RESEARCH ARTICLE

Editorial Process: Submission:01/20/2024 Acceptance:05/05/2025

Awareness of Cancer Risk Factors, Protective Factors, Symptoms and Barriers to Seek Medical Advice among Adult Population

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Abstract

Background: Cancer is the second leading cause of death worldwide with a growing burden and most cases are attributable to modifiable factors and behaviors. Increased cancer awareness is the cornerstone to promote early detection and increase survival rates. **Aim:** To assess the public awareness level regarding cancer risk factors, warning symptoms, practice protective factors, and barriers to seeking medical help among the Saudi population. **Methods:** A cross-sectional community-based study was conducted among adult Saudis using the Arabic version of Cancer Awareness Measure. Data were collected using a self-administered online survey. **Results:** Among the 1101 participants surveyed, one-third had a family history of cancer. Key risk factors included a BMI ≥ 25 kg/m2 (51.68%), consumption of smoked, processed, and red meat (25%), and insufficient intake of fruits and vegetables (53.3%). The majority did not exercise regularly (76.2%), with 19.4% being smokers and 46.3% exposed to passive smoking. Social media was the primary source of cancer information. However, 70.8% did not engage with cancer-related content, and 85.3% had not undergone regular cancer screening. The most recognized symptom was an "unexplained lump or swelling" (72.8%), and smoking was identified as the top risk factor (78.0%). Barriers to seeking early medical advice included fear (67.0%) and worry about diagnosis (66.5%). On average, participants recognized 4 out of 9 warning signs, 5 out of 11 risk factors, and 5 out of 11 barriers, indicating the need for increased awareness and proactive health behaviors. Further, many significant differences were found based on participants' demographics. **Conclusion:** It is imperative to implement population-based programs aimed at raising public awareness and encouraging the use of cancer screening and preventative measures. It is advised that healthcare providers step up their efforts to educate the public about cancer.

Keywords: Cancer awareness- Saudi Arabia- adult population

Asian Pac J Cancer Prev, **26 (7)**, 2345-2352

Introduction

Cancer is a major global health challenge with a growing burden on the healthcare system, patients, and families, which is ranked as the second leading cause of death with approximately 9.6 million deaths in 2018 [1]. The incidence and prevalence of cancer are projected to increase in the next decade both globally and in Saudi Arabia [2]. By the end of 2021, there were more than 555 thousand cases in Saudi Arabia that were officially recorded [3]. According to the Saudi cancer registry, the most common cancers in Saudi Arabia were breast and colorectal cancers [4]. The sharp increase in cancer incidence is related to the remarkable changes in the community lifestyle, lack of cancer awareness, lack of screening and early detection programs, and social barriers toward cancer investigations [2, 5]. Increased life expectancy in Saudi Arabia is associated with a higher incidence of chronic diseases including cancer [6, 7].

The majority of cancers are caused by potentially modifiable risk factors including tobacco, alcohol, unhealthy diet, obesity, physical inactivity, infection, pollution and iodine and vitamin D deficiency, exposure to sunlight and radiation, and hormone replacement therapy [8], along with non-modifiable risk factors include aging and heredity [9]. Evidence confirms that cancer is a preventable disease, where in the Eastern Mediterranean (EM) region, one-third of cancer cases could be prevented

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through healthy lifestyle habits [10]. This region is known to have high-risk factors including high smoking rates of various smoking products [11] and among both genders [12]. The American Cancer Society (2019) [13] documented seven early signs of cancer abbreviated in "C-A-U-T-I-O-N" which stands for "Change in bowel or bladder habits, A sore that does not heal, unusual bleeding or discharge, Thickening or lump in the breast or elsewhere, Indigestion or difficulty in swallowing, Obvious change in a wart or mole and Nagging cough or hoarseness".

Evidence-based practice and research have proven that screening is the most important health strategy for early detection [6]. Early detection of cancer increases people's survival rates, improves experiences of care, lowers morbidity and mortality, and improves quality of life [14]. Population-based screening modalities are recommended for common types of cancers including breast self-examination or clinical breast examination and mammography for breast cancer [5] and stool-based test or visual examination for colorectal cancer [13]. Screening services for cancer are widely and freely available in Saudi Arabia. However, the utilization of these services and compliance rates with screening are low [15]. El Bcheraoui et al. [16] gave an example when reported that 92% of 1,135 women aged 50 years or older never underwent a mammogram and 89% did not have a clinical breast examination in the last year.

There are several barriers to timely seeking cancer screening including fear of screening results and finding illness, financial constraints, lack of knowledge and self-efficacy, and lack of medical insurance or transportation for patients who need assistance [17-19]. Cultural and educational hurdles, embarrassment, fear, and scarcity of patient awareness programs may be contributing factors to the low screening rates [15]. Women, elderly, less educated, and unmarried populations were found to have more perceived barriers to seeking medical attention [20, 21].

Previous research suggests that awareness of cancer risk factors, warning symptoms, primary prevention, screening programs, and diagnosis and treatment in the early stages might be associated with better outcomes [22], lowering cancer burden [10] and reducing cancer mortality and morbidity [23]. Ministry of Health's and universities community services run several cancer education and screening programs in the community, institutions like universities, universities [24]. Despite numerous health promotion programs aimed at enhancing community awareness regarding cancer risk factors and preventive measures [25, 26], several studies indicated a low level of awareness about cancer symptoms, risk factors, and screening in various countries. This trend has been observed in many countries such as Oman [20], Saudi Arabia [15], Malaysia [27], and Jordan [17]. Elmaghraby and colleagues, [28] studied the public awareness toward cancer screening in Saudi Arabia and have confirmed that participants' showed a low awareness level regarding cancer and cancer screening. Even among people who showed a high level of awareness toward cancer signs, risk factors and screening, Barasheed et al. [29] have found their awareness not reflected in their behaviors in terms of cancer-protective measures. Low cancer awareness has negative consequences for people's health and associated with delays in seeking medical help and poor survival [30]. Furthermore, awareness regarding timely check-ups and frequency was poor. For instance, Munishi et al, [31] revealed that 60% were unaware of local cancer screening services and Zubaidi et al. [32] found that 42.9% believed that the screening should begin when the symptoms start. Therefore, the present study seeks to 1) evaluate the Saudi adult population's awareness of cancer warning symptoms and risk factors, and 2) investigate the typical barriers to getting timely medical attention.

Materials and Methods

Design and Setting

A cross-sectional descriptive design was used by applying an electronic online survey. Connor and colleagues, [33] support using online data collection for the Cancer Awareness Measure to generate a representative sample and investigate a greater range of cancer-related issues. The study was carried out in different cities in Saudi Arabia.

Sampling

The snowballing sampling technique was used, where participants were encouraged to share the online survey link with their colleagues and relatives. To be eligible for this study, a person had to meet the following criteria: (1) be at least 18 years old; (2) be able to read and comprehend Arabic language; and (3) have access to the internet and a phone.

Measurement

Demographic data and present health profile (including age, gender, education level, marital status, employment status, study or working in health fields, medical history, weight, height, physical activity, smoking, diet, reading about cancer, adopting protective measures, and annual checkup) were collected, which were added based on comprehensive literature review. The major main study variables were measured using the Cancer Awareness Measure (CAM) questionnaire, which is a validated standardized measurement for cancer awareness among the general population [34], and is known to have solid psychometric properties [35].

The CAM questionnaire has three sections. The first section includes a list of nine possible cancer warning signs/symptoms using a 3-point scale (No, I do not know, Yes). The second section comprised cancer risk factors using a 5-point Likert scale (1= Strongly Disagree, 5 Strongly Agree), which were categorized into three categories (Disagree, Unsure, and Agree). The third section reported the perceived barriers (emotional, practical, and service) to timely seeking cancer care, with responses categorized as Yes, No, and Do not know. The total number of recognized symptoms, risk factors, and perceived barriers was totaled. The questionnaire was translated into Arabic and back-translated by experts using the WHO translation criteria. Pilot testing was conducted

on randomly selected participants, and no modifications were applied to the Arabic version. The instrument showed sound psychometric proprieties in this study with reliability score of.843. The internal reliability of the original CAM was satisfactory with Cronbach's alpha above 0.7 and cited as a validated survey [34].

Data Collection Procedures

After receiving the study link including a brief explanation and indicating willingness to participate via a consent form in the survey's introduction letter, participants were cordially invited to complete a self-administered e-questionnaire. Sociodemographic information and health profile, cancer risk factors, symptoms, and barriers to seeking medical advice were gathered. Completing the surveys took approximately 10 minutes. The data collection was conducted through circulating the survey online link. The time frame of data collection was from Nov 2023 to Jan 2024.

Ethical considerations

The study protocol was approved by the Institutional Review Board (IRB) of Al-Ghad Colleges for Applied Medical Sciences, Riyadh, Saudi Arabia. An introductory letter was written to study participants informing them of the goal of the study, their consent, and their right to withdraw or decline participation at any time. Since no identifying or personal information was gathered, participants' anonymity and data confidentiality were preserved.

Statistical Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS, Version 25). Initially, all demographic and study variables were described and summarized using descriptive statistics (means, standard deviations, frequencies, and percentages). Total scores for the study variables were computed, and various inferential statistical tests (t-test and analysis of variance) were employed to assess differences in the study variables based on participants' demographics. A significance level of $p<.05$ was applied to all statistical tests.

Results

Sample Demographics and health profile

The study involved 1101 participants, primarily aged 40 years and older, revealing that approximately one-third had a family history of cancer. Among the participants, 65.6% were female, and 64.7% had a bachelor's level of education. About half had a body mass index (BMI) of ≥ 25 kg/m^2, while 25% reported consuming smoked, processed, and red meat, and 53.3% did not consistently consume sufficient fresh fruits and vegetables. The majority (76.2%) did not engage in regular exercise. Smoking was reported by 19.4%, and 46.3% reported exposure to passive smoking. Notably, social media was the primary source of cancer information (67.1%).

Despite a desire for health information about cancer, 70.8% reported not reading or watching cancer information, and 88.7% had never attended a cancer awareness camp. However, 55.8% indicated they would seek immediate medical advice upon noticing alarming symptoms, and more than half expressed a willingness to avoid known cancer risk factors. Astonishingly, 85.3% had not undergone regular cancer screening tests. On a positive note, 77.3% would participate in cancer screening if it were freely available and accessible. These findings underscore the need for targeted awareness campaigns,

Table 1. Participants' Demographics, Health Profile, and Perception (N=1101)

Variable	Categories	n (%)
Age	18-39	764 (69.4%)
	≥ 40	337 (30.6%)
Gender	Male	379 (34.4%)
	Female	722 (65.6%)
Marital Status	Married	524(47.6%)
	Single	577(52.4%)
Level of Education	School	163(14.8%)
	Diploma	129(11.7%)
	Bachelor	712(64.7%)
	Postgraduate	97 (8.8%)
Study or work in health fields	Yes	345 (31.5%)
Having cancer	Yes	20 (1.8%)
Work	Yes	545 (49.5%)
Family history of cancer	Yes	363 (33.0%)
Smoking	Yes	214 (19.4%)
Passive Smoking	Yes	510 (46.3%)
Exposure to sunlight	Yes	257 (23.3%)
BMI	≥ 25	569 (51.68%)
Eating smoked, processed, and red meat	Yes	275 (25.0%)
Eating fresh fruits and vegetables in sufficient quantities consistently	Yes	514 (46.7%)
Exercise regularly	Yes	262 (23.8%)
Reading or watching about cancer	Yes	322 (29.2%)
If you had a symptom that you thought might be a sign of cancer, how soon would you contact your doctor to make an appointment to discuss it?	Immediately	614 (55.8%)
Have you had regular screening tests for cancer?	Yes	162 (14.7%)
Having chronic diseases	Yes	199 (18.1 %)
Is it easy to access to examination and treatment centers	Yes	926 (84.1 %)
Perceived adequacy of community awareness about cancer	Yes	408 (37.1%)
If you know about a risk factor for cancer, do you work to avoid it?	Yes	577 (52.4%)
Would you like to receive health information (health education) about cancer?	Yes	892 (81%)
If you had a free cancer screening at a place available to you, would you have it?	Yes	853 (77.5 %)
Have you ever attended a cancer awareness camp before?	Yes	124 (11.3 %)
Cancer in its early stages may be asymptomatic	Yes	632 (57.5%)

Table 2. Awareness Regarding Cancer Warning Signs, Risk Factors, and Barriers to Seeking Medical Advice (N=1101)

Item	Yes	No	Do not know
Warning signs			
1. Unexplained lump or swelling	801 (72.8%)	128 (11.6%)	172 (15.6%)
2. Persistent unexplained pain	59 2(53.8%)	210 (19.1%)	299 (27.2%)
3. Unexplained bleeding	489 (44.4%)	239 (21.7%)	373 (33.9%)
4. Persistent cough or hoarseness	318 (28.9%)	351 (31.9%)	432 (39.2%)
5. Persistent change in bowel or bladder habits	427 (38.8%)	222 (20.2%)	452 (41.1%)
6. Persistent difficulty swallowing	348 (31.6%)	291 (26.4%)	462 (42.0%)
7. Change in the appearance of a mole	445 (40.4%)	279 (25.3%)	377 (34.2%)
8. Sore that does not heal	410 (34.2%)	255 (23.2%)	436 (39.6%)
9. Unexplained weight loss	566 (51.4%)	184 (16.7%)	351 (31.9%)
	Disagree	Not sure	Agree
Risk Factors			
1. Smoking any cigarettes at all	145 (13.2%)	97 (8.8%)	869 (78.0 %)
2. Exposure to another person's cigarette smoke	139 (12.6 %)	269 (24.4%)	693 (62.9%)
3. Drinking more than 1 unit of alcohol a day	168 (15.3 %)	141 (12.8%)	792 (71.9 %)
4. Eating less than 5 portions of fruit and vegetables a day	297 (27.0 %)	409 (37.1%)	395 (35.9 %)
5. Eating red or processed meat once a day or more	220 (20.0 %)	461 (41.9%)	420 (38.1 %)
6. Being overweight (BMI > 25)	196 (17.8%)	519 (47.1%)	386 (35.1 %)
7. Getting sunburn more than once as a child	226 (20.5%)	511 (46.4%)	364 (33.1 %)
8. Being over 70 years old	340 (3.9 %)	432 (39.2%)	329 (29.9 %)
9. Having a close relative with cancer	223 (20.3 %)	283 (25.7%)	595 (54.0 %)
10. Infection with HPV (Human Papillomavirus)	169 (15.3 %)	616 (55.9%)	316 (28.7 %)
11. Doing less than 30 minutes of moderate physical activity 5 times a week	268 (24.3 %)	461 (41.9%)	372 (33.8 %)
	Yes	No	Do not know
Barriers			
1. Too embarrassed	347 (31.5%)	664 (60.3%)	90 (8.2%)
2. Too scared	738 (67.0%)	312 (28.3%)	51 (4.6%)
3. Worried about wasting the doctor's time	248 (22.6%)	795 (72.2%)	58 (5.3%)
4. My doctor would be difficult to talk to	405 (36.7%)	653 (59.3%)	43 (3.9%)
5. Difficult to make an appointment with my doctor	533 (48.4%)	521 (47.3%)	47 (4.3%)
6. Too busy to make time to go to the doctor	562 (51.0%)	477 (43.3%)	62 (5.6%)
7. Too many other things to worry about	574 (52.1%)	476 (43.2%)	51 (4.6%)
8. Difficult for me to arrange transport to the doctor's surgery	391 (35.6%)	667 (60.6%)	43 (3.9%)
9. Worried about what the doctor might find	732 (66.5%)	317 (28.8%)	52 (4.7%)
10. Not confident talking about my symptoms with the doctor	419 (38.1%)	624 (56.7%)	58 (5.3%)
11. No health insurance to cover screening and treatment	540 (49.0%)	476 (43.2%)	85 (7.7%)

especially regarding screening practices, among the surveyed population (Table 1).

In Table 2, participants' responses to study variables are detailed. The most frequently recognized cancer symptom was "unexplained lump or swelling" (72.8%), followed by "persistent unexplained pain" (53.8%) and "unexplained weight loss" (51.4%). However, less than half correctly identified the other 6 out of 9 listed symptoms as indicative of cancer, such as "persistent cough or hoarseness" (28.9%) and "persistent difficulty swallowing" (31.6%). On average, participants recognized 4 out of 9 cancer warning signs (SD= 3). Regarding risk factors, participants generally recognized 5 (SD= 2.8) out of 11 possible risk factors. Smoking was the most identified risk factor for cancer (78.0%), followed by exposure to another person's smoke (62.9%). The most commonly reported barriers to seeking early medical advice were emotional in nature, with 67.0% expressing fear and 66.5% worrying about what the doctor might find. The mean barriers score was 5 (SD= 3.13) out of 11, indicating that emotional concerns were prevalent among participants as obstacles to seeking early medical advice.

The results of the inferential analysis (Table 3) showed that gender, level of education, and family history of cancer were significantly associated with knowledge about cancer signs and risk factors. Also, gender and family history were significantly associated with perceived barriers to seeking medical attention. Female participants

Table 3. Differences between Participants' Sociodemographic and Total Scores of Signs, Risks, and Barriers (N=1101)

	Total Sign Score	Total Risk Score	Total Barriers Score
Gender	P<00.1	P<00.1	P<00.1
Male	3.30+3.13	4.6+2.98	4.42+3.25
Female	4.35+2.83	5.23+2.67	5.28+3.03
Age	P =.16	P=.20	P=.98
18-39	4.07+2.93	5.08+2.76	4.98+3.07
≥ 40	3.80+3.08	4.58+2.86	4.98+3.27
Education	P =.001	P =.001	P =.45
School	3.47+2.93	4.55+2.86	5.02+3.17
Diploma	3.47+2.90	4.88+2.70	5.12+3.41
Bachelor's	4.10+2.94	5.02+275	5.02+2.95
Postgraduates	4.70+3.28	5.96+2.99	4.51+2.95
Marital Status	P =.21	P =.10	P =.053
Married	3.87+3.08	4.86+2.92	4.79+3.18
Single	4.10+2.88	5.14+2.67	5.16+3.08
Family History	P =.002	P =.021	P =.022
Yes	4.38+2.93	5.29+2.74	5.29+3.06
No	3.80+2.99	4.88+2.82	4.83+3.16

exhibited more knowledge regarding signs (4.35±2.83 vs 3.30±3.13, P<00.1), risk factors (5.23±2.67 vs 4.6±2.98, P<00.1) and perceived more barriers to seeking medical advice (5.28±3.03 vs 4.42±3.25, P<00.1) compared to male. Similarly, higher-educated participants exhibited more knowledge regarding signs (4.70±3.28, P<00.1), risk factors (5.14±2.67, P<00.1) and perceived fewer barriers to seeking medical advice (4.51±2.95, P =.45) compared to less-educated participants. Single participants exhibited more knowledge regarding signs (4.10±2.88 vs 3.87±3.08, P<00.1), risk factors (5.14±2.67 vs 4.86±2.92, P =.10, P<00.1), and perceived more barriers to seek medical advice (5.16±3.08 vs 4.79±3.18, P =.053) compared to married participants. Participants with a family history of cancer participants exhibited more knowledge regarding signs (4.38±2.93 vs 3.80±2.99, P =.002), risk factors (5.29±2.74 vs 4.88±2.82, P =.021) and perceived more barriers to seeking medical advice (5.29±3.06 vs 4.83±3.16, P =.022) compared to participants who had no family history. Finally, younger participants had more knowledge about cancer signs and risk factors and similar perceived barriers to seeking medical advice.

Discussion

This study explored the Saudi adult population's awareness of cancer risk factors, warning symptoms, and barriers to seeking medical help. The findings of the study revealed that the majority of the participants had many negative lifestyle behaviors such as not exercising regularly, smoking, and exposure to passive smoking. Such results are common in the region among the general population and even among patients with various chronic illnesses [36, 37]. Similarly, most of them revealed that they do not read or watch information related to cancer and had never attended any cancer awareness camp. However, they expressed their desire to receive cancer information.

A significant majority of the participants have not undergone any cancer screening tests, consistent with findings from other studies in the Arab World focusing on both cancer [25] and non-cancer risk factors [38]. In a study by Abdullah et al. (2020) aimed to explore the level of awareness of colorectal cancer screening. The study revealed that the majority of the participants were not heard about the screening test. The observed low levels of information reading and screening participation could potentially be attributed to the absence of educational programs that focus on risk people throughout school, internet and social media as it was reported as the most common source of information absence of a national program addressing cancer and cancer screening. Nevertheless, participants expressed a willingness to undergo screening if the tests were both free and accessible to them. In light of these findings, it is imperative for the Ministry of Health to institute a national program and develop policies that promote cancer awareness among the Saudi population. This initiative should emphasize the importance of regular screening and provide accessible, cost-free screening options. By doing so, the Ministry of Health can encourage individuals to enhance their knowledge about cancer and actively participate in routine screening, ultimately contributing to the early detection and prevention of cancer in the population.

The study's revelation that the majority of participants were aware of common cancer symptoms, particularly recognizing unexplained lump, persistent unexplained pain, and unexplained weight loss, aligns with similar findings in literature from various countries [39, 33, 18, 27] that have assessed awareness of signs, symptoms, and risk factors for various cancers. A study conducted by Al-Azri et al. [20] in Oman also found high recognition levels for unexplained lump/swelling, change in mole

appearance, persistent unexplained pain, and unexplained weight loss. Notably, this study observed elevated recognition levels for more visible cancer symptoms such as a lump, persistent pain, and unexplained weight loss. In contrast, a study undertaken by Sabi et al. [40] in Riyadh/KSA, they found that most of the participants do not recognized the warning signs except for thickening or lump in the breast. Consequently, there is a clear need for Saudi healthcare authorities to implement and enhance cancer awareness and control programs. By addressing public awareness and education, particularly regarding visible symptoms, these efforts can contribute to early detection, timely medical intervention, and improved outcomes in the Saudi population.

The current study showed that participants correctly recognized five out of 11 risk factors, with the majority of them reporting smoking and secondary smoking as the most significant risk factor, which is supported by various literature [30, 33, 39, 40]. In this study, around half of the participants complained of passive smoking, therefore increasing awareness that passive smoking has an effect on their health as smoking. Indeed, smoking is known to be highly prevalent in the EM region with various methods of smoking including shisha [41] and poly-smoking [11]. Given the high prevalence of smoking, policymakers in health should take urgent action by implementing stringent regulations to reduce smoking rates and curb the spread of this public health challenge. These interventions are vital for preventing and mitigating the adverse health effects associated with both active and passive smoking, ultimately contributing to the overall improvement of public health in the region.

Furthermore, the participants reported that the most common barrier to seeking medical help was being scared of what the physician may find. This is supported by Farooqi et al. [23] who found that the most common barrier for cancer screening was having obstacles followed by the fear of screening results. Furthermore, Hatem et al. [18] found that the most frequent barriers to not seeking medical help were financial and fear of finding illness. Al-Azri et al. [20] also stated that being scared and worried about what the doctor might find were barriers to seek medical help. Awareness programs should target these issues and encourage potential cancer patients to timely seek help to promote early detection of cancer, which is known to enhance the management outcomes.

The findings of this study found that female and highly educated participants were more knowledgeable regarding cancer signs, and risk factors, and perceived more barriers to seeking medical help than men. Similar results were reported by Algamdi, Gonzales and Farah, [30] Ibrahim et al. [39] and Abdel-Salam et al. [42]. Interestingly, Barasheed et al. [29] stated that females reported a higher level of knowledge about colorectal cancer screening as compared to males. They also found that the youngest age group had a higher level of awareness as compared to other age groups. In contrast, there was no relationship between the educational level of participants and their awareness of colorectal cancer screening. This finding may be related to the fact that their study focused on one type of cancer (colorectal). Overcoming the barriers of seeking medical help could be done by informing the population about the benefits of early recognition of cancer and empowering them to take care of their health. In addition, the health care provider must take a role in encouraging the population to do regular cancer checks through well-designed health education programs.

Strengths and limitations

Our study possesses notable strengths, including the use of a globally validated cancer awareness measure, which enhances the credibility and comparability of our findings. Also, recruiting participants from various cities in Saudi Arabia may enhance the generalizability of the results to a broader population. The frequency matching applied to significant demographic characteristics in our population-based sample is another strength, particularly considering the recruitment of a relatively large sample size. However, it is important to acknowledge some potential limitations. The reliance on closed-ended questions might have limited the depth of understanding regarding participants' knowledge and practices related to cancer screening. Future qualitative research could offer valuable insights by allowing participants to elaborate on their experiences and perspectives. Collecting data using an electronic link is another study limitation that restrict participant to those have electronic devices and Internet access. Lastly, the study's sample, predominantly composed of young people, who are the majority of internet users, may introduce a bias towards this demographic. Considering the unique characteristics of this group, it is essential to interpret the findings with an awareness of potential generational influences. Despite these limitations, the study's strengths contribute valuable insights to the existing body of knowledge on cancer awareness and screening practices.

In conclusion, our study, which investigated the awareness of cancer risk factors, warning symptoms, and barriers to seeking medical help among the Saudi adult population, has revealed the need for increased efforts to enhance knowledge levels. The findings suggest that encouraging individuals to utilize accurate sources of health-related information and undergo necessary screening tests is crucial for improving the overall understanding of cancer within the Saudi population. To address these gaps in knowledge, it is recommended to implement educational programs tailored to the specific needs of the community. These programs should focus on providing accurate and relevant information about cancer risk factors, symptoms, and the importance of seeking medical help promptly. By adapting educational initiatives to the cultural context and preferences of the Saudi population, there is an opportunity to positively impact community behavior and promote a proactive approach to health and early detection.

Author Contribution Statement

All authors have made substantial contribution in this study.

Acknowledgements

The author sincerely thanks the participants who voluntarily participated in this study and shared their valuable experiences. Thanks are also extended to the scientific IRB approved the study.

Data Availability Statement

All data generated and analyzed during this study are included in this manuscript.

Ethics Statement

Ethical approval for the study was obtained from the Research Ethics Committee at Al-Ghad College for Applied Medical Sciences (REC-NO 14-11-2022).

Conflict of Interest

The author declares that there are no conflicts of interest.

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