MEDICAL SCIENCE

Public Awareness of Head and Neck Cancers at Al Baha region, Saudi Arabia

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ABSTRACT

Background: Head and neck cancers contribute substantially to global morbidity and mortality as the seventh most common form of cancer. Our research aims to analyze the community awareness of head and neck cancers in Al Baha, Saudi Arabia. *Methods:* A cross-sectional study was done in the Al Baha region of Saudi Arabia. Data were collected using an online questionnaire and interpreted with the Statistical Package for Social Science (SPSS). *Results:* A total of 388 respondents were included in our study. About 241 (62.1%) were females. The most reported sources of information by the participants about the disease were printed and electronic media (42.8%) and social media (42.8%), followed by the educational department (33%) and friends or family members (21.6%). 218 (56.2%) have previously heard about head and neck cancers. 103 (26.5%) of the participants have used tobacco products. Approximately one-third 131 (33.8%) of the participants were aware of human papillomavirus infection (HPV), and 128 (33%) were aware that HPV infection may lead to head and neck cancers. The most reported symptom of neck cancer was neck swelling (47.9%), followed by pain or difficulty swallowing (36.6%). Head and neck cancers were detected by biopsy, as stated by 138 (35.6%) of the participants, and 127 (32.7%) reported magnetic resonance imaging followed by other detection methods. The mean awareness score of head and neck malignancy was reported to be 6.6 ± 2.12 Range (0 – 20). *Conclusion:* knowledge and Awareness of head and neck cancers among most of the respondents were reported to be less than the average.

Keywords: Head and neck cancer, Al Baha region, Saudi Arabia.

1. INTRODUCTION

Background

Head and neck cancers are the seventh most common type of cancer that contribute significantly to global morbidity and mortality (Chow, 2020; Bray et al., 2018). These cancers are a heterogeneous group of malignancies that may

appear in different parts of the oral cavity, nasal cavity, pharynx, larynx, sinuses, and glands in the oronasal cavity (Bhat et al., 2021). The most common risk factor for head and neck malignancy is consumption of alcohol and tobacco. Other factors include human papillomavirus (HPV) infection and genetic etiologies (Poon et al., 2012).

Generally, head and neck cancers are classified based on tumor size (T), cancer invasiveness to nearby lymph nodes (N), and metastasis (M) by the TNM classification. Improvements have been made, such as tumor invasion depth and extranodal extension to enhance its prediction accuracy (Asakage et al., 2019). Classification of tumors is essential for efficient and early diagnosis, which may play a significant role in selecting the optimal treatment strategy (Starzyńska et al., 2022). Common symptoms include a lump, tongue immobility, long-term sore throat and hoarseness, nasal blockage/bleeding, ulcers, difficulty/pain in swallowing, and red/white patches in the oral cavity (Pinkas et al., 2021).

Novel management strategies, including diagnostic and therapeutic innovations, were developed and tested to offer effective cures for these cancers. However, preventive strategies like improving awareness about the risk factors, symptoms, and knowledge about HPV vaccination and its role in the prevention of head and neck cancer may help reduce the health burden associated with head and neck cancer and its global morbidity and mortality ratios. Our article aims to Study the Public Awareness of head and neck malignancies in Al Baha, Saudi Arabia. Moreover, it aims to explore the relationship between the degree of Awareness and different socio-demographic factors.

2. METHODS

Study design

A cross-sectional study.

Duration of the study

From June 2022 to January 2023.

Place of the study

This study was carried out in different regions in Saudi Arabia.

Study Population

The study population was recruited from General Public Population.

Inclusion and Exclusion Criteria

Inclusion Criteria

Any Adult Al Baha Saudi Arabia residents who agree to participate in the study, both genders and any nationality, can read and has a social media account.

Exclusion Criteria

Non-Al Baha, Saudi Arabia residents, have no social media account and refuse to share in the study.

Sample size

The sample size was estimated using the EPI info program. Based on a 95% confidence interval, 5% margin of error, and a total population of Al Baha, Saudi Arabia. The sample size was 384 and was converted to 422 to compensate for the 10% non-response rate.

Data collection

The study was made using an online self-administered questionnaire via Google Forms. The generated link was randomly shared on social media (i.e., Facebook, What's App, Telegram, and Twitter). The aim of the study was clearly explained in the interface. A validated questionnaire was used based on previous studies. The questionnaire contains socio-demographic characteristics of the participants, like age group, gender, nationality, and residence. The questionnaire also includes questions about Public Awareness of Head and Neck malignancies in Al Baha, Saudi Arabia. A standard grading method was used for each variable in this questionnaire: 2 points were given to the correct option, 0 for the incorrect answer, and 1 for neutral.

Pilot study

The questionnaire was pretested in a pilot study on a sample of 20 respondents whose results were not included in the study. Some modifications were made accordingly to ensure clarity and easy understanding of the questions.

Sampling Technique

A convenient non-probability sampling method was employed to get the data from the respondents.

Data analysis

Data were coded and interpreted using the Statistical Package for Social Science (SPSS) version 23. Qualitative data were demonstrated in percentages and numbers (% & No.), and quantitative data were presented in the form of mean and standard deviation. Independent samples, including one-way ANOVA and t-test, were applied to examine the group differences.

3. RESULTS

A total of 388 respondents were employed in our study. About 241 (62.1%) were females, and 147 (37.9%) were males. Most of the participants (71 4%) were within the age group of 18 - 30 years old, 70 (18%) were within the age group of 31 - 40 years old, 38 (9.8%) were within the age group of 41 - 55 years old and 3 (0.8%) were more than 70 years old. The vast majority (96.6%) of the participants were of Saudi Arabian nationality. 256 (66%) were single in terms of marital status, 117 (30.2%) were married, and 15 (3.9%) were widowed.

About 307 (79.1%) of the participants were post-graduates, 78 (20.1%) were of secondary school level, 1 (0.3%) were of intermediate school level, and 2 (0.5%) were of primary school level. About 165 (42.5%) were employed, 161 (41.5%) were unemployed, 7 (1.8%) were retired, and the rest were others. Average monthly income was found to be less than 10,000 SAR for the vast majority, 289 (74.5%) of the participants, 50 (12.9%) of the participants have monthly income of 10,000 - 14,999 SAR, 27 (7%) were found to be having monthly income of 15,000 - 19.999 SAR, and 22 (5.7%) were having monthly income of 25,000 SAR or more (Table 1).

Table 1 Characteristics of the study respondents (n=388)

Variable	Categories	N	N%
Gender	Male	147	37.9
	Female	241	62.1
	18-30 years	277	71.4
	31-40 years	70	18
	41-55 years	38	9.8
	56-70 years	0	0
	More than 70 years	3	0.8
Nationality	Saudi	375	96.6
	Non-Saudi	13	3.4
Marital status	Single	256	66
	Married	117	30.2
	Widowed	15	3.9
Education	Primary	2	0.5
	Intermediate	1	0.3
	Secondary	78	20.1
	Graduation	307	79.1
Occupational status	Employed	165	42.5
	Unemployed	161	41.5
	Retired	7	1.8
	Other	55	14.2
Average monthly income (SAR)	Less than 10,000	289	74.5
	10,000-14,999	50	12.9
	15,000-19,999	27	7
	25,000 or More	22	5.7

Regarding the source of information about the disease, Most of the participants (42.8%) mentioned that their source of information about head and neck cancers was from printed and electronic media, another 166 (42.8%) of the participants said social media, 128 (33%) of the participants reported educational department as their source of information, 84 (21.6%) stated that their source of information was from a family member or friends, 77 (19.8%) mentioned healthcare professionals and 33 (8.5%) said governmental agencies. About 110 (28.4%) participants have no information about head and neck cancers (Figure 1).

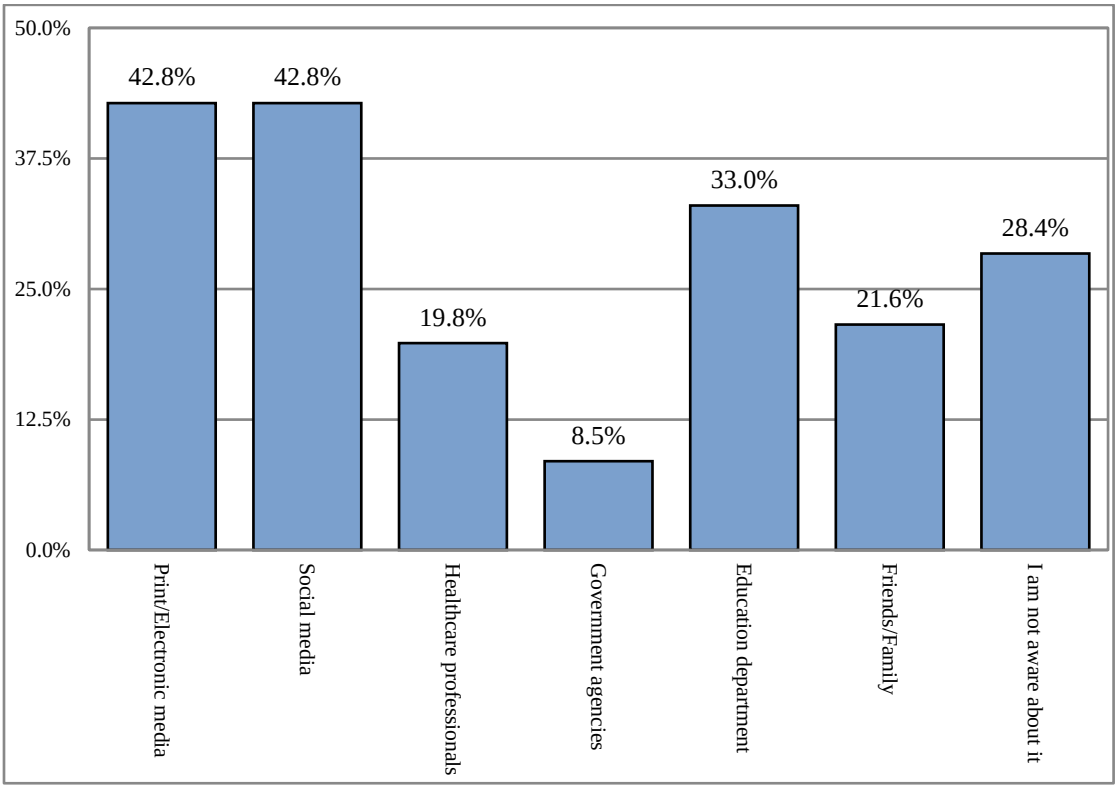

Figure 1 What is your source of information about this disease?

About 218 (56.2%) of the participants have previously heard about head and neck cancers, 116 (29.9%) have never heard about them, and 54 (13.9%) don't know. Most of the participants, 306 (78.9%), have never visited health clinics for routine check-ups, whereas 82 (21.1%) of the participants visited health clinics for regular check-ups. About 46 (11.9%) participants have a family member or friend diagnosed with head and neck malignancy. 103 (26.5%) of the participants have used tobacco products, 285 (73.5%) have never used tobacco products.

About one-third, 131 (33.8%) of the participants, were aware of human papillomavirus infection (HPV), whereas 205 (52.4%) were not aware of human papillomavirus infection, and 52 (13.4%) didn't know. 90 (23.2%) of the participants mentioned that HPV could not be sexually transmitted, 68 (17.5%) didn't agree with the same statement, and 230 (59.3%) didn't know. About 128 (33%) of respondents were aware that HPV infection can lead to head and neck cancers, 49 (12.6%) were not found to be knowledgeable, and 235 (60.6%) didn't know. 53 (13.7%) of the participants reported that males are found to be more frequently affected by head and neck malignancies than females, 49 (12.6%) don't, and 286 (73.7%) do not know.

Age of less than 40 years old are at higher risk of having head and neck malignancy, as mentioned by 54 (13.9%) of the participants, 48 (12.4%) did not agree with the previously mentioned statement, and 286 (73.7%) didn't know. 128 (33%) participants have been previously vaccinated against HPV. 41 (10.6%) of the participants think that head and neck cancers could be contagious, 183 (47.2%) don't think of it as infectious, and 164 (42.3%) don't know. Brain cancer is considered one of the head and neck cancers, as mentioned by (41.8%) of the participants. When asked about how you would rate your knowledge about head and neck malignancy, 52 (13.4%) will rate it, 215 (55.4%) will not rate it, and 121 (31.2%) didn't know. 315 (81.2%) of the participants mentioned that should be more awareness campaigns about head and neck cancers. 234 (60.8%) have interested in attending an educational session to increase their knowledge about head and neck cancers (Figure 2).

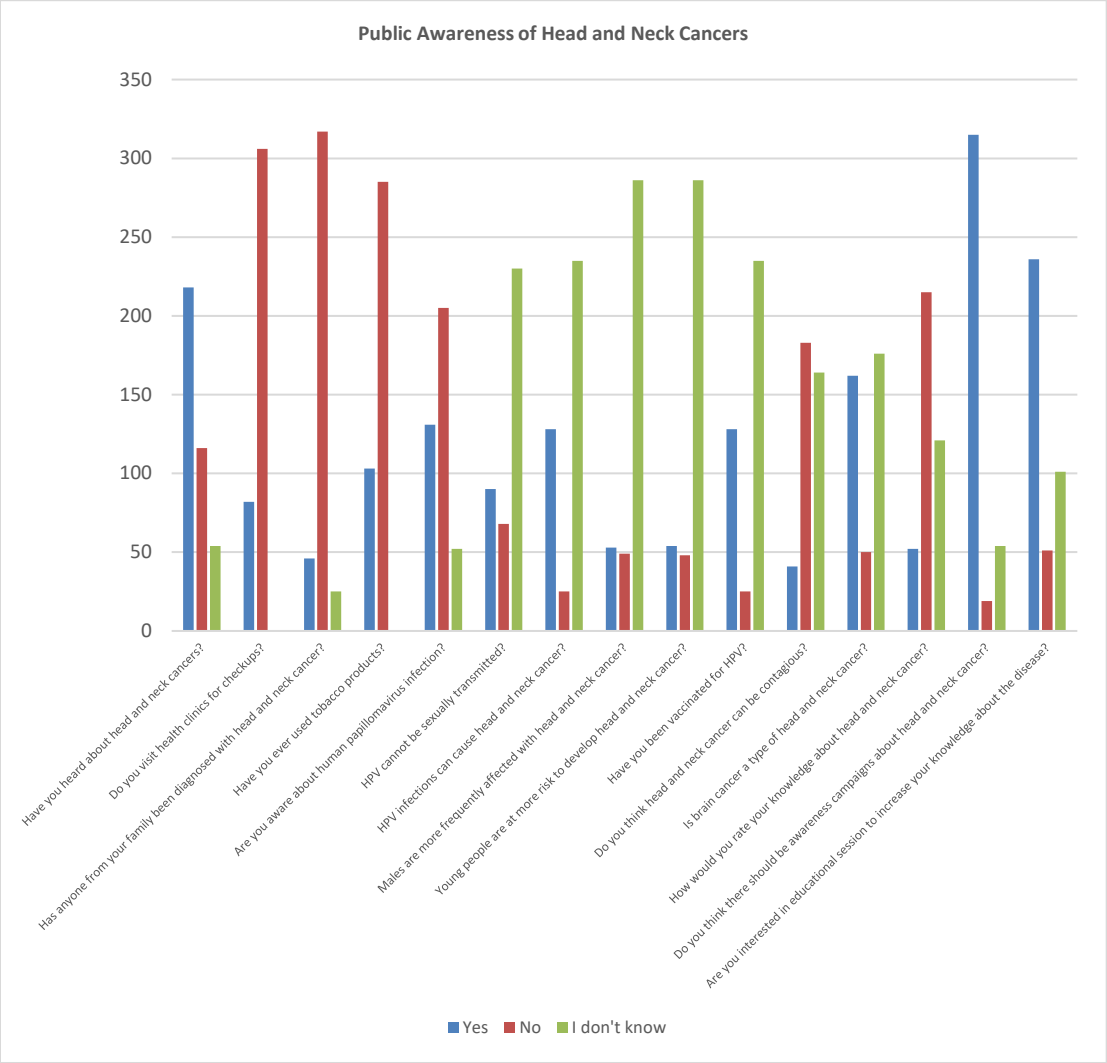

Figure 2 Public Awareness of Head and Neck Cancers

Concerning awareness about symptoms, risk factors detection methods, and treatment options. The most commonly reported symptom of neck cancer was found to be neck swelling which was written by 186 (47.9%) of the participants, 152 (39.2%) mentioned swelling of the throat, pain, or difficulty swallowing, stated 142 (36.6%) of the participants, chronic sore throat reported by 82 (21.1%) of the participants, bleeding was mentioned by 117 (40.2%) of the participants, chronic hoarseness of voice stated by 103 (26.5%) of the participants, red and white sores reported by 118 (30.4%) of the participants, pain in the ear, dry mouth, nasal bleeding were all mentioned by (15%) of the participants or slightly less than fifteen percent (Figure 3).

The most frequently reported risk factor for head and neck malignancy was found to be smoking tobacco, as reported by 172 (44.3%) of the participants, followed by chewing tobacco, as mentioned by 119 (30.7%) of the participants, viral infections mentioned by 112 (28.9%) of the participants, genetic causes were stated by 105 (27.1%) of the participants, bacterial infections and diet that is not rich in fibers was mentioned by 53 (13.7%) and 58 (14.9%) of the participants respectively, and 178 (45.9%) of the participants were not sure (Figure 4).

When asked about how head and neck cancers are detected, 138 (35.6%) of the participants mentioned a biopsy test, 127 (32.7%) of the participants reported magnetic resonance imaging, and a CT scan was stated by 107 (27.6%) of participants as a method of detection, physical examination, and X-ray were mentioned by (20.6%), and (20.1%) of the participants respectively and 159 (41%) of the participants were not sure (Figure 5).

Most of the participants, 187 (46.4%), reported chemotherapy as the treatment option for head and neck malignancy; surgery was mentioned by 180 (46.4%) participants, radiotherapy; was stated by 140 (36.1%) of the participants, 27 (7%) reported herbal treatment and 61 (15.7%) mentioned all the above and 146 (37.6%) were not sure (Figure 6).

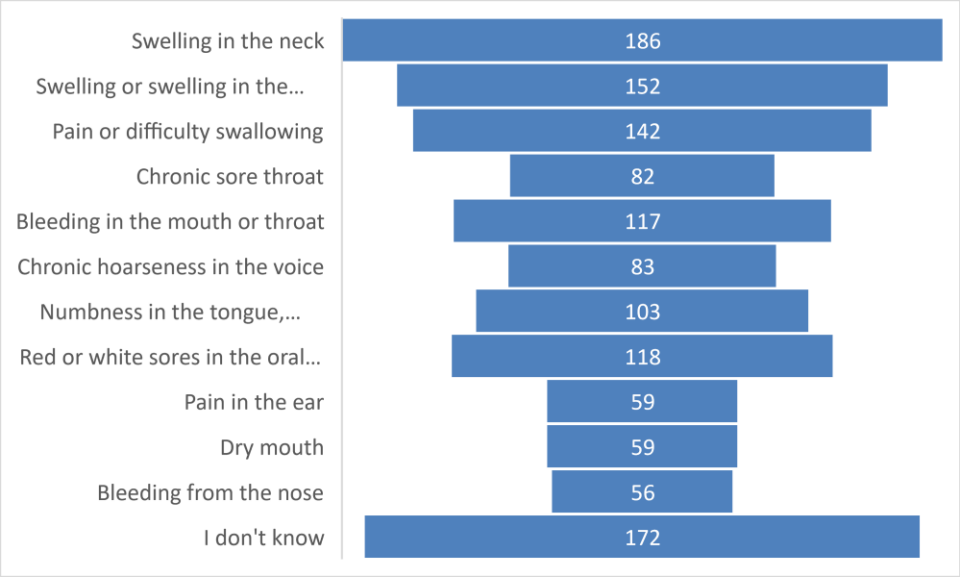

Figure 3 Awareness of symptoms of Head and Neck Cancers (What are the common symptoms of head and neck cancer?)

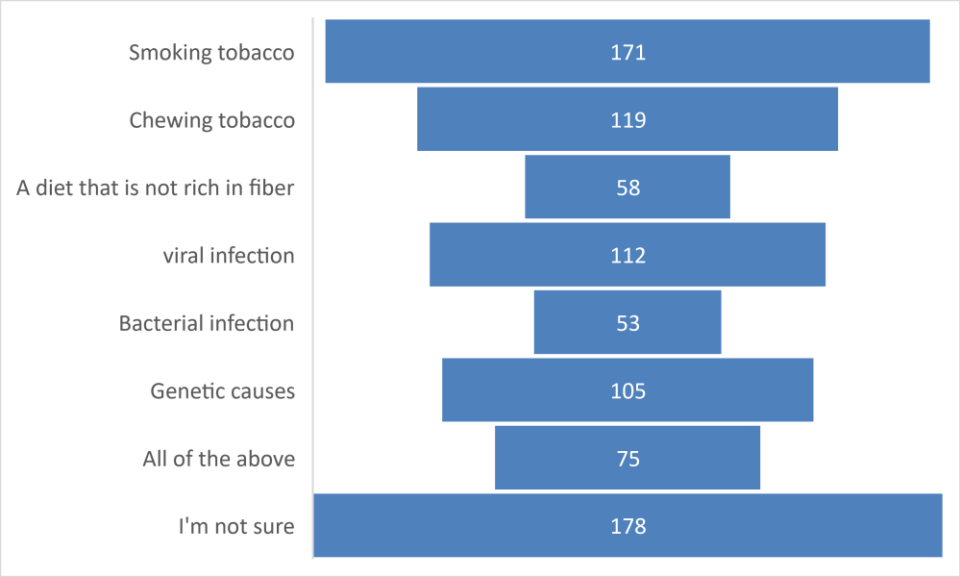

Figure 4 Awareness of risk factors of head and neck cancer of Head and Neck Cancers (What are the risk factors of head and neck cancer?)

Differences in the Awareness of Head and Neck Malignancies According to Socio-demographic Factors

The mean knowledge score about head and neck malignancy was 6.6 ± 2.12 (Range 0 – 20). Gender, Age, Nationality, and marital status were not significantly associated with head and neck malignancy (p-value = 0.286, 0.414, 0.414, 0.405, and 0.579, respectively). Also, no statistically significant association was found between the following: Education, occupational status, and average monthly income and head and neck cancer (p-value = 0.939, 0.221, and 0.069, respectively) (Table 2).

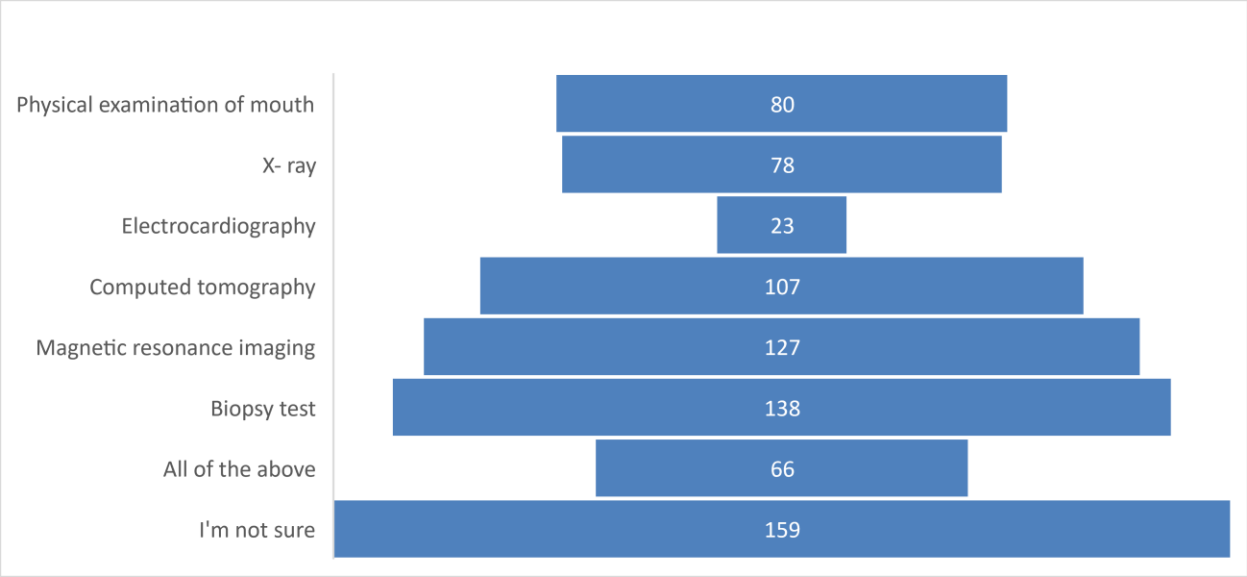

Figure 5 Awareness of Head and Neck Cancers detection (How can head and neck cancer be detected?)

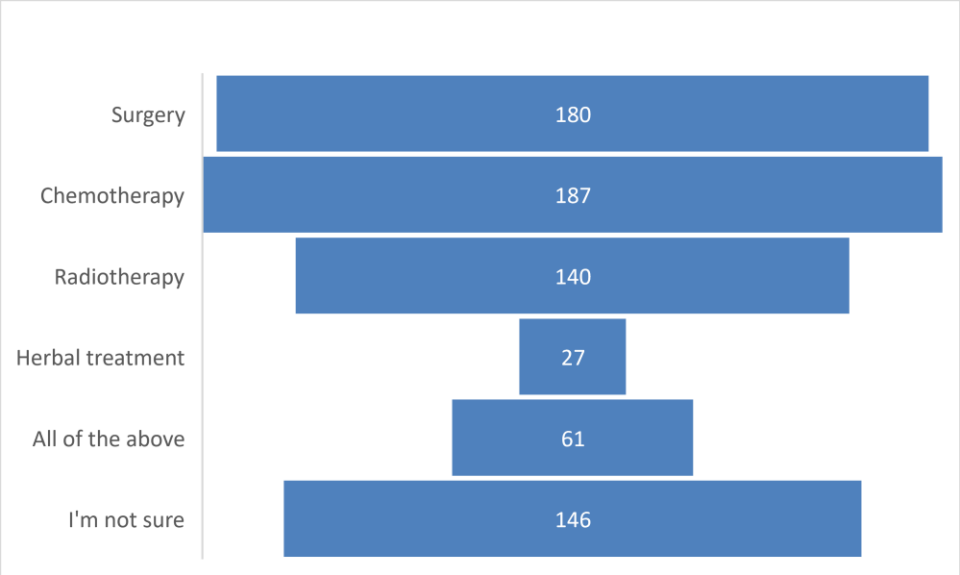

Figure 6 Awareness of Head and Neck Cancers treatment (What are the treatment options for head and neck cancer?)

Table 2 Factors Linked with Awareness of Head and Neck Cancer.

Variable	Categories	Total knowledge score Mean (SD)	P value
Gender	Male	6.5 (2.06)	0.286
	Female	6.6 (2.15)	
Age	18-30 years	6.7 (2.17)	0.414
	31-40 years	6.2 (1.84)	
	41-55 years	6.3 (2.16)	
	More than 70 years	7.0 (2.65)	
Nationality	Saudi	6.5 (2.12)	0.405
	Non-Saudi	7.3 (2.10)	
Marital status	Single	6.7 (2.14)	0.579
	Married	6.5 (2.12)	
	Widowed	5.4 (1.30)	
Education	Primary	4.5 (0.71)	0.939

	Intermediate	4.0 (0.98)	
	Secondary	6.6 (2.09)	
	Graduation	6.6 (2.12)	
Occupational status	Employed	6.9 (2.18)	0.221
	Unemployed	6.3 (2.00)	
	Retired	6.3 (2.50)	
	Other	6.3 (2.11)	
Average monthly income (SAR)?	Less than 10,000	6.5 (2.08)	0.069
	10,000-14,999	6.4 (2.5)	
	15,000-19,999	7.1 (2.42)	
	25,000 or More	7.6 (2.19)	

4. DISCUSSION

Head and neck cancers nowadays are prevalent, and assessing the population's knowledge and Awareness is of great significance as it affects the population's treatment-seeking behavior and hence early detection, diagnosis, and treatment (Torabi et al., 2022). Our study aimed to investigate the Awareness of head and neck malignancies in the population of Al Baha, Saudi Arabia. About two-thirds (62.1%) of the participants were females. Most of the participants were reported in the age group of 18 - 30 years old. The vast majority (96.6%) of the participants were of Saudi Arabian nationality. About two-thirds (66%) were single in terms of marital status. More than two-thirds (79.1%) of the participants were post-graduates. Less than half (42.5%) were employed.

Concerning the source of information about head and neck malignancies, less than half (42.8%) mentioned that their source of information about head and neck malignancies was from printed and electronic media, another (42.8%) of the participants reported social media and about one-fifth of the participants mentioned healthcare professionals, and this was found to be consistent with the findings said in the congruent study conducted by Alhazazzi, (2016) in which (39%) of the participants mentioned internet and media as their primary Source of information about head and neck malignancies.

Half (56.2%) of the participants had previously heard about head and neck malignancies, and this was contradictory to which reported in the study carried out by Luryi et al., (2014), in which about (66%) of the participants mentioned they were not oriented about the disease. Less than one-third (26.5%) of the participants have used tobacco products. One-third (33.8%) of the participants were aware of human papillomavirus infection (HPV). Only (23.2%) of the participants mentioned that HPV cannot be sexually transmitted. Also, one (33%) of participants were aware that HPV infection could cause head and neck malignancies, and this was found to be the same findings reported in the Polish study, which said that about one-third of the participants know that HPV infection is a risk factor to developed head and neck cancers (Pinkas et al., 2022). Slightly less than two-thirds (60.8%) have interested in attending an educational session to increase their knowledge about head and neck malignancies.

Regarding awareness about symptoms, risk factors detection methods, and treatment options. The most frequently reported symptom of neck cancer was found to be neck swelling which was written by about half (47.9%) of the participants. Pain or difficulty swallowing was stated by about one-third (36.6%) of the participants, chronic hoarseness of voice was said by less than one-quarter (26.5%) of the participants, and the previously mentioned symptoms were also reported by the participants in the congruent study conducted by Krentwoska et al., (2018) in which lump in the neck as reported by (51.8%) of the participants. pain in the ear, dry mouth, and nasal bleeding were all mentioned by (15%) of the participants or slightly less than fifteen percent.

The most frequently reported risk factor for head and neck malignancy was found to be smoking tobacco, as reported by less than half (44.3%) of the participants, followed by chewing tobacco, as mentioned by nearly one-third (30.7%) of the participants, tobacco was also identified as a risk factor for head and neck cancers in the American study by more than half of the participants (Luryi et al., 2014). Concerning knowledge and awareness about the detection and diagnosis of head and neck cancer, about (35.6%) of the participants mentioned biopsy test, another one-third (32.7%) of the participants reported magnetic resonance imaging, (Computed Tomography) CT scan stated (27.6%) of the participants as a method of detection, physical examination, and X-ray were mentioned by (20.6%), and (20.1%) of the participants respectively and less than half (41%) of the participants were not sure. Slightly less than half (46.4%) of the participants reported chemotherapy as the treatment option for head and neck cancer, surgery was also mentioned by a similar percentage (46.4%) of the participants, radiotherapy was stated by about one-third (36.1%) of the participants, this was found to be identical to the findings reported in the parallel study conducted by Mody et al., (2021) in which surgery and radiotherapy were also reported as treatment options for head and neck cancers.

The mean knowledge score about head and neck cancer was found to be 6.6 out of a total of 20. This knowledge score was considered to be below average, and this was found to be consistent with the findings reported in the congruent study carried out by O'Connor et al., (2010), in which (70%) of the participants were considered to be having a low level of knowledge regarding head and neck cancers.

Regarding the association between socio-demographic characteristics of the participants and awareness about head and neck cancers. Gender, Age, Nationality, and marital status were not significantly associated with head and neck cancer. Also, no statistically significant association was found between the following: Education, occupational status, and average monthly income and head and neck cancer, education was also not reported to be significantly associated with knowledge about head and neck cancers as reported in the study (Luryi et al., 2014).

5. CONCLUSION

There was below-average general knowledge and awareness about head and neck cancers among most of the participants. Average awareness level regarding symptoms and risk factors of head and neck cancer but a lower level of awareness regarding diagnosis and treatment methods. Age, gender, and educational status.

Recommendations

Efforts should be directed towards raising the degree of knowledge and awareness about head and neck cancers through various strategies, including significant enhancement of the role of media, social events, and community campaigns.

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Author Contributions

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Abstract: Dr. Mohammed A Alghamdi
Introduction: Safa Saleh S Alzahrani, Yakain Hussain A Alhaddad, Shams Mohammed Y Alsalman, Amal Mohammed Saad Alghamdi.
Methods: Dr. Abdullah Alghamdi
Results: Dr. Mujtaba A Ali
Discussion: Dr. Mohammed A Alghamdi, Dr. Rajab Alzahrani
Revision: Dr Rajab Alzahrani

Ethical approval

The study was approved by the Medical Ethics Committee of Al-Baha University, Faculty of Medicine, Saudi Arabia (Ethical approval code: REC/SUR/BU-FM/2022/44).

Informed consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

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Conflict of interest

The authors declare that there is no conflict of interest.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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