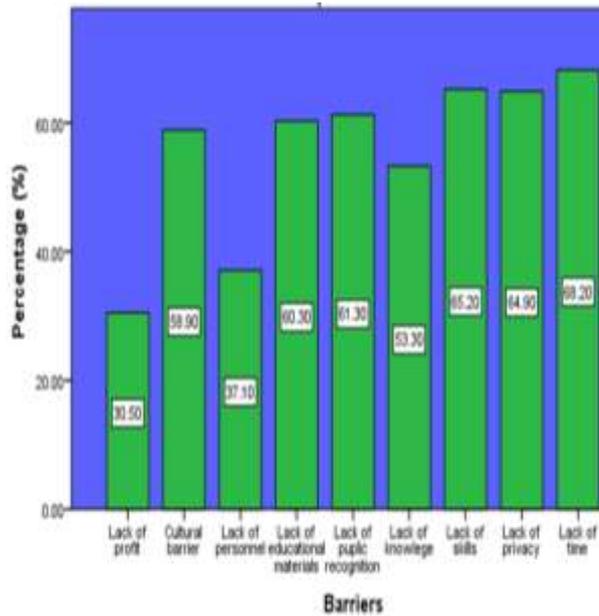| Age mean of pharmacists (years)	Knowledge mean of breast cancer			Knowledge mean of screening			Attitude mean of pharmacists		
29.27	Mean	r	P	Mean	r	P	Mean	r	P
	7.8967	- 0.021	0.360	1.6905	-0.098	0.045	26.4400	- 0.010	0.434
--------- ----------	Mean of knowledge			Mean of screening				r	P
	7.8967			1.6905				0.285	0.000

Figure (1):Barriers for breast cancer health as stated by community pharmacists. Bars represent the percentage of community pharmacists agreeing to the barriers listed on the X-axis (N = 300).

Discussion

The purposes of this study were to evaluate knowledge, attitudes and barriers of community pharmacists to breast cancer health educational services in Iraq. The findings key of this study showed that the most of community pharmacists lack enough knowledge of breast cancer and new screening references. Numerous reports from developing countries showed that breast cancer level of awareness about breast cancer and performance of screening was little amongst female population [28,29]. Pharmacists are reachable healthcare specialists who are in direct contact with the public for long hours every day. Recently, pharmacists are suitable progressively involved in a range of health care screenings and protecting services [12, 13, 30]. The consequences of this study established that community pharmacists in Iraq hope to take an important role in breast cancer health promotion amongst the public. Low level of knowledge of breast cancer screening references amongst community pharmacists in Iraq can be described, in part, by lacking occurrence of continuous education plans and insufficient undergraduate teaching. Though, these results established a vital need for continuing education plans intended for community pharmacists in order to be well-prepared to offer active breast cancer health education. It is also essential to study and expand oncology education in undergraduate pharmacy developments to attain the aims of improved health promotion roles for graduating pharmacists. In our study the overall attitude considered as favorable where community pharmacists perceived breast cancer counselling as a responsibility and a vital subject to discuss with their female patients. It is important to increase the community awareness of the health care services providing by community pharmacists through helpful hard work of community pharmacies with pharmaceutical families. Previous instructions from developed countries showed that attitude and coordination of healthcare providers are significant determining factor for public participation in breast cancer screening programs [31,32]. In their report in 2001, Giles et al. have assessed the results of a community pharmacy-based breast cancer awareness programmed, representing significant enhancements in rate of women carrying out self-examination subsequent pharmacist-based intervention [33]. In this reading, Iraqi pharmacists showed lack of time as the key barrier to breast cancer health promotion. where, community pharmacists are participating greater quantity of time in dispensing activities rather than given that patient education and health information. This universal barrier to substantial pharmacist educational performance can be overwhelmed by employing pharmacy technicians to bearing routine dispensing actions, thus provided that more time for patient-oriented services by registered pharmacists. Other probable decisions to overcome time barriers would be to representative, with organization, most routine dispensing activities to pharmacist assistance, thus pharmacists might have additional time to offer pharmaceutical care [34,35]. Absence of educational material was also observed as a barrier to breast tumor education by pharmacists in this study. For active patient education, community pharmacists should be providing with essential apparatuses, such as printed material, which can be simply providing to community in work locations. Compared with Qatar study earlier evaluation for involvement in breast cancer health education was conducted among community pharmacists in Qatar [20]. Similar to our study, assessment of breast cancer awareness among community pharmacists in Qatar showed some knowledge limitations. The study among pharmacists in Qatar indicated insufficient knowledge particularly for questions related to breast cancer risk factors and screening recommendations [20]. Community pharmacists in Qatar showed positive attitudes to be involved in breast cancer education. Lack of personnel, time and privacy were considered major barriers among community pharmacists in Qatar[20]. The results of our study showed a positive association between pharmacist's knowledge of breast cancer and knowledge of breast cancer screening were associated with favorable attitude towards

involvement in breast cancer education among pharmacists.

Conclusion

In this survey we found that Iraqi community pharmacists have low level of knowledge about sign, symptoms and risk factor of breast cancer, in addition to knowledge of screening. However, the community pharmacists wish to increased their knowledge toward breast cancer. This improvement in knowledge of community pharmacy will be effective educators of the population about breast cancer.

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