Breaking Down the Factors and Managing Early Detection of Oral Cancer in the Population: Insights from a Qualitative Study

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ABSTRACT

Background: Diagnosis of the pre-cancerous lesions and conditions provides an opportunity for early detection that helps in the prevention of the malignant changes that may occur in them and proceed to oral cancer. If the pre-cancerous lesions/conditions are diagnosed in the early phase, quitting the tobacco habit can reverse the condition. The present study was done to know the underlying factors related to delay in diagnosis of Oral cancer among the general population of

Methodology: A qualitative study was done among 40 participants of Delhi NCR using the Consolidated Criteria for Reporting Qualitative research (COREQ)guidelines. 10 open-ended questions focused on various aspects related to oral cancer, including patients' knowledge, perceived risks, the seriousness of the disease, and experiences with oral cancer examinations were asked the response of which was further divided into themes and was analysed based on themes.

Result: The qualitative analysis of the individual interviews conducted in this study identified three main themes that reflect the attitudes, beliefs, and actions of the participants regarding oral cancer and its related aspects. The first theme was the participants' level of understanding regarding oral cancer and its associated aspects. The second theme focused on the participants' perception of oral cancer and its related aspects. The third theme pertained to the participants and their dentists' behaviour and practices concerning oral cancer self-examination and clinical procedures.

Conclusion: Many of the participants involved in the study were aware of the link between tobacco, alcohol, and oral cancer, they tended to overlook other significant risk factors such as age, sun exposure, and family history.

Keywords: Oral Cancer, qualitative method, oral cavity, pre-cancerous lesion

INTRODUCTION

The term oral cavity defines the different organs like the lips, buccal mucosa, alveolar ridges, retromolar triangle, hard palate, floor of the mouth and the anterior two-thirds of the tongue. Oral cancer or oral cavity cancer, is a subtype of head and neck cancers, it can be any cancerous tissue growth located in the oral and maxillofacial region. There are many types of oral cancers, namely squamous cell carcinomas, basal cell carcinomas, veracious carcinomas, nasopharyngeal carcinomas, malignant melanoma, ameloblastoma, mucoepidermoid carcinoma. Around 90% of the cancerous growth found are squamous cell carcinomas, that

invade the tissues that line the mouth and lips. Other different types of carcinomas of oral and maxillofacial region can also become malignant and result in squamous cell carcinoma. Microscopically most of the oral cancers look very similar and are called squamous cell carcinoma. They are malignant and they tend to spread rapidly. These oral cancers are heterogeneous and arise from different parts of the oral cavity having different predisposing factors, prevalence, and treatment outcomes. Many studies in various geographic locations have assessed the knowledge of dentists and their practices regarding oral cancer and proved that there is a need to improve the knowledge of dentists on preventing and detecting oral cancer.1,2,3

Presently, cancer is considered a public health problem in theworld and in all countries with class, cultural, and economic differences. This disease affects a minimum of 9 million people annually, causes the deaths of at least 5 million people, and is the second leading cause of death in many countries. It is estimated that if steps towards cancer prevention and control are further delayed in the next 20 years, the prevalence of this disease will be 100%.4,5 The most commonly involved region for oral cancers is the tongue. Oral Cancers may also occur on the floor of the mouth, cheek lining, gingiva (gums), lips, palate (roof of the mouth), maxilla or mandible.

The mouth and the oral cavity are among the ten commonest sites affected by cancer worldwide, but there are variations globally.6 In South Central Asia cancers of the oral and maxillofacial region counts among three most common types of cancer. Whereas in India the incidence of oral cancer is 12.6 per 100000 of the population. Comparing it with the U.S population, where oral and maxillofacial cancers represent only about 3% of malignancies, it accounts for over 30% of all cancers in India. The difference in incidence and pattern of oral cancer is likely due to regional differences in the prevalence of the risk factors which include the differences in lifestyle, climate and significantly varying tobacco consuming habits. Early diagnosis and treatment reduce morbidity and mortality but oral cancers diagnosed even in developed countries are detected at advanced stages, resulting in a low 5-year survival rate.7,8 Better survival rates are associated with early and prompt detection.9 The U.S five year survival rates for 1996-2003 were 81.8% for localized tumours, 52.1% for regionally metastatic tumors and 26.5% for distant metastasis.10 Early diagnosis leads to comparatively less complex, debilitating and costly treatment.11 Minimum invasive treatment triggered by early detection provides synergy between quality of life and survival.12

The importance to public health of early diagnosis and control of oral cancer in different populations is based on world and national reports which show that oral cancer is one of the 10 most frequent cancers in the world, with three-quarters of the cases occurring in developing countries.13 Oral cancer occurrence is particularly seen to be high in males. The Incidence rates for oral cancer vary in men from 1 to 10 cases per 100,000 populations in many countries. The major predisposing factors of oral cancer are considered to be smoking and alcohol. The combined synergistic effects of smoking and alcohol play a major role in the increasing number of oral cancer cases. This risk is generally increased as compared to being a smoker or consumption of alcohol alone. The population-attributable risks of smoking and alcohol consumption have been estimated to be 80% for males, 61% for females, and 74% overall.14

Although the oral cavity is easily accessible for visual examination and oral cancers and premalignant lesions have well-defined clinical diagnostic features, oral cancers are frequently detected in their advanced stages. In fact, in India, 60-80% of the patients present with advanced disease as compared to 40% in the developed countries. The presentation of patients with advanced stages of oral cancer is consistently more in India as compared to other developed countries. This also makes the survival rate lesser in comparison. Assessing

and diagnosing the disease in its early stages would directly result in an increase in the survival rate as well as in the reduction of the treatment costs associated with the treatment.
Diagnosis of the pre-cancerous lesions and conditions provides an opportunity for early detection that helps in the prevention of the malignant changes that may occur in them and proceed to oral cancer. If the pre-cancerous lesions/conditions are diagnosed in the early phase, quitting the tobacco habit can reverse the condition. The present study was done to know the underlying factors related to delay in diagnosis of Oral cancer among the general population of

METHODOLOGY

Dental patients of both genders were interviewed in a one-on-one setting using mainly open-ended questions. The interview guide, which contained 10 open-ended questions, was created by the authors and focused on various aspects related to oral cancer, including patients' knowledge, perceived risks, the seriousness of the disease, and experiences with oral cancer examinations. The guide also explored patients' preferences for examinations, education about risk factors, and self-examination. Before use, the guide was evaluated by two experts and pre-tested with four volunteer patients of varying educational levels to ensure appropriateness. The study's reporting adhered to the Consolidated Criteria for Reporting Qualitative research (COREQ) checklist. The interviews were conducted by a public health specialist who conducted three mock interviews under supervision to ensure consistency. Informed consent was obtained from the patients and the study was approved by the institutes ethical committee board.
The investigators conducted one-on-one interviews with the general populationof both genders, primarily utilizing open-ended questions. They developed a guide containing 10 open-ended questions to explore patients' knowledge of oral cancer, their perception of risk, the severity of oral cancer, and their experiences with and thoughts on the feasibility of oral cancer exams. The guide also examined patients' preferences for oral cancer exams, their interest in education on oral cancer and its risk factors in the dental clinic, and their self-examination habits. The interview guide was evaluated by two health promotion and oral cancer experts before use, and it was pre-tested with four patients of varying education levels to ensure appropriate language and questions.

QUALITATIVE PARTICIPANT SELECTION

From October to November 2021, all patients who visited theOral Health Camp in the Delhi NCR regionwere invited to participate in the study and were informed of its purpose. Each day, a maximum of three individual interviews were conducted by the interviewer. A total of 40 participants were included in the study, comprising 20 females and 20 males, with ages ranging from 18 to 70 years. The participants had varying educational backgrounds, with most having completed secondary school-level education. The interviews were conducted in Hindi and English based on the comfort and comprehension of the participants and lasted approximately 60 minutes. The interviewers took notes for all interviews and were audio recorded as per the participants' personal preferences. A grounded theory methodology was employed to identify emerging patterns in the patients' opinions, expectations, and thoughts concerning oral cancer and related aspects. The notes were reviewed with the participant after each interview to ensure that they accurately represented their thoughts and opinions. All interview notes and audio recordings were reviewed together by both interviewers on the same day of the interview. The data analysis was done manually. Responses from all interviews were grouped, and all similar responses were coded. Focus codes were then developed, which were later transformed into theoretical codes. The codes were reviewed and then translated into English by. Finally, all codes were reported in the result section along

with the relevant participants' responses. The quotations in the results section were obtained from the audio recordings, and the notes frominterviews were found to be comparable.

RESULT

The qualitative analysis of the individual interviews conducted in this study identified three main themes that reflect the attitudes, beliefs, and actions of the participants regarding oral cancer and its related aspects. The first theme was the participants' level of understanding regarding oral cancer and its associated aspects. The second theme focused on the participants' perception of oral cancer and its related aspects. The third theme pertained to the participants and their dentists' behaviour and practices concerning oral cancer self-examination and clinical procedures.

One of the major themes that emerged from the analysis of the present study's data was the participants' knowledge regarding oral cancer and its related aspects. The theme comprised of four subthemes: aetiology, epidemiology, risk factors, and prevention. The participants generally recognized oral cancer as cancer in the mouth but did nothave a clear understanding of its aetiology. Some participants even assumed that oral cancer could result from bacterial or fungal infections. While almost half of the participants confirmed the high prevalence of oral cancer in the North India region, many participants were not aware of its epidemiology. Most participants also indicated that they did not know the risk factors of oral cancer, although some believed that it could be related to smoking, chewing, paan, alcohol or poor oral hygiene.

The data from the present study revealed that the participants' knowledge of oral cancer and its related aspects was a major theme. This theme was developed through four subthemes: aetiology, epidemiology, risk factors, and prevention. The participants referred to oral cancer as cancer of the mouth but lacked knowledge of its aetiology. Some participants were unaware of oral cancer's existence, while others believed it could be caused by a bacterial or fungal infection. While nearly half of the participants confirmed that the Nort India region had a high oral cancer prevalence, many were unaware of its epidemiology. Most participants did not know the risk factors of oral cancer, although many believed that smoking, paan chewing, and gutka use could be related to it. Participants believed that smoking alone could not cause cancer in the mouth, and some believed it was related to genetics or the environment. Several participants were not aware of the preventive measures they could take to avoid oral cancer. Others believed that maintaining good oral hygiene and not smoking could prevent oral cancer. The participants had negative perceptions towards oral cancer facilities and accessibility in theregion, and some believed that there were no facilities to detect oral cancer. Some participants believed that oral cancer could be detected in the region but accessing the facilities would be challenging. The majority of the participants believed that routine clinical oral cancer examinations would help detect oral cancer, but some were scared of receiving the examination. Additionally, many participants indicated that it would be helpful if dentists educated their patients about oral cancer.

Several participants reported that their dentists had provided them with health education on oral cancer, and participants' habits that increase the risk of developing the disease. Few participants mentioned regularly conducting self-examinations for oral cancer, while many others expressed a lack of knowledge on how to perform such an examination. These participants stated that they would have conducted self-examinations if they were aware of how to do so, as they had not previously been informed about this practice. Additionally, some participants noted that existing dental problems had hindered their ability to examine themselves for oral cancer. The majority of participants had undergone a biopsy after 2 years the barrier for the above was due to financial constraints.

DISCUSSION

The major causes of oral cancer worldwide remain tobacco in its many different forms, heavy consumption of alcohol, and, increasingly, infection with certain types of HPV. Although the relative contribution of risk factors varies from population to population, oral cancer is predominantly a disease of poor people (Johnson et al 2011). Prevention of this devastating disease can come from fundamental changes in socioeconomic status, as well as from actions to reduce the demand, production, marketing, and use of tobacco products and alcohol (Johnson et al 2011). A healthy diet, good oral and sexual hygiene, and awareness of the signs and symptoms of the disease are important. Success depends on political will, intersectoral action, and culturally sensitive public health messages disseminated through educational campaigns and mass media initiatives. 15

Cancer currently is considered a public health problem in the world and among all countries with class, cultural, language and economic differences. Cancer affects at least 9 million people every year, causes at least the deaths of 5 million people, and is the second commonest cause of death in many countries. The researchers believe that if early diagnosis, prevention and control measures are not taken, in the next 20 years, the prevalence of cancer will be 100%. 16

The response rate in the current study was 100% which was similar to a study conducted by S Ranganath and wasmuch higher as compared to studies conducted by Reda Elgazzar et al and Woosung Sohn et al in which the response rates were 51% and 56.4%. 17,18,19

The prognosis of identified oral cancer cases in a particular population is closely linked to the level of understanding about the disease. This is because greater awareness about oral cancer, including its symptoms and risk factors, can potentially result in earlier clinical presentation. Conversely, a lack of knowledge about identifying early signs of oral cancer could lead to the disregard of pre-cancerous lesions in their early stages, while incorrect beliefs about risk factors could diminish the likelihood of making informed decisions about personal habits.

By increasing public awareness and education on the risk factors and signs of oral cancer, individuals may seek early clinical attention, resulting in improved survival rates. In North India, there is a dearth of information on the population's level of knowledge regarding oral cancer, which makes it difficult to plan effective public health policies aimed at improving patient outcomes. To address this issue, a study was conducted to evaluate the public's understanding and awareness of oral cancer in North India.20-21

Limitation

Firstly, as a cross-sectional questionnaire survey, it is prone to certain biases inherent to this study design, such as memory/recall bias due to participants' inability to remember all past events, and interviewer bias since the examiner was aware of the disease status of the participants. Additionally, it is not possible to establish a cause-and-effect relationship based on our findings.

CONCLUSION

Although many of the participants involved in the study were aware of the link between tobacco, alcohol, and oral cancer, they tended to overlook other significant risk factors such as age, sun exposure, and family history. The study emphasizes the urgent necessity of introducing comprehensive educational programs forthe general population. This would enable them to contribute to the early detection of oral cancer patients, ultimately leading to higher survival rates and lower treatment costs. Media like television and radio should be involved in spreading awareness. School anti-tobaccoprograms should be implemented to teach the youth about the harmful effects of tobacco.

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