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Perceived Barriers to Breast Cancer Screening Utilization among Women in the United Arab Emirates: A Cross-Sectional Study

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ABSTRACT

Background: Breast cancer remains the leading cause of cancer-related deaths among women worldwide, with incidence rising due to population growth. Despite global efforts, barriers hinder screening utilization, including financial constraints, low awareness, cultural factors, fear, and psychological concerns. This study aimed to identify the perceived barriers to breast cancer screening utilization among women in the United Arab Emirates.

Methods: A cross-sectional study was conducted among women aged 20 years and older in the United Arab Emirates. A self-administered data collection form was used to assess sociodemographic characteristics, breast cancer screening utilization, and perceived barriers. Data were analyzed using χ^2 tests and logistic regression.

Results: A total of 959 women participated. Significant associations were observed between perceived barriers—such as lack of knowledge, fear or anxiety, cost or insurance coverage, and lack of physician recommendation—and breast cancer screening utilization. Unemployment was a significant predictor of perceiving lack of physician recommendation as a barrier (adjusted odds ratio [aOR], 4.339; 95% CI, 2.036–9.248). Being younger than 40 years (aOR, 1.585; 95% CI, 1.108–2.267) and married (aOR, 1.588; 95% CI, 1.077–2.341) were significant predictors of perceiving a lack of knowledge as a barrier.

Conclusion: These findings emphasize the interplay between sociodemographic factors and perceived barriers to breast cancer screening. Addressing the lack of physician recommendations, improving awareness, and reducing financial and accessibility constraints are crucial for increasing screening uptake. Community initiatives can enhance early detection and reduce the breast cancer burden.

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INTRODUCTION

Breast cancer (BC) is a condition where aberrant breast cells proliferate uncontrollably and develop into tumors. Untreated tumors have the potential to spread throughout the body and become fatal. In 2022, breast cancer caused 670 000 deaths worldwide, and 2.3 million women received a

diagnosis. Breast cancer occurs in every country and can affect women at any age after puberty, although it is more common later in life.¹

Despite rigorous efforts in many countries to mitigate its incidence, breast cancer is the leading cause of cancer-related deaths among women worldwide, and its prevalence is rising. BC is expected to cause more than 3 million annual deaths by 2040 due to population growth and aging alone. This was predicted based on demographic projections and assuming that the rates remained stable from the baseline year of 2020 and was calculated by applying

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the 2020 rates to the predicted population data.² In 2021, breast cancer accounted for 9.64% of all cancer deaths in the United Arab Emirates (UAE), making it one of the most common causes of cancer-related deaths. Of all malignant cases in 2021, 1139 cases of breast cancer were reported to the UAE National Cancer Registry, accounting for 20.3% of all cases.³

In the United States, the primary barrier to women in specific demographic groups adhering to or following up on cancer screening programs appears to be a lack of health insurance⁴, suggesting that financial constraints can act as a potential barrier even in other countries, in addition to cultural or knowledge-related barriers. Improved methods of informing women, particularly those in disadvantaged groups, are necessary to improve the outcomes of cancer screening programs. Health education is essential, especially for vulnerable populations, as it would help women adopt more positive attitudes and modify their behavior toward breast cancer screening.^{4,5} Language and cultural barriers, mobility constraints, psychological barriers, lack of time, and prioritizing other health conditions are additional challenges present in most of the studies being conducted.⁴⁻¹³

Barriers to breast cancer screening utilization can be broadly classified into many types, such as psychological, systemic, social, and cultural. Regarding culture-related barriers, one study reported that women's uneasiness when receiving treatment or examinations from male physicians is a barrier.^{5,14-16} Similarly, a study conducted in Tanzania among 354 women reported that the primary barrier to breast cancer screening was the participants' ignorance about breast cancer, which can be identified as a systemic barrier.¹⁷ Additionally, many psychological barriers have been identified by various studies. For instance, a systematic review of the barriers to breast cancer screening in Saudi Arabia revealed that the two most often mentioned barriers among those found were humiliation from breast-related tests and fear of finding cancer. Furthermore, fear of clinical examination discomfort came in second, followed by anxiety about not understanding the procedure. Additionally, fear of radiation exposure was identified as a common concern, in addition to ignorance about the issue. Concerns, including the idea that there is no cure for cancer and the perception that mammograms are not important, were significant barriers noted in some studies. Lack of time, financial or work limitations, and a shortage of female healthcare experts were somewhat less frequent but essential barriers.^{18,19}

The existing literature has discussed various barriers that affect the utilization of breast cancer screening programs among women in different

countries, including fear of receiving a cancer diagnosis, embarrassment, fear of pain, ignorance, and worries about radiation exposure. This shows how complex individual, cultural, and systemic factors interact to shape screening practices.^{4-13,20} Nevertheless, research on barriers to breast cancer screening in the UAE remains insufficient. While numerous studies have identified key barriers, few have investigated which demographic groups perceive them most strongly or how this perception impacts utilization rates. Therefore, the purpose of this study was to broaden our understanding of the potential barriers that could affect the utilization of breast cancer screening programs among women in the UAE, emphasize the necessity of focused measures, and encourage proactive health-seeking practices that could help in the early detection efforts and lessen the burden of breast cancer.

METHODS

Study design, setting, and population

This cross-sectional study was conducted among 959 women in Ajman, UAE. A convenience sampling technique was employed to recruit the participants. Women aged 20 and above with no upper age limit, regardless of nationality, who were willing to participate were included in the study. Women who did not want to participate in the study were excluded. Based on a previous study, it was found that 34.1% practiced breast self-examination.²¹ The sample size was calculated using the standard formula for estimating a proportion: $N = (Z^2 \times p \times q) / L^2$. This calculation assumed a 95% confidence level ($Z = 1.96$) and a margin of error (L) of 10% of the expected proportion (p), meaning $L = 0.1p$. The calculated sample size was 825, including a 10% nonresponse rate.

Data collection

An interviewer- or self-administered data collection form was developed through a review of the existing literature to assess the utilization of breast cancer screening and perceived barriers to breast cancer screening among women, in addition to sociodemographic characteristics. Sociodemographic characteristics were examined, as previous studies highlighted their association with breast cancer screening behaviors and the barriers involved.^{22,23} The data were collected using a self-administered questionnaire, which was distributed in the form of a Google Form. Before data collection, 5 women in the same target research population participated in a pilot study to refine the questionnaire. All participants gave their informed consent, which was displayed to them on the first page of the Google Form. The participants' involvement was entirely voluntary.



Participants' privacy, anonymity, and confidentiality were maintained.

Data analysis

Data were downloaded into an Excel spreadsheet and transferred to SPSS software (version 29) for analysis. The association between variables was evaluated using the χ^2 test. Logistic regression was used to determine the predictors of perceived barriers to breast cancer screening. Univariable logistic regression was performed to examine the association between each independent variable and the outcome. Variables with a P value < 0.2 in the univariable

analysis were considered for inclusion in the multivariable logistic regression model to determine the independent effect of each variable. A P value < 0.05 was considered statistically significant.

RESULTS

Among the 959 participants, the mean (SD) age was 34.27 (10.978) years. Most participants were younger than 40 years (498 [51.9%]), from the Eastern Mediterranean Region (EMR) (431 [44.9%]), had a high school education or less (411 [42.9%]), were married (633 [66.0%]), and were unemployed (643 [67.0%]).

Table 1. Association Between Perceived Barriers and Utilization of Breast Cancer Screening

Perceived barrier	Group	Utilization of breast cancer screening		P value
		No, n (%)	Yes, n (%)	
Lack of knowledge	No	569 (77.1)	169 (22.9)	0.024
	Yes	186 (84.2)	35 (15.8)	
Fear or anxiety regarding the procedure	No	601 (77.4)	175 (22.6)	0.046
	Yes	154 (84.2)	29 (15.8)	
Cost or insurance coverage	No	570 (76.8)	172 (23.2)	0.008
	Yes	185 (85.3)	32 (14.7)	
Accessibility to screening issues	No	722 (78.2)	201 (21.8)	0.053
	Yes	33 (91.7)	3 (8.3)	
Lack of a physician recommendation	No	548 (75.5)	178 (24.5)	< 0.001
	Yes	207 (88.8)	26 (11.2)	

Table 1 presents the association between perceived barriers and the utilization of breast cancer screening. Perceived barriers such as lack of knowledge, fear or anxiety regarding the procedure, cost or insurance coverage, and lack of physician recommendation were significantly associated with the utilization of breast cancer screening.

A higher proportion of participants who did not perceive barriers such as a lack of knowledge (169 [22.9%]), fear or anxiety regarding the procedure (175 [22.6%]), cost or insurance coverage (172 [23.2%]), and a lack of physician recommendation (178 [24.5%]) underwent breast cancer screening more frequently than those who perceived these barriers.

Table 2 presents the perceived barriers as predictors of breast cancer screening utilization. Significant associations were found between cost or insurance coverage, lack of a physician recommendation, and screening utilization.

Participants who did not perceive cost or insurance coverage (adjusted odds ratio [aOR], 1.808; 95% CI, 1.187–2.754; $P = 0.006$) and lack of physician recommendation (aOR, 2.625; 95% CI, 1.681–4.10; $P < 0.001$) as barriers were significantly more likely to undergo breast cancer screening compared with those who did perceive them as barriers.

Although participants who did not perceive fear or anxiety as a barrier had significantly higher odds of breast cancer screening utilization in the crude analysis (crude odds ratio [cOR], 1.546; 95% CI, 1.005–2.379; $P = 0.047$), this association was not statistically significant after adjustment (aOR, 1.267; 95% CI, 0.812–1.976; $P = 0.30$). Likewise, lack of knowledge was statistically significant in the crude analysis (cOR, 1.578; 95% CI, 1.058–2.354; $P = 0.025$) but lost its significance after adjustment (aOR, 1.506; 95% CI, 1.000–2.268; $P = 0.050$). Furthermore, accessibility to screening issues was not statistically significant in the adjusted analysis (aOR, 2.213; 95% CI, 0.656–7.471; $P = 0.20$).

Table 3 presents the association between sociodemographic characteristics and the barrier “lack of a physician recommendation.” The analysis revealed that age, education level, and employment status were statistically significant factors associated with this barrier, whereas nationality and marital status were not. A higher prevalence of this barrier was reported among participants younger than 40 years (142 [28.5%]), those with an undergraduate education (54 [28.9%]), and unemployed women (192 [29.9%]), compared with their older, more highly educated, and employed counterparts.

**Table 2.** Perceived barriers as predictors of utilization of BC screening

Variable	Group	Crude OR (95% CI)	<i>P</i> value	Adjusted OR (95% CI)	<i>P</i> value
Lack of knowledge	No	1.578 (1.058–2.354)	0.025	1.506 (1.000–2.268)	0.050
	Yes	1	—	1	—
Fear or anxiety regarding the procedure	No	1.546 (1.005–2.379)	0.047	1.267 (0.812–1.976)	0.30
	Yes	1	—	1	—
Cost or insurance coverage	No	1.745 (1.155–2.634)	0.008	1.808 (1.187–2.754)	0.006
	Yes	1	—	1	—
Accessibility to screening issues	No	3.062 (0.930–10.088)	0.066	2.213 (0.656–7.471)	0.20
	Yes	1	—	1	—
Lack of a physician recommendation	No	2.586 (1.663–4.021)	<0.001	2.625 (1.681–4.10)	<0.001
	Yes	1	—	1	—

CI, confidence interval; OR, odds ratio.

Table 4 shows the associations between sociodemographic characteristics and the “lack of knowledge” barrier. Education level and employment were statistically significant, whereas age, nationality, and marital status were not. Participants with an undergraduate education reported the highest percentage of facing this barrier (57 [30.5%]), while

those with a high school (87 [21.2%]) or postgraduate education (77 [21.3%]) had lower percentages. Similarly, participants in the healthcare field were significantly less likely (13 [12.7%]) to report lack of knowledge as a barrier compared with individuals in non-healthcare fields (49 [22.9%]) and unemployed women (159 [24.7%]).

Table 3. Association between sociodemographic characteristics and lack of a physician recommendation barrier

Sociodemographic characteristic	Group	“Lack of a physician recommendation” barrier		<i>P</i> value
		No, n (%)	Yes, n (%)	
Age, y	<40	356 (71.5)	142 (28.5)	0.002
	≥40	370 (80.3)	91 (19.7)	
Nationality	SEAR	287 (76.5)	88 (23.5)	0.72
	EMR	321 (74.5)	110 (25.5)	
	Other	118 (77.1)	35 (22.9)	
Education level	High school	299 (72.7)	112 (27.3)	0.005
	Undergraduate	133 (71.1)	54 (28.9)	
	Postgraduate	294 (81.4)	67 (18.6)	
Marital status	Single	246 (75.5)	80 (24.5)	0.90
	Married	480 (75.8)	153 (24.2)	
Employment	Unemployed	451 (70.1)	192 (29.9)	<0.001
	Non-healthcare field	181 (84.6)	33 (15.4)	
	Healthcare field	94 (92.2)	8 (7.8)	

EMR, Eastern Mediterranean Region; SEAR, South-East Asia Region.

Among the sociodemographic characteristics examined, only age showed a statistically significant association with fear or anxiety regarding the procedure ($P=0.02$), while no significant associations were found between sociodemographic characteristics and perceived barriers such as cost or insurance coverage and accessibility issues.

Table 5 shows the predictors of the perceived barrier “lack of a physician recommendation.” Unemployed women had significantly higher odds of perceiving a lack of physician recommendation as a barrier to breast cancer screening utilization (aOR, 4.339; 95% CI, 2.036–9.248; $P<0.001$). However, other sociodemographic factors, such as age younger than 40 years and educational level (high school and

undergraduate), lost their significance after adjustment.

An interaction variable between education and employment was included in the analysis; however, it was not statistically significant ($P>0.05$) and did not meaningfully affect the significance of other variables. Therefore, this variable was excluded from the final analysis.

Table 6 shows the predictors of the perceived barrier “lack of knowledge.” Women younger than 40 years (aOR, 1.585; 95% CI, 1.108–2.267; $P=0.012$) and married women (aOR, 1.588; 95% CI, 1.077–2.341; $P=0.019$) were significantly more likely to perceive lack of knowledge as a barrier to breast cancer screening utilization.

**Table 4.** Association Between Sociodemographic Characteristics and the “Lack of Knowledge” Barrier

Sociodemographic characteristic	Group	“Lack of knowledge” barrier		P value
		No, n (%)	Yes, n (%)	
Age, y	<40	373 (74.9)	125 (25.1)	0.12
	≥40	365 (79.2)	96 (20.8)	
Nationality	SEAR	298 (79.5)	77 (20.5)	0.32
	EMR	326 (75.6)	105 (24.4)	
	Other	114 (74.5)	39 (25.5)	
Education level	High school	324 (78.8)	87 (21.2)	0.027
	Undergraduate	130 (69.5)	57 (30.5)	
	Postgraduate	284 (78.7)	77 (21.3)	
Marital status	Single	261 (80.1)	65 (19.9)	0.10
	Married	477 (75.4)	156 (24.6)	
Employment	Unemployed	484 (75.3)	159 (24.7)	0.028
	Non-healthcare field	165 (77.1)	49 (22.9)	
	Healthcare field	89 (87.3)	13 (12.7)	

EMR, Eastern Mediterranean Region; SEAR, South-East Asia Region.

In the crude analysis, an undergraduate education (cOR, 1.63; 95% CI, 1.10–2.41; $P=0.014$), unemployment (cOR, 2.25; 95% CI, 1.22–4.14; $P=0.009$), and employment in a non-healthcare field

(cOR, 2.03; 95% CI, 1.05–3.95; $P=0.036$) were significantly associated with perceiving a lack of knowledge as a barrier.

Table 5. Predictors of the Perceived Barrier “Lack of a Physician Recommendation”

Variable	Group	Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age, y	<40	1.622 (1.201–2.191)	0.002	1.330 (0.969–1.824)	0.077
	≥40	1	—	1	—
Nationality	SEAR	1.034 (0.661–1.616)	0.88	—	—
	EMR	1.155 (0.748–1.785)	0.52	—	—
	Other	1	—	1	—
Education level	High school	1.644 (1.167–2.316)	0.004	1.212 (0.841–1.747)	0.30
	Undergraduate	1.782 (1.179–2.692)	0.006	1.230 (0.798–1.897)	0.35
	Postgraduate	1	—	1	—
Marital status	Single	1.020 (0.748–1.392)	0.90	—	—
	Married	1	—	1	—
Employment	Unemployed	5.002 (2.383–10.498)	<0.001	4.339 (2.036–9.248)	<0.001
	Non-healthcare field	2.142 (0.951–4.823)	0.066	2.104 (0.932–4.750)	0.073
	Healthcare field	1	—	1	—

CI, confidence interval; EMR, Eastern Mediterranean Region; OR, odds ratio; SEAR, South-East Asia Region.

These associations were not sustained after adjustment. Additionally, an interaction term between education and employment was included in the analysis, where women with an undergraduate education who were unemployed had significantly higher odds of reporting lack of knowledge as a perceived barrier (aOR, 4.089; 95% CI, 1.132–14.767; $P=0.032$).

Overall, this study found that perceived barriers such as cost or insurance coverage and lack of a physician recommendation had a significant impact on the utilization of breast cancer screening. Additionally, sociodemographic factors such as employment status significantly influenced the perception of a lack of physician recommendation as a barrier; likewise, age and marital status were significantly associated with perceiving a lack of knowledge as a barrier.

DISCUSSION

The results of the present study showed that women who did not report a lack of knowledge as a perceived barrier had about 1.5 times higher odds of utilizing breast cancer screening compared to those who did. This suggests that knowledge plays a significant role in screening uptake. However, a study conducted by Othman *et al.* in Yemen found that women with insufficient knowledge about breast cancer were 47% less likely to avoid screening, indicating a higher likelihood of participation despite limited knowledge.²⁴ In contrast, in a study by Albadawi among women in Jordan, it was observed that women who recognized the benefits of screening were 2.44 times more likely to undergo it.²²

Differences in these findings may be attributable to variations in healthcare system accessibility, age distribution of the study populations, and external factors, such as the influence of family and friends.

**Table 6.** Predictors of the Perceived Barrier “Lack of Knowledge”

Variable	Group	Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age, y	<40	1.274 (0.941–1.724)	0.12	1.585 (1.108–2.267)	0.012
	≥40	1	—	1	—
Nationality	SEAR	1	—	1	—
	EMR	1.247 (0.893–1.740)	0.20	1.180 (0.836–1.667)	0.35
	Other	1.324 (0.851–2.059)	0.21	1.360 (0.855–2.163)	0.19
Education level	High school	1	—	1	—
	Undergraduate	1.633 (1.104–2.414)	0.014	0.439 (0.132–1.464)	0.18
	Postgraduate	1.010 (0.715–1.427)	0.96	0.534 (0.163–1.742)	0.30
Marital status	Single	1	—	1	—
	Married	1.313 (0.948–1.820)	0.10	1.588 (1.077–2.341)	0.019
Employment	Unemployed	2.249 (1.223–4.135)	0.009	1.084 (0.428–2.748)	0.87
	Non-healthcare field	2.033 (1.047–3.948)	0.036	1.673 (0.587–4.766)	0.34
	Healthcare field	1	—	1	—
Education level × Employment	Undergraduate × Unemployed	—	—	4.089 (1.132–14.767)	0.032
	Postgraduate × Unemployed	—	—	2.386 (0.674–8.445)	0.18
	Postgraduate non-healthcare field	—	—	1.364 (0.344–5.407)	0.66
	High school × Healthcare field	—	—	1	—

CI, confidence interval; EMR, Eastern Mediterranean Region; OR, odds ratio; SEAR, South-East Asia Region.

Likewise, a study by Abdulelah *et al.* found that insufficient knowledge about screening methods is a significant obstacle to breast cancer screening, suggesting that awareness of breast cancer risks and available screening techniques is crucial for encouraging participation.²⁵

The present study also found that a lack of physician recommendations is one of the strongest predictors among all barriers. Similarly, in a study by Abdullah *et al.* among women attending an urban university primary care clinic, physician recommendation was the strongest predictor, with women being 7.61 times more likely to undergo a mammogram when advised by their physician. This shows the role physicians play when it comes to screening uptake, regardless of the time and place.²⁶

In the current study, although the crude odds ratio indicated a significant association between fear or anxiety and reduced screening uptake, this association was no longer significant after adjustment, suggesting the influence of confounding factors. In contrast, research by Salama *et al.* on Egyptian women found that fear of embarrassment (aOR, 2.6; 95% CI, 1.4–5.1; $P = 0.004$) and fear of a

positive result (aOR, 2.4; 95% CI, 1.3–4.7; $P = 0.008$) were significant barriers to breast cancer screening. These differences suggest that fear and anxiety may act as stronger deterrents in specific cultural or regional contexts.²⁷ Studies have shown that fear can arise from either emotional responses or information gaps. For instance, one study reported that fear was due to concerns about dying, undergoing surgery, and threats such as divorce or infertility, reflecting both emotional and informational gaps.²⁸ Another study reported that anxiety was due to pain during the procedure and side effects of radiation during mammography, indicating a link between anxiety and misconceptions about breast cancer screening.²⁹ Therefore, proper education about breast cancer screening, along with support from family and friends, can help reduce the impact of fear as a barrier.

In the present study, women who did not report concerns related to cost or insurance were approximately 1.8 times more likely to undergo breast cancer screening compared with those who did. These findings underscore the importance of financial accessibility in promoting participation. Similarly, a study by Hughes *et al.* revealed that women with



copay-focused insurance plans underwent 24 fewer diagnostic breast imaging procedures per 1000 women than those with coinsurance-focused plans (estimate, -0.024 ; 95% CI, -0.037 to -0.011). Women with deductible-based plans also received 16 fewer procedures per 1000 (estimate, -0.016 ; 95% CI, -0.028 to -0.005). Both results were statistically significant, suggesting that higher out-of-pocket expenses are linked to a notable decline in follow-up diagnostic imaging after initial mammograms.³⁰

However, contradictory findings have been reported by Mottram *et al.*, who found that although higher socioeconomic status and income were associated with higher screening attendance, the findings were not statistically significant compared with women of intermediate socioeconomic status.³¹ This suggests that nonfinancial factors, such as a woman's perceived need and health literacy, may also play a role, as those who perceive themselves to be at lower risk may be less likely to seek care, regardless of income.

The present study found that unemployed women had 4.3 times higher odds of viewing the lack of a physician recommendation as a barrier to breast cancer screening. These findings align with research by Abdel-Salam *et al.* in Saudi Arabia, where women with a monthly income of less than 7000 SAR were significantly more likely to report higher perceived barriers to screening ($B = -0.803$, $P = 0.037$). Likewise, a study by Salama *et al.* involving Egyptian women found that unemployed women had a 3.5-fold higher probability of skipping mammography screening, underscoring the critical role economic stability plays in a woman's decision to engage with breast cancer screening programs.^{18,32}

The current study also found that while women with an undergraduate education, unemployed women, and women working in a non-healthcare field initially appeared to have higher odds of perceiving lack of knowledge as a barrier, this association was no longer statistically significant after adjustment. Similarly, neither age nor education level showed any significant association in the adjusted analysis for perceiving a lack of physician recommendation as a barrier. These results suggest that factors other than employment, educational level, and age may play a more important role in perceiving barriers to breast cancer screening. This aligns with the findings of a study by Joho *et al.* on women in Tanzania, where no statistically significant differences were observed based on age or educational attainment.¹⁷

However, a study by Anaba *et al.* found that women with no education were the least likely to participate in breast cancer screening. Conversely, higher education showed a strong positive association with screening uptake (cOR, 8.96; aOR, 6.17).³³

Given the conflicting results in the literature, further research is needed to determine whether educational attainment is a significant barrier to screening uptake.

In the present study, women younger than 40 years were significantly more likely to perceive a lack of knowledge as a barrier to breast cancer screening. Consistent with this finding, another study on young Black women reported widespread knowledge gaps concerning breast cancer prevention.³⁴ Similarly, a study involving mostly women aged 18 to 34 years found that inadequate knowledge about breast cancer was a commonly perceived barrier.¹⁷ Furthermore, a Saudi Arabia-based study demonstrated a significant association between age and lower awareness regarding mammograms.²⁰ Collectively, these findings underscore the challenges of insufficient breast cancer knowledge among young women, representing a critical barrier to early diagnosis.

In addition, married women in the current study exhibited higher odds of perceiving a lack of knowledge as a barrier to breast cancer screening. This contrasts with findings from a study in the UAE, where married women had a higher level of breast cancer knowledge compared with unmarried women.³⁵ Similarly, a study in Yemen reported that single women were less likely to be aware of breast cancer than married women.²⁴ These divergent findings suggest that, although married women may have greater levels of knowledge, their awareness of their own knowledge gaps may contribute to the perception of lack of knowledge as a significant barrier.

This study identifies key barriers to breast cancer screening in the UAE, with insurance coverage and physician recommendations being significant predictors of participation. Additionally, significant predictors of perceived barriers, such as employment, age, and marital status, underscore the role of sociodemographic factors in shaping women's perceptions of breast cancer screening. These findings emphasize the need for comprehensive strategies, such as community initiatives, awareness campaigns, and active engagement by healthcare professionals, to close the gaps hindering early detection. Future studies should explore these issues in more depth across diverse populations to tailor interventions accordingly.

Limitations

This study has several limitations. First, the convenience sampling may have limited the diversity of the study population and may not accurately represent the broader population of women in the UAE, potentially leading to underrepresentation of certain demographic groups. Therefore, the results are not generalizable to the entire female population



in the UAE. Second, because the data were collected through a self-administered questionnaire, response bias may have influenced the accuracy of the responses. Third, potential confounding variables not assessed in this study, such as cultural beliefs, communication barriers, family history of breast cancer, and social support, might have influenced the observed associations. Finally, the cross-sectional design of this study limits the ability to establish causal relationships. Further longitudinal studies are needed to elucidate these associations over time.

CONCLUSION

This study identified cost or insurance issues and lack of physician recommendation as significant perceived barriers that influenced the utilization of breast cancer screening. Additionally, sociodemographic factors such as employment, age, and marital status were significantly associated with perceiving these barriers. Addressing these barriers by targeting specific sociodemographic groups and increasing awareness can promote early detection by improving screening rates. Future studies should explore a wider range of barriers and influencing factors to address existing gaps in the literature.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

ETHICAL CONSIDERATIONS

This study was approved by the Institutional Review Board of Gulf Medical University in Ajman, United Arab Emirates (Ref. no. IRB-COM-STD-104-May-2023). The study adhered to the Declaration of Helsinki. Informed consent was obtained from all the participants involved in the study.

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DATA AVAILABILITY

The data related to the study are presented in the article.

AI DISCLOSURE

No AI tool was used for preparing the manuscript of this study.

AUTHOR CONTRIBUTIONS

AARS, SN, and SMW contributed to Conceptualization, Data curation, Formal analysis, Investigation, Visualization, Writing – original draft, and Writing – review & editing. RAA, NAK, and RAA were involved in Conceptualization, Investigation, Methodology, Writing – original draft, and Writing – review & editing. JM contributed to Conceptualization, Formal analysis, Methodology, Project administration, Supervision, Writing – original draft, and Writing – review & editing.



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