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Attitudes and Practices of Female Physicians Regarding Breast Cancer Screening in Primary Health Care Centers in Babylon Province

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ABSTRACT

Background & Objective: Breast cancer is the leading cause of female cancer death in Iraq, where participation in screening is low despite awareness programs. Female primary care providers do promote breast cancer screening even with minimal training, time, and cultural limits. These challenges should be overcome to enhance screening and improve public health. This study was conducted with aim to examine the attitudes and behaviors of primary care female physicians regarding breast cancer screening.

Materials & Methods: This cross-sectional study was conducted among 100 female physicians in Babylon Province, Iraq, at primary care centers from November 1 to December 1, 2024. We collected the three-part questionnaire, which included socio-demographics, attitudes, and habits, through personal interviews and Google forms. A 15-doctor pilot study clarified the questions.

Results: In this study, 69% of female primary health care physicians had a "poor to average" attitude related to breast cancer screening, with statistical significance related to their age, experience, marital status, and number of pregnancies. Younger and single physicians who tend to have fewer pregnancies and less experience and had a better attitude and practice, showing a significant correlation between positive attitudes and better screening practices. MBChB physicians had better screening attitudes than family medicine specialists, and there was a need for targeted interventions to improve attitudes and practices.

Conclusion: The current study found substantial differences in breast cancer screening attitudes and behaviours among female primary care providers. Younger, less experienced and single physicians and those with an MBChB had better screening attitudes. Targeted training and awareness initiatives can improve attitudes and practices.

Keywords: Attitudes, Practices, Breast Cancer, Screening, Female Physicians, Primary Health Care, Centers

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1. Introduction

Breast cancer is still the leading malignant disease among women worldwide, accounting for a high rate of morbidity and mortality related to cancer. The proven key aspect to reduce breast cancer mortality is effective screening program implementation based on early detection that allows timely intervention and treatment **(1)**. Among female healthcare workers, female physicians play a crucial role in promoting breast cancer screening practices. They have their own knowledge, attitude, and personal practices regarding screening, which influence not only their well-being, but also that of other patients in terms of behavior and compliance **(2)**. In the primary health care centers, the female physician is a frequent first contact for women seeking medical advice. They are in a unique position to advocate those preventive measures be strongly and actively supported, for example, screening for breast cancer. Despite playing this crucial role, there are few evidence of the deteriorating knowledge, attitudes, and practices of health care providers, indeed female physicians, regarding the screening of breast cancer. Identifiable key gaps can result from limited resources of information on the subject, unawareness of altered criteria, cultural disparities, or alternative angle clinical obligations. Knowledge of these factors is important for improvement in uptake and patient outcomes **(3, 4)**. Breast cancer screening recommendations worldwide highlight the value of regular self-breast examinations (SBE), clinical breast examinations (CBE), and mammography in all-aged women, with special emphasis on those who are more than 40 years old and/or have a family history of breast cancer **(5)**.

However, compliance with such recommendations significantly varies from one setting to another, with resource-limited countries in general and Iraq/Middle East, particularly facing their specific challenges. Health care infrastructure is poor, there is no national program of screening, and the social attitude towards cancer disease is negative. In these regions, female physicians may face additional challenges due to limited time, inadequate training, and an unjustified sense of personal risk **(6)**. Breast cancer is the first cause of cancer mortality among women in Iraq. Participation in the screening programs is generally low, despite the large sensitization campaigns and the opening of breasts specializing clinics. Women primary health care center physicians could be role models and educate their communities. However, their own participation in these breast cancer screening programs reflects broader cultural and systemic issues that hinder efforts to achieve meaningful improvements in public health outcomes **(7, 8)**. The present study was conducted with aim to assess the attitudes and practices of female physicians regarding breast cancer screening in primary health care centers.

2. Materials and Methods

This cross-sectional descriptive study was carried out among female physicians of Primary Health Care Centers in Babylon Province, Iraq, from November 1st to December 1st, 2024. A total of 100 female physicians working in primary health centers of the province were randomly selected. We collected data through personal interviews and Google forms, with each session lasting no more than 15-20 minutes. A three-part questionnaire was used, which was adopted from previous research **(9)**. The first part of the questionnaire included the collection of socio-demographic data based on age, experience, specialty, marital status, number of pregnancies, and history of breast cancer. The second part was related to the attitudes to BSE, which consisted of 15 questions rated on a 5-point scale from "strongly disagree" to "strongly agree." An observational 7-question checklist assessed the practices of breast self-examination in the third part. The practices were categorized as "good" if they scored more than 75%, "average" if they scored between 50-75%, and "poor" if they scored less than 50%. The study included all female physicians working at primary health care centers in Babylon Province. There were no exclusion criteria for this study. A pilot study was performed on approximately 15 physicians to ensure the clarity of the questionnaire's questions. Subsequently, some questions were modified based on the feedback received.

Data was analyzed using SPSS (version 20.0). Descriptive statistics, including frequency, percentages, mean and standard deviation were employed to summarize the characteristics of the study subjects. Chi-square test was used to evaluate the associations between categorical variables. $P<0.05$ was considered significant.

3. Results

Distribution of primary health care Female physicians based on Socio-demographic factors was presented in Table 1.

Most of the female physicians (81%) aged ≤ 30 years and (19%) were older than 30 years.

Most physicians (75%) had less than 5 years of experience and only 25% had 5 years or more of professional experience. A significant majority of participants (74%) hold a general medical degree (M.B.Ch.B.) and 26% specialized in family medicine. Regarding marital status, 52% of participants were married, while 48% were single. Over half of the participants (55%) had no pregnancy and 39% had 1-2 pregnancies, while a small fraction (6%) reported having 3 pregnancies. Most participants (74%) had no family history of breast cancer, while 6% had a first-degree (6%) and 20% had a second-degree relative history of breast cancer.

Table 1. Distribution of female's physicians according to socio-demographic factors

variables		frequency	percentage
Age (years)	≤30	81	81.0
	>30	19	19.0
Experience duration	<5	75	75.0
(years)	≥5	25	25.0
Specialty	Family medicine	26	26.0
	M.B.Ch.B.	74	74.0
Marital status	married	52	52.0
	single	48	48.0
Number of pregnancy	no	55	55.0
	1-2	39	39.0
	3	6	6.0

variables		frequency	percentage
History of breast	no history of B C	74	74.0
cancer	Fist degree relative	6	6.0
	Second degree relative	20	20.0
Total		100	100

Fig 1 showed that 69 (69%) of primary health care female physicians had poor to average attitude towards breast screening, while 31 (31%) of them had good attitude.

Fig 2 showed that 68 (68%) of primary health care female physicians had poor to average practice towards breast screening, while 32 (32%) of them had good practice.

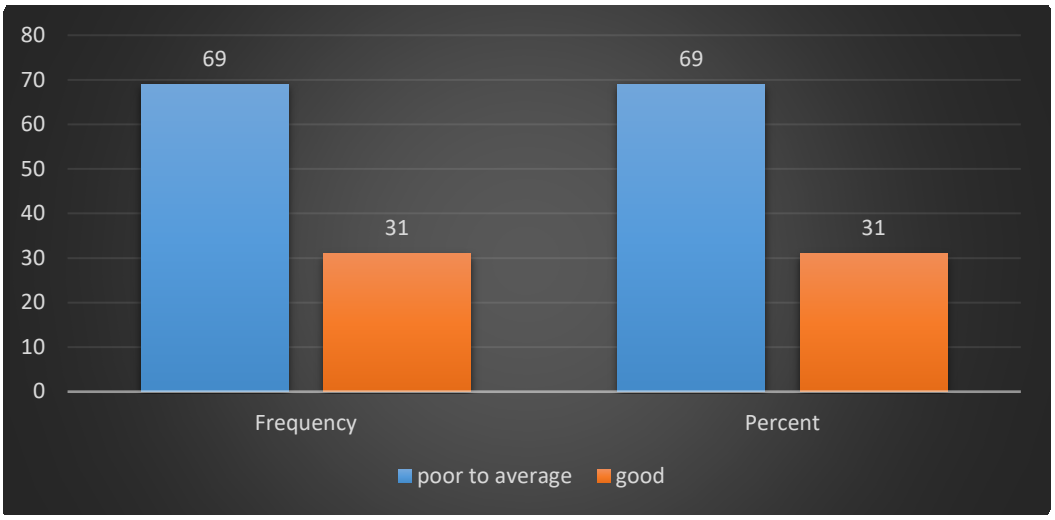


Figure 1. Distribution of female physicians according to their attitude towards breast cancer screening.

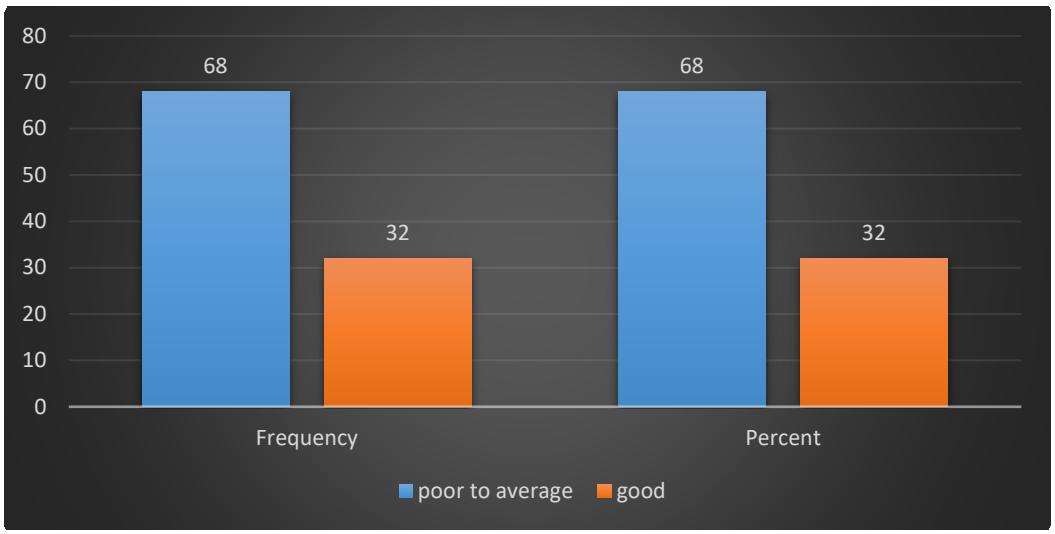


Figure 2. Distribution of female physicians according to their practice towards breast cancer screening.

The relationship between socio-demographic factors and the attitudes (categorized as "Poor to Average" and "Good") of female physicians toward breast screening was presented in Table 2.

Age Groups

Physicians aged ≤30 years: 63.0% had a "Poor to Average" attitude, while 37.0% had "Good" attitude. Physicians aged >30 years: A higher proportion (94.7%) had a "Poor to Average" attitude, and only 5.3% had a "Good" attitude (P=0.006), which indicates a significant association between age and attitude, with younger doctors showing a better attitude toward breast screening.

Experience Duration

Physicians with <5 years of experience: 64.0% had a "Poor to Average" attitude, and 36.0% had a "Good" attitude. Physicians with ≥5 years of experience: 84.0% had a "Poor to Average" attitude, and only 16.0% had a "Good" attitude (P=0.05), which suggests a borderline significant association between years of experience and attitude, with less experienced physicians demonstrating a relatively better attitude.

Specialty

Family medicine doctors: 92.3% had a "Poor to Average" attitude, and only 7.7% have a "Good" attitude. MBChB physicians: 60.8% had a "Poor to Average" attitude, and 39.2% had a "Good" attitude (P=0.003), which indicates a significant association, with MBChB physicians showing a better attitude than family medicine specialists.

Marital Status

Married physicians: 96.2% had a "Poor to Average" attitude, and only 3.8% had a "Good" attitude. Single physicians: 39.6% had a "Poor to Average" attitude, and 60.4% had a "Good" attitude (P=0.0001), which demonstrates a strong significant association, with single physicians showing a markedly better attitude toward breast screening.

Number of Pregnancies

Physicians with no pregnancy: 47.3% had a "Poor to Average" attitude, and 52.7% had a "Good" attitude. Physicians with 1-2 pregnancies: 97.4% had a "Poor to Average" attitude, and only 2.6% had a "Good" attitude. Physicians with ≥3 pregnancies: 83.3% had a "Poor to Average" attitude, and 16.7% had a "Good" attitude (P=0.0001), which indicates a strong significant association, with physicians who had no pregnancy showing the best attitude toward breast screening.

History of Breast Cancer

Physicians with no history of breast cancer: 71.6% had a "Poor to Average" attitude, and 28.4% had a "Good" attitude. Physicians with a first-degree relative history of breast cancer: 83.3% had a "Poor to Average" attitude, and 16.7% had a "Good" attitude. Physicians with a second-degree relative history of breast cancer: 55.0% had a "Poor to Average" attitude, and 45.0% had a "Good" attitude (P=0.3). There was no statistically significant association between a family history of breast cancer and attitudes toward breast screening.

Table 2. Association between attitude of breast screening among female physicians and their socio-demographic factors

	Attitude		
Age groups (years)	Poor to Average	Good	P-value
≤30	51 (63.0%)	30 (37.0%)	0.006
>30	18 (94.7%)	1 (5.3%)	
Experience duration (years)	Poor to Average	Good	P-value
<5	48 (64.0%)	27 (36.0%)	0.05
≥5	21 (84.0%)	4 (16.0%)	
Specialty	Poor to Average	Good	P-value
Family Medicine	24 (92.3%)	2 (7.7%)	0.003
MBChB	45 (60.8%)	29 (39.2%)	
Marital status	Poor to Average	Good	P-value
Married	50 (96.2%)	2 (3.8%)	0.0001
Single	19 (39.6%)	29 (60.4%)	
Number of pregnancy	**Poor to Average**	**Good**	**P-value**
No	26 (47.3%)	29 (52.7%)	**0.0001**
1-2	38 (97.4%)	1 (2.6%)	
≥3	5 (83.3%)	1 (16.7%)	
History of breast Cancer	**Poor to Average**	**Good**	**P-value**
no history of B C	53 (71.6%)	21 (28.4%)	0.3
Fist degree relative	5 (83.3%)	1 (16.7%)	
Second degree relative	11 (55.0%)	9 (45.0%)	

P-value ≤0.05 (significant)

The relationship between the practice of breast screening (categorized as "Poor to Average" and "Good") among female doctors and their socio-demographic factors was presented in Table 3.

Age Groups

Physicians aged ≤30 years: 64.2% had a "Poor to Average" practice, while 35.8% had a "Good" practice. Physicians aged >30 years: A higher proportion (84.2%) exhibited "Poor to Average" practice, and only 15.8% had a "Good" practice (P=0.108). There was no significant association between age and practice, though younger physicians tend to have slightly better practices.

Experience Duration

Physicians with <5 years of experience: 65.3% had "Poor to Average" practice, and 34.7% had a "Good" practice. Physicians with ≥5 years of experience: 76.0% had "Poor to Average" practice, and 24.0% had a "Good" practice (P=0.5). No significant association was observed between years of experience and practice.

Specialty

Family medicine physicians: 80.8% had "Poor to Average" practice, and only 19.2% had a "Good" practice. MBChB physicians: 63.5% had "Poor to Average" practice, and 36.5% had a "Good" practice (P=0.14). No significant association was observed between specialty and practice, but MBChB physicians tend to have better practices than family medicine doctors.

Marital Status

Married physicians: 88.5% had "Poor to Average" practice, and only 11.5% had a "Good" practice. Single physicians: 45.8% had "Poor to Average" practice, while 54.2% had a "Good" practice (P=0.0001), which indicates a strong significant association between marital status and practice, with single physicians showing markedly better practices compared to married physicians.

Number of Pregnancies

Physicians with no pregnancy: 52.7% had a "Poor to Average" practice, and 47.3% had a "Good" practice. Physicians with 1-2 pregnancies: 84.6% had a "Poor to Average" practice, and only 15.4% had a "Good" practice. Physicians with ≥3 pregnancies: 100.0% had a "Poor to Average" practice, with no "Good" practice reported (P-=0.001), which demonstrates a significant association, with physicians who have no pregnancies showing better practices.

History of Breast Cancer

Physicians with no history of breast cancer: 68.9% had a "Poor to Average" practice, and 31.1% had a "Good" practice. Physicians with a first-degree relative history of breast cancer: 83.3% had a "Poor to Average" practice, and 16.7% had a "Good" practice. Physicians with a second-degree relative history of breast cancer: 60.0% had a "Poor to Average" practice, and 40.0% had a "Good" practice (P=0.5). No significant association was found between family history of breast cancer and practice.

Table 3. Association between practice of breast screening of female physicians and their socio-demographic factors

	Practice		
Age groups (years)	**Poor to Average**	**Good**	**P-value**
≤30	52 (64.2%)	29 (35.8%)	0.108
>30	16 (84.2%)	3 (15.8%)	
Experience duration (years)	**Poor to Average**	**Good**	**P-value**
<5	49 (65.3%)	26 (34.7%)	0.5
≥5	19 (76.0%)	6 (24.0%)	
Specialty	**Poor to Average**	**Good**	**P-value**
Family Medicine	21 (80.8%)	5 (19.2%)	0.14
MBChB	47 (63.5%)	27 (36.5%)	
Marital status	**Poor to Average**	**Good**	**P-value**
Married	46 (88.5%)	6 (11.5%)	**0.0001**
Single	22 (45.8%)	26 (54.2%)	
Number of pregnancy	**Poor to Average**	**Good**	**P-value**
No	29 (52.7%)	26 (47.3%)	**0.001**
1-2	33 (84.6%)	6 (15.4%)	
≥3	6 (100.0%)	0 (0.0%)	

	Practice		
History of breast Cancer	**Poor to Average**	**Good**	**P-value**
no history of B C	51 (68.9%)	23 (31.1%)	
Fist degree relative	5 (83.3%)	1 (16.7%)	0.5
Second degree relative	12 (60.0%)	8 (40.0%)	

P-value ≤0.05 (significant)

The relationship between the practice and attitude of female physicians toward breast screening was shown in Table 4.

Physicians with a "Poor to Average" attitude, most participants (92.8%) demonstrated a "Poor to Average" practice and only 7.2% of these physicians exhibited a "Good" practice.

Physicians with a "Good" attitude, most (87.1%) had "Good" practice and a small proportion (12.9%) exhibited a "Poor to Average" practice. (P=0.0001), which indicates a strong association between attitude and practice. Physicians with a "Good" attitude were much more likely to engage in "Good" practices for breast screening, while those with a "Poor to Average" attitude predominantly showed "Poor to Average" practices.

Table 4. Association between attitude and practice of breast screening of female physicians

	Practice		
Attitude	**Poor to Average**	**Good**	**P-value**
Poor to Average	64 (92.8%)	5 (7.2%)	0.0001
Good	4 (12.9%)	27 (87.1%)	

P-value ≤0.05 (significant)

4. Discussion

Attitude and practice play a very important role in early detection and management of breast cancer. The level of attitude of health professionals, as well as their practice toward the screening methods for breast cancer, is important determinants of whether their patients would practice such methods. The findings of the current study revealed that most of the female primary health care (PHC) physicians typically exhibited poor to average attitudes and practices toward breast cancer screening. This is concerning given the pivotal role PHC doctors play in promoting early detection of breast cancer, which is crucial for reducing mortality rates and improving survival outcomes. Studies conducted in Middle Eastern countries and Iraq reported similar results. The study by Alwan et al **(10)** in 2012 in Iraq reported that only 34% of primary health care (PHC) physicians showed positive attitudes toward breast cancer screening. They reported that several barriers were highlighted, including a shortage of training, no confidence in reading the mammograms, and limited knowledge of the criteria for screening **(10)**. Kawar **(11)** also reported that in Jordan, primary health care (PHC) physicians were found to have little practice marks when recommending mammography, with cultural and social reasons playing a major role in forming attitudes **(11)**. Flemban et al **(12)** in Saudi Arabia reported that PHC physicians understand the significance of breast cancer screening, but did not do the recommendations, and the performance of clinical breast examinations (CBEs) and referring the patient for mammography were optimal **(12)**. The main factor contributing to this was suboptimal time availability due to heavy workloads in PHC centers. Moreover, in Egypt, Orabi **(13)** stated that PHC doctors recognized the importance of breast cancer screening, but did not practice it well because of infrastructure and resources. For example, mammography machines were not available in many PHC settings **(13)**. These collectively suggest systemic issues, including inadequate training, lack of resources, and cultural barriers that are acting to impede both attitude and practice. These critical issues should be addressed. A training program designed for PHC doctors on the importance and technique of breast cancer screening might bring about a marked improvement in their confidence and practice. Screening resources need availability along with culturally aware campaigning for sensitivity; it can then work a tremendously effectiveness for breast cancer screening initiatives.

In the current study, age had significant association with attitudes toward breast screening and younger physicians tend to have better attitudes than older ones. This was somewhat in agreement with the observation reported by Al-Zalabani et al **(14)** who noted that younger medical practitioners tend to focus more on a campaign of preventive health practices due to very pertinent medical education, training them on early detection strategies **(14)**. Habeeb et al **(15)** also

conducted a study among medical physicians aged 35 years in Iraq and found that younger physicians supported breast cancer screening more than older physicians because of familiarity with changes in recommendations and protocols. This group, therefore, may take more time to come around because they might have entrenched habits or have no access to additional training that newer physicians enjoy **(15)**. However, an aggressive attitude in obtaining relevant knowledge through continuous medical education (CME) can be useful.

Regarding years of experience, a borderline significant relationship was found for the youngest group of physicians, who had just less than five years of experience. This now mirrors the findings of Abu-Helalah et al **(16)** that physicians have more stimulus to apply their acquired knowledge at work, as it may reflect an enthusiasm period and recent training. Obsolete practices or administrative burdens can limit the experience of high-level doctors. Specific refresher courses and workshops aimed at experienced physicians could improve their attitude to breast screening practice **(16)**.

In the current research, there was a significant association between specialty and attitude. MBChB physicians had better attitudes than family medicine specialists. Trends like this were reported by Hamed et al. and might show how, mainly during their training, general practitioners can be more exposed to screening programs. This is in contrast with family medicine doctors, who would rather concentrate on managing chronic cases and therefore push aside some of the preventive measures. The inclusion of breast screening modules in the curricula of family medicine would change their perception and participation **(17)**. Single physicians in the present study had significantly better attitudes and practices for breast screening as compared to married physicians. This may be because single physicians have fewer family obligations and, therefore, more time to spare to update knowledge and attend CME activities. Saeedi et al **(18)** conversely reported that married physicians, especially those who had children, may find it very difficult to do justice to their personal responsibilities along with professional development. We could address such disparities by implementing flexible CME policies and family-supportive ones **(18)**.

The current study showed that the number of pregnancies had a strong association with attitude toward breast screening, with physicians having no pregnancies showing the best attitude and practice toward breast screening. Other studies also reported that female physicians without children have better attitudes toward screening breasts **(19, 20)**. Question-marks training programs in life-contexts in the lives of the different women doctors may help explain why, in principle, most of the female physician's support prevention better. This also explains the tailored interventions aimed at specific demographic and professional characteristics to strengthen PHC doctors' attitudes towards breast screening.

5. Conclusion

Most primary health care female physicians had a poor to moderate attitude towards breast screening. Moreover, most primary health care female physicians exhibited poor to moderate practices for breast screening. It revealed significant gaps in attitude and practice toward breast cancer screening among female primary health care physicians in Babylon. The study also noted that younger doctors, those with less experience, MBChB practitioners, single doctors, and those without pregnancies exhibited better attitudes towards breast screening. Focused interventions are necessary as lower or fair attitudes strongly correlate with lower practice levels. Training programs and awareness campaigns should target the improvement of attitudes to enhance screening practice. This becomes essential for early detection to minimize the level of mortality attributed to breast cancer.

6. Declarations

Acknowledgments

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Ethical Considerations

The study used the ethical principles based on the Declaration of Helsinki and was conducted with patients' oral and written informed consent before participating. The study protocol and subject information plus consent form had been reviewed and approved by an ethics committee in compliance with 563 (inserting number and date in format 1/6/2024) to obtain this.

Authors' Contributions

Dr. Qais Ismaeel collected the data and authored the manuscript, while Dr. Ameer Kadhem conducted the statistical analysis. Dr. Ehab undertook the revision of the entire paper.

Conflict of Interest

The authors declare no conflict of interest.

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