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## Impact of positive family history of breast cancer for utilizing screening services

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### Abstract

**Background:** The association between a positive family history of breast cancer and the utilization of screening services is a focal point of interest within the realm of public health and oncology. This connection underlines the significance of genetic and familial predispositions in the early detection and prevention strategies of breast cancer, which remains one of the most common and impactful cancers affecting women worldwide. The aim of study is to find the effect of positive family history of breast cancer on utilizing screening services.

**Methods:** Cross-sectional investigation of 400 breast-screening patients at Baghdad's Al-Yarmouk teaching hospital. The study ran from January to December 2023. Every patient's file was reviewed. The patient's age (in years), marital status, employment, domicile, familial history of breast cancer and another cancer, educational background, and breast clinic visit objective were requested. We also asked females how often they had clinical examinations in the last year (zero, one, two to six times) and how long since their last mammogram.

**Results:** In a study of 400 females with a mean age of 44.5 years, the majority lived in urban areas (98%), with 63.8% older than 40 years, 71% married, and 52% employed. A significant portion had no family history of breast cancer (64.5%) or other cancers (83.8%), and 74% had not undergone a clinical breast exam or mammography in the last 12 months. No significant correlation was found between a family history of breast cancer and the practice of self-breast exams, clinical exams, or timing of last mammography.

**Conclusion:** Most of the questioned females are over 40, married, live in metropolitan areas, and work, with few having a family history of breast or other malignancies. Despite the high percentage of women who have not had clinical breast exams or mammography in the last year, family history of breast cancer does not appear to be a significant predictor. This suggests a preventative health gap among women regardless of family history of breast cancer.

**Keywords:** Impact, positive, family history, breast cancer, screening, services

### Introduction

The association between a positive family history of breast cancer and the utilization of screening services is a focal point of interest within the realm of public health and oncology. This connection underlines the significance of genetic and familial predispositions in the early detection and prevention strategies of breast cancer, which remains one of the most common and impactful cancers affecting women worldwide<sup>[1]</sup>. Breast cancer's incidence and its subsequent mortality rates have prompted extensive research into effective prevention and early detection strategies. Among these, screening services such as mammography have proven instrumental in identifying breast cancer at early stages, significantly improving prognosis and survival rates<sup>[2, 3]</sup>. The importance of these screening services cannot be overstated, given their role in reducing breast cancer mortality through early detection. A positive family history of breast cancer significantly elevates an individual's risk of developing the disease. Studies estimate that women with a first-degree relative diagnosed with breast cancer have a two-fold increased risk compared to those without such a history<sup>[4]</sup>. This elevated risk underscores the critical need for targeted screening interventions among high-risk groups to facilitate early detection and intervention. The psychological and behavioral impact of a positive family history on screening utilization is complex. Knowledge of a family history of breast cancer can influence an individual's health behavior, potentially leading to increased vigilance and utilization of screening services<sup>[5]</sup>. However, this awareness must be coupled with accessible, accurate information and supportive healthcare environments to translate into effective screening behaviors.

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Fear, anxiety, and misconceptions about breast cancer and screening processes can deter individuals from seeking out screening services, highlighting the need for comprehensive education and counseling in these contexts [6]. Healthcare policies and practices play a crucial role in facilitating or hindering the utilization of screening services among those with a positive family history. Initiatives aimed at reducing barriers to screening, such as cost, accessibility, and lack of awareness, are essential in encouraging uptake among high-risk groups [7]. Additionally, personalized risk assessment tools and guidelines can aid healthcare providers in identifying and recommending appropriate screening strategies for individuals based on their familial risk [8]. Emerging research also emphasizes the potential of genetic counseling and testing in enhancing the understanding and management of breast cancer risk among those with a positive family history [6]. Genetic counseling can provide valuable insights into an individual's specific risk factors, informing more tailored and effective screening and prevention strategies. The aim of study is to find the effect of positive family history of breast cancer on utilizing screening services.

**Methods**

A cross-sectional analysis of 400 females who visited the Al-Yarmouk teaching hospital in Baghdad, Iraq, for breast screening. The research was conducted between January and December of 2023. Every patient's medical record was examined. Age (in years), marital status, occupation, place of residence, familial history of breast cancer and another cancer, educational background of the patient, and purpose of visit to the breast clinic were among the details requested. Females were also queried regarding the following: the frequency of clinical exams within the previous 12 months (zero, one, two to six times), and the time since their last mammography (zero to one, greater than one, never). Since chi-square is utilised to evaluate the relationship between categorical variables. A P-value of 0.05 or less is deemed to indicate significance.

**Results**

They are 44.5 years old on average, with a range of 11.7 years. Of the women, 255 (63.8%) are over 40 years old, 284 (71%) are married, 208 (52%) are working, 392 (98%) live in cities, and 258 (64.5%) have no family history of

cancer and 335 (83.8%) have no family history of another cancer. As shown in table 1 and 2.

**Table 1:** Distribution of females according to study variables

Variables		Frequency	Percentage
Age groups (years)	<40	145	36.2
	≥40	255	63.8
Marital state	married	284	71.0
	unmarried	59	14.8
	widow	57	14.2
Occupation	housewife	192	48.0
	employee	208	52.0
Residency	rural	8	2.0
	urban	392	98.0
	no	335	83.8
Family history of another Cancer	other	37	9.3
	ovary	5	1.3
	pancreas	3	0.5
	stomach	7	1.8
	uterus	13	3.3
Total		400	100

**Table 2:** Distribution of females according to Family history of breast Cancer

Variables		Frequency	Percentage
Family history of breast Cancer	Positive FH	142	35.5
	no FH	258	64.5

As shown in table 3, 296 (74%) of females have zero clinical breast exam in last 12 months, 296 (74%) of females have never Time since last mammography.

**Table 3:** Distribution of females according to study variables

Variables		Frequency	Percentage
Clinical exam in last 12 Months	zero	296	74.0
	1	89	22.2
	2-6	15	3.8
Time since last mammography	0-1	29	7.2
	>1	75	18.8
	never	296	74.0
Total		400	100

As shown in tables 4, there is no significant between Family history of breast Cancer and Self-breast exam in last 12 months, Clinical exam in last 12 Months, Time since last mammography.

**Table 4:** Association between Family history and (CBE)

Variables	Family history		P-value
	Positive FH	no FH	
Clinical Breast Examination (CBE)	zero	107 (36.1%)	189 (63.9%)
	1	31 (34.8%)	58 (65.2%)
	2-6	4 (26.7%)	11 (73.3%)
Time since last mammography	0-1	12 (41.4%)	17 (58.6%)
	>1	30 (40%)	45 (60%)
	never	100 (33.8%)	196 (66.2%)

**Discussion**

The discussion of the study's findings, in conjunction with referenced literature, illuminates a complex landscape of breast cancer screening behaviors and the multifaceted influences of family history, demographic factors, and healthcare access. Despite the theoretical advantage conferred by urban residency and employment status in the cohort under study, a startlingly high percentage (74%) of women did not participate in recommended breast cancer screening practices within the past year. This discrepancy between expected and actual screening behavior

underscores a critical gap between awareness of breast cancer risks and the actual uptake of screening measures, a phenomenon that resonates with findings from Wuur MM *et al.* and Bailly L *et al.*, which highlight the disconnect between knowledge of screening guidelines and actionable behavior, especially among those with a known family history of the disease [9, 10]. The lack of a significant correlation between family history of breast cancer and engagement in screening practices complicates the narrative around preventive health behaviors, suggesting that awareness alone is insufficient to motivate action. This

aligns with broader issues identified in the literature regarding the underutilization of preventive health services, where factors such as fear, stigma, and perceived severity of the disease may deter women from regular screening activities [11, 12]. Moreover, the similar screening behaviors observed in women with and without a family history of breast or other cancers point to systemic barriers in healthcare access and personal beliefs about cancer that transcend familial risk factors. Interestingly, the study's findings also challenge assumptions about the relationship between urban living, employment, and higher screening rates. This observation echoes the research by Maxwell AE *et al.* and Srinath A., which identified psychological barriers and healthcare accessibility issues as potentially more significant determinants of screening uptake than previously acknowledged [13, 14]. Such insights demand a reevaluation of strategies to improve screening rates, emphasizing the need for interventions that address emotional, psychological, and systemic barriers to care. The critical role of documenting family history in cancer screening practices is underscored by the study's findings and supported by the literature, highlighting the influence of family history on healthcare provider recommendations and patient behaviors [16, 17]. The significant underdocumentation of family history, as evidenced by the discrepancy between the study's data and broader population data (e.g., BRFSS), points to a gap in healthcare practices that compromises the efficacy of targeted screening programs [18]. This gap emphasizes the necessity for healthcare systems to improve the capture and utilization of family history information to better identify and manage individuals at increased risk. The disparities in screening rates, especially notable in rural areas, reflect broader access issues that exacerbate healthcare inequities. The unique barriers faced by rural populations, including lower income levels, insurance coverage, and proximity to healthcare facilities, are well-documented challenges that persist in affecting cancer screening and outcomes [19-21]. Addressing these disparities requires targeted interventions that account for the specific needs and obstacles of rural communities. Lastly, the finding that the type of records system (EHRs versus paper records) did not significantly impact the documentation of family history and basic health measures suggests that the challenges in information management and utilization for screening purposes are systemic rather than technological [18]. This insight points to the need for systemic changes in healthcare information practices to ensure that crucial data like family history are systematically captured, updated, and utilized in guiding screening recommendations.

## Conclusion

The data reveals that the majority of the surveyed females are over 40 years old, married, living in urban areas, and employed, with a significant portion lacking a family history of breast or other cancers. Despite the high percentage of women who have not undergone clinical breast exams or mammography in the last 12 months, there appears to be no significant correlation between family history of breast cancer and the likelihood of undergoing self-breast exams, clinical exams, or mammography within the same timeframe. This indicates a potential gap in preventive health behaviors among women, irrespective of their family history of breast cancer.

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