

From Insights to Impact: Understanding Cancer Screening Choices through Mixed-Methods

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Abstract

Objective: The main objective of this comprehensive mixed-methods investigation conducted in Jordan were to explore and understand men's engagement in cancer screening. **Methods:** The research employed a mixed-methods approach, combining a survey with 209 participants and focus group interviews with 30 individuals. The survey involved quantitative data collection methods to gather information on cancer screening participation rates among men in Amman. Focus group interviews were conducted to collect qualitative data on the factors influencing cancer screening utilization among men in Amman. **Results:** The study revealed a notably low participation rate, with less than 37% of men engaging in cancer screening. The diminished involvement was attributed to several factors, including health illiteracy, language barriers, restricted access to health-related information and screening services, and cultural considerations. **Conclusions:** Based on the findings, the research strongly advocates for tailored interventions that are culturally specific. The emphasis is on the importance of training community health workers to address the identified challenges and enhance both cancer prevention awareness and screening accessibility in Jordan.

Keywords: Cancer Screening- men's health- mixed-methods investigation- health literacy- cultural considerations.

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Introduction

Cancer screening is the process of looking for cancer or pre-cancerous conditions in individuals who do not show any symptoms. The goal of screening is to detect cancer at an early stage when it may be more treatable or even preventable. However, it's important to note that not all types of cancer have established and effective screening methods [1, 2].

The American Cancer Society cites studies showing a significant decrease in colorectal cancer deaths in populations with regular screening using colonoscopy or fecal occult blood tests [3]. Furthermore, the National Cancer Institute highlights research demonstrating that regular mammograms lead to earlier detection and improved survival rates for breast cancer [4].

However, Munakampe et al. [5] explored barriers to cervical cancer screening in Uganda, a Middle Eastern country. It identified factors like language barriers, cultural beliefs about the female body, and limited knowledge about the disease as significant deterrents [5]. Another study by Ninsiima et al. [6] investigated barriers to colorectal cancer screening among adults in Jordan. They

found that misconceptions about the test, fear of a cancer diagnosis, and lack of awareness about screening programs were major obstacles [6]. Cancer screening is an effective method of prevention in Jordan, with various screening tools available [7]. The Department of Health offers screening programs for prostate and colorectal cancers, accessible at public and private healthcare facilities [8]. Despite these services, studies in middle east countries show low participation rates due to barriers like language, misconceptions, and limited knowledge [5, 6]. However, limited research exists on cancer screening among men in Amman, considering cultural differences [9, 10, 5]. This study aims to investigate cancer screening utilization and its influencing factors among men in Amman.

Materials and Methods

The study received ethical approval from the Holistic Health Care Resources (HHCR) committee under the reference number 312-2014. It employed a two-phase mixed-method design, a research approach that combines both quantitative and qualitative methods to provide a comprehensive understanding of a phenomenon.

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For the quantitative phase (Phase 1), participants provided implied consent before completing the survey, which was administered by an interviewer in-person. Data collection took place between June 2022, and April 2023. The survey included 23 questions and took an average of 10 min to complete (including eligibility screening, consent procedures, and survey administration).

A structured questionnaire was employed to gather data for the study's objectives. It began with a brief explanation of the study's purpose and an informed consent statement, followed by three sections. The first section focused on demographics, containing eight questions in both multiple-choice and gap-filling formats, covering variables such as age, gender, monthly income, and educational level. The second section comprised 10 questions related to the screening uptake scale. The final section included five multiple-choice questions regarding screening modalities. At the conclusion of the survey, participants received a copy of the consent form, a thank you note. In total, The authors screened 250 participants, 32 of whom were ineligible. Of the remaining 218 eligible participants, 9 did not complete the survey. Thus, the final analytic sample included 209 participants.

For the qualitative phase (Phase 2), the authors involved focus group interviews with 30 participants selected from Phase 1 using purposive sampling. Purposive sampling involves selecting participants based on specific criteria relevant to the research question. In this case, it likely aimed to include individuals with diverse characteristics related to cancer screening utilization [11]. The focus group interviews were designed to explore in-depth the factors influencing cancer screening utilization [12, 13]. This phase aimed to collect qualitative data, likely through discussions and narratives, to identify and understand the underlying themes related to the utilization of cancer screening services [14, 15].

Quantitative data from Phase 1 were analyzed using descriptive statistics [16], which involves summarizing and presenting data to provide an overview of the survey results. On the other hand, qualitative data from Phase 2 underwent content analysis [14]. Content analysis is a method used to systematically analyze the content of textual, visual, or audio data, in this case, the transcripts of focus group interviews [17, 18]. The goal was likely to identify and categorize themes, patterns, or key factors that emerged from participants' responses [19].

Overall, this research design allows for a more comprehensive exploration of the factors influencing cancer screening utilization by integrating the strengths of both quantitative and qualitative research methods. The combination of survey data and focus group interviews provides a more nuanced and holistic understanding of the complexities surrounding cancer screening behavior in the specific context of men in Amman.

Results

Demographic Insights into Study Participants

The survey conducted in Amman, Jordan involved 209 participants, reflecting a diverse demographic profile. The participants were primarily composed of individuals

from three main nationalities: Syrian (32.5%), Palestinian (33.4%), and Iraqis (34.0%). Notably, there was one participant who did not specify their nationality. This blend of nationalities reflects the multicultural nature of the region and adds richness to the survey's data [20].

In terms of age distribution, the participants exhibited a wide range. Approximately 24.7% fell within the 41 to 50 age group, while a majority (56.0%) were between 51 and 60 years old. Furthermore, 19.3% of the participants were 61 years old or older. This diversity in age groups suggests a comprehensive representation of different generations, allowing for a more nuanced understanding of the issues under consideration. The educational background of the participants varied significantly. About 21.2% had attained tertiary education or higher, indicating a segment of the population with advanced academic qualifications. On the other hand, 21.9% had completed only primary education, and the majority (56.9%) had achieved secondary education. This educational diversity is crucial for interpreting the survey findings, as it reflects varying levels of access to knowledge and resources among the participants.

Regarding employment status, the participants displayed a range of occupations. A minority, comprising 30.6%, reported being employed either full- or part-time. In contrast, a substantial majority (57.4%) identified as homemakers, highlighting the importance of considering different socio-economic backgrounds and roles within the community (Table 1). A small percentage of participants, specifically 1.8%, reported a family history of cancer. While this percentage may seem low, it underscores the importance of investigating potential health concerns within the population. Family history can be a crucial factor in understanding the prevalence and impact of diseases, including cancer, within communities [21].

In conclusion, the survey in Amman, Jordan, involving 209 participants, provides a comprehensive snapshot of the region's demographic diversity. The inclusion of individuals from different nationalities, age groups, educational backgrounds, and employment statuses contributes to the richness and depth of the data collected. This diversity allows for a more nuanced analysis of the survey findings and facilitates a better understanding of the challenges and opportunities within the community [22].

Cancer screening

The survey findings revealed extremely low rates of cancer screening participation among participants in Amman. Specifically, the uptake of prostate specific antigen test among men aged 40 or older was only 36.9%, while digital rectal examination for men aged 61 and above were completed by just 25.9% of participants. Colorectal cancer screening had an even lower uptake, with only 9.9% of those aged 50 or older having undergone screening. Similarly, prostate cancer screening was notably low, with only 4.9% of male participants aged 50 or older having received a PSA test. These statistics highlight a significant underutilization of cancer screening services.

Obstacles to the utilization of cancer screening

By analyzing qualitative data gathered from focus

Table 1. Demographic Insights into Study Participants (N= 209)

Variables (Mean, SD)	N (%)
Age	
41 to 50 years old	51 (24.7)
51 and 60 years old	117 (56.0)
61 years old or older	41(19.3)
Nationalities	
Syrian	68 (32.5)
Palestinian	69 (33.4)
Iraqis	71 (34.0)
Unknown	1 (2)
Marital status	
Single	3 (1)
Married	200 (96)
Divorced/widowed	6 (3)
Educational level	
Primary	45 (21.9)
Secondary	118 (56.9)
Tertiary	44 (21.2)
Employment Status	
Full or Part-time	63 (30.6)
Homemakers	119 (57.4)
Retired	27 (12)
Salary/month	
More than 800 JD	188 (90)
Less than 800 JD	21 (10)
Insurance	
Yes	198 (95)
No	11 (5)
Family History of Cancer	
Yes	206 (98.2)
No	3 (1.8)

group interviews, three key factors have been recognized as hindrances that deterred participants in the study from accessing cancer screening services. The following sections will provide a detailed elaboration of these factors.

Lack of health literacy

The study participants exhibited a noteworthy lack of knowledge regarding cancer, encompassing its prevalence, consequences, and underlying causes. Within this context, prevalent misconceptions were identified, wherein some attributed cancer to divine acts or trivial, unhealed wounds. Unfounded beliefs linking cancer to factors like wearing tight clothing and consuming frozen foods also surfaced. Moreover, a prevailing sentiment among many participants was that cancer was inherently incurable [23].

Furthermore, there was a limited awareness among participants regarding advanced technology employed in cancer detection, and a lack of specific knowledge concerning various screening methods. Notably, the

prevailing perception among the study cohort was that screenings were deemed necessary solely in response to physical discomfort or noticeable symptoms [24].

The culmination of these findings underscores a significant deficiency in the participants' comprehension of the purpose and importance of cancer screening. The lack of accurate information about cancer, coupled with misconceptions and inadequate awareness of screening methods, points to a critical need for targeted educational initiatives aimed at enhancing health literacy in this regard [25, 26]. Addressing these knowledge gaps is essential for fostering a proactive approach to cancer prevention through regular screenings, ultimately contributing to improved health outcomes and early detection of the disease.

Challenges in Accessing Health Information

Participants in the study underscored that the restricted availability of healthcare professionals negatively influenced their engagement with cancer screening services. The language barrier emerged as a prominent obstacle, creating challenges in effective communication with healthcare providers and comprehending medical information [27]. Some participants proposed that government-backed initiatives to enhance medical information comprehension within the population could ameliorate access to healthcare [28]. Additionally, concerns were raised about language barriers potentially impeding healthcare professionals from fully understanding patients' symptoms or concerns, thereby complicating the healthcare dynamic. In summary, the research emphasized the pivotal role of addressing language barriers in facilitating enhanced utilization of healthcare services.

To surmount language barriers in healthcare settings, certain participants leaned on the support of friends or family members who accompanied them as caregivers. This collaborative approach was deemed indispensable for comprehending medical instructions and information relayed by healthcare professionals, serving as a vital means to bridge the language gap and facilitate effective communication throughout healthcare encounters.

Despite the government's efforts to provide health information, some participants found these materials difficult to understand, describing them as overly formal and not user-friendly, especially for those who may not be familiar with medical terminology [29, 30].

Culturally-Informed Health Communications

Despite recognizing the importance of cancer screenings, family obligations and demanding work schedules, especially for males, frequently posed barriers to attending these screenings. Irregular working hours and prolonged wait times at healthcare facilities were identified as key hindrances.

Additionally, individuals from a male background emphasized their inclination towards healthcare providers of the same gender [31]. They showed a preference for male doctors specifically for prostate and colorectal screenings, and male participants indicated a desire for same-sex doctors during routine health checkups. These preferences were influenced by cultural and religious

factors, highlighting the importance of aligning healthcare practices with deeply ingrained beliefs [32].

In conclusion, cultural and religious factors significantly shape the healthcare decisions and access to cancer screenings. The intricate interplay of familial dynamics, work commitments, and cultural preferences underscores the importance of tailoring healthcare services to align with the unique needs and values of this demographic.

Discussion

The research findings verified a significantly low rate of cancer screening participation among men, aligning with previous studies [33-35]. A mere 37% or less had engaged in any dedicated cancer screening tests. This highlights a pressing necessity for implementing strategies aimed at increasing awareness among men regarding the crucial role of cancer screening in preventive healthcare.

The research also unveiled that men possessed limited awareness about cancer and harbored misconceptions about the illness, echoing observations made in studies conducted in Western nations [36-38]. This deficient understanding and the presence of misconceptions emerged as substantial impediments to the adoption of cancer screening. Effectively addressing these challenges necessitates targeted educational campaigns to enhance awareness about cancer prevention measures, with a specific focus on the significance of screening. Implementing comprehensive health education programs in schools becomes instrumental in educating young individuals about health promotion and the critical role of early cancer detection through screening.

Engaging in partnerships with community centers can serve as a catalyst for impactful health education interventions [39, 40]. Employing a range of diverse methods, including presentations, videos, informational booklets, group discussions, and individual counseling, proves effective in disseminating health information, particularly regarding cancer prevention. Essential to the success of these interventions is a commitment to cultural sensitivity in their design, ensuring linguistic appropriateness and cultural relevance.

A pivotal strategy is integrating community health workers into these initiatives [41, 42]. By leveraging individuals who share the same cultural background as the participants, the interventions can draw on their firsthand understanding of cultural beliefs and practices. This approach enhances the effectiveness of the interventions by establishing a connection built on shared experiences and cultural nuances [39, 40]. Addressing the substantial barriers to cancer screening arising from insufficient health knowledge and misconceptions underscores the importance of healthcare professionals, including nurses, possessing effective communication skills in patient interactions. Implementing training programs becomes crucial to augment their proficiency in providing culturally sensitive healthcare services [43]. These strategies are designed to enhance the dissemination of information on cancer prevention, especially among individuals with

limited or low health literacy levels.

In conclusion, men encounter significant challenges contributing to a low adoption of cancer screening, encompassing poor health literacy, language barriers, limited access to health information and screening services, and cultural factors. To effectively overcome these hurdles, the implementation of culturally sensitive educational interventions is essential. These initiatives should be led by Community Health Workers, aiming to improve understanding of cancer prevention measures among men and heighten awareness about the screening services that are accessible to them.

Author Contribution Statement

Mr. Rami Hejase: Conceived, designed the experiments, performed the experiments; and wrote the paper. Dr. Ahmad Mahmoud Saleh: Analyzed and interpreted the data and wrote the paper. Dr. Hassanat R. Abdel-Aziz: Contributed reagents, materials, analysis tools, or data and wrote the paper.

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Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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