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Assessment of the Impact of the Work Place Environment on Oral Cancer Awareness amongst High Risk, Semi- Urban blue collared personnel

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Abstract:
Purpose: *To assess whether the awareness regarding Oral Cancer, in a high risk, semi-urban, blue collared personnel, is impacted by its proximity of work with a highly educated student population.*
Materials and methods: *A questionnaire-based survey was carried out over a period of five days in three locations across the township of Manipal, India. 578 members of the University ancillary personnel answered this survey.*
Result: *Even though 77.9 % of the targeted group had heard about Oral Cancer before, over 90% had never been screened for it, despite working in a prominent Health Sciences University. 42.2% believed that smokeless tobacco (a habit prevalent in India) was safer than smoked tobacco and a similar percentage was unsure of alcohol's role in Oral Cancer. Most participants were not aware of how to recognize and treat the disease.*
Discussion: *While general knowledge of the existence of Oral Cancer and its causes was common, the lack of understanding towards its risk factors, clinical features and prevention factors, is grossly worrying. Employed in a Health Science University, one would assume that such workers would undergo timely screenings. However, the survey reveals it isn't so.*
Conclusion: *Lack of facilities and monetary support in India, has created difficulties in reaching out to different sub-groups and create awareness. However, blue collared workers that are employed in and nearby Health Care Universities are accessible for educational campaigns and free screenings by students and faculty. It is hence, suggested that such Universities take initiative in educating fellow workers.*
Key words: *Oral Cancer; Screening; Knowledge; Awareness; Risk factors.*

I. Introduction

Oral Cancer is the 6th most common cancer in the world with an annual incidence of over 640,000 cases.[1] The age adjusted incidence for Oral Cancer in India alone is 20 per 100,000.[2] As such, the Indian Subcontinent and India, in particular, faces the global burden of Oral Cancer. This extremity in statistics is owing to the large changes in lifestyle,[3] uptake of unhealthy oral habits, lack of education and basic healthcare facilities in the county.[4]

There are several blue collared personnel employed at Health Care Universities. Their work ranges from health related waste disposal to maintenance of cleanliness in the attached Hospitals, clinics, laboratories and classrooms, among others. One would assume that working in an environment of health care in a prominent educational community, these workers would be equipped with adequate knowledge about prevalent diseases and how to prevent them. The aforementioned hypothesis was challenged in the current study.

A survey was used to examine the possible role a work place environment might have on the awareness levels amongst employees. The initial idea for the survey was inspired by a previously published survey in India[5] that dealt with a successful tobacco cessation program in the work place. This particular survey, however, is a first of its kind and was conducted in the University town of Manipal, Karnataka amongst its Ancillary personnel.

II. Materials & Methods

In June 2013, a multi- centred, open study was performed. M.I.S., Manipal Integrated Services, earlier known as M.S.F.M., Manipal Servicecorp Facility Management Pvt. Ltd., the organization which provides manpower for the housekeeping staff and security personnel, was the target group. With due permission from the concerned authorities, nearly 600 M.I.S. personnel, were invited for voluntary dental screening, to be held over a period of five days, followed by a thorough oral cancer educational session. Prior to the screening, the said survey was conducted. A total of 578 responses were received, with over a 100 responses on each day.

Measuring tool

The questionnaire comprised 15 closed-ended questions that assessed the subject's awareness of oral cancer, its risk factors, features, prevention and treatment. A combination of questions was reproduced from previously published surveys conducted in India,[5] Turkey and Portugal. Socio-demographic information such as age and sex was also recorded.

Response categories for question 4, 6, 9, 10, 11, 12 and 14 were 'strongly agree', 'agree', 'neither', 'disagree' and for questions 1, 2, 3, 5, 7, 8, 13 and 15 were 'yes', 'maybe', 'not sure', 'no'. These were coded as 3, 2, 1, 0 except for questions 4, 7, 11, 12, 13 which were coded 0, 1, 2, 3. Responses were scored in accordance with defined rules. Scores were treated for computer analysis with SPSS 11.0 (Statistical Package for Social Sciences) in terms of Frequency, only.

Based on the above, three overall categories were designed. A scorer acheiving between 31-45 was considered Well Informed. One achieving a score between 16-30 was considered Satisfactorily Informed or to have had 'Fair' knowledge and lastly, a scorer who had received a score less than 15 was considered, Poorly Informed.

Procedure

The questionnaire and the study procedures were approved by the concerned authorities of the institution prior to administering. A group of five interns were trained to administer the questionnaire by face to face interview and assist in case of reading/language problems, without prompting the answers.

After completion of the survey, the respondents were screened for Oral Cancer using the eight step Cancer Screening technique. Any individual showing sign of pre-malignant condition was counselled more aggressively and with special attention. Subjects were then provided with an educational pamphlet, provided by Oral Cancer Organization, Manipal Chapter, containing a description of the risk factors, signs and symptoms of oral cancer along with appropriate pictures, and were verbally educated as well as counselled about the ill effects of tobacco and its products.

III. Results:

584 M.I.S. workers participated in the week long Oral Cancer Awareness Program, of which 578 participated in the survey. This amounted to a 98.97% response rate. Of these, 45.6% were males while 54.4% were females. (Graph: i) The mean age of respondents was 32.84 years, in the age range of 18 and 64 years. (Table: i)

The questionnaire consisted of 5 questions assessing general awareness of the subject regarding oral cancer, 6 questions assessing knowledge of respondents regarding risk factors and 4 questions based on understanding the knowledge of subjects regarding signs and symptoms of oral cancer. (Table: ii).

The general awareness of oral cancer was assessed via five closed-ended questions (Have you ever heard about oral cancer, Have you ever heard of oral cancer screening before, Have you ever had your mouth examined for oral cancer before, There is no way of treating oral cancer, Oral cancer is within the top ten most common cancers in India). While 77.85% of the group had heard about oral cancer, 59.79% of them knew that it belonged to the top ten most common cancers in India.

However, when asked about screening, an alarming 35.47% had never heard of oral cancer screening before and 90.66% had never gone for oral cancer screening in their lives, despite of living and working in a professional Health Science University Campus.

The questionnaire consisted of six questions assessing knowledge of respondents pertaining to risk factors for oral cancer (Smoking, alcohol, hookah, improperly fitting dentures, sedentary life style, family history of cancer). Around 70% of the subjects were unsure of the risk alcohol held in causing oral cancer and 42.2% of the subjects felt smoked tobacco was safer than smokeless tobacco. 6.4% and 8% associated oral cancer with risk factors like improperly fitting dentures and sedentary life style, respectively. On a positive note, 43.65% of the subjects were aware of the association of oral cancer with family history. (Graph: ii)

Lastly, the questionnaire consisted of four questions assessing knowledge of respondents pertaining to signs and symptoms of oral cancer (pain, abnormal tissue growth inside mouth, loose/mobile teeth, classical signs of Oral Sub mucous Fibrosis like burning sensation and reduced mouth opening). 66.3% of the subjects chose to neither agree nor disagree on the question related to having several loose teeth in the mouth to presence of oral cancer. Majority of the participants (43.25%) felt pain would be the first sign of oral cancer while only 35.76% recognized abnormal tissue growth. Unfortunately, only 20.21% of the respondents were able to recognize limited mouth opening and burning sensation in the mouth as predisposing signs of Oral Sub Mucous Fibrosis, a condition widely prevalent in the Indian Subcontinent.[6] (Graph: iii)

It was observed that the overall awareness regarding oral cancer was less than suitable because only 2.2% of the surveyed population had 'Good' knowledge about oral cancer. These results are significant while

keeping in mind the frequent interaction of these workers with an educated class of society that deals with healthcare on a daily basis.

IV. Discussion

Mass public education has been known to play an important role in reducing the Oral Cancer burden on urban and rural society. It is quite understandable that knowledge of Oral Cancer in a given population is directly related to the prognosis of the cases identified therein. Work place has been known to be a significant factor is recognizing transmittable diseases.[7] This study was conducted to understand if the work place might play a role in transmitting cognitive information. In this case, it was specifically pertaining awareness regarding a massively prevalent fatal disease in the region.

Unfortunately, the results clearly indicate that the work place in the current scenario has not been effective in creating increased knowledge about Oral Cancer. Although the overall awareness on the general issues of cancer was adequate, there was an extreme deficiency in the awareness pertaining to its signs, risk factors, treatment and prevention. For this purpose, it is suggested that rigorous awareness programs, specifically directed towards proper identification of symptoms and signs, be carried out, for such workers. The initiative of such programs could be taken up as the responsibility of students and faculty working at such educational institutions. Success has been proven in such interventions, although, contradictory, albeit moderately discouraging results were found in another.[8]

V. Limitations

Since the study is the first of its kind, the limitations are several. This study may or may not have relevance to other health conditions and work place scenarios. A follow up study regarding the change, if any, in the knowledge amongst the targeted group, is likely to yield more relevant results.

However, its significance lies in it being a pioneer and forming a platform where several questions may be posed. Change begins at home and this, the authors, suggest must be kept in mind by medical, dental and nursing schools across the world, while performing outreaches and community service programs that are now a course requirement for several of them. Educational interventions must begin with the employees of each global University.

VI. Conclusion

An oral health promotion strategy that can be implemented for such populations should involve elements of basic education on oral cancer as well as timely oral cancer screening. Further, such programs must emphasize on the strict recognition of signs and symptoms and teach patients to self examine their mouths[9] for the same, a skill necessary for those who may not have the facilities or monetary support to visit the doctor regularly.

Acknowledgements

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GRAPHS & TABLES

Graph: I

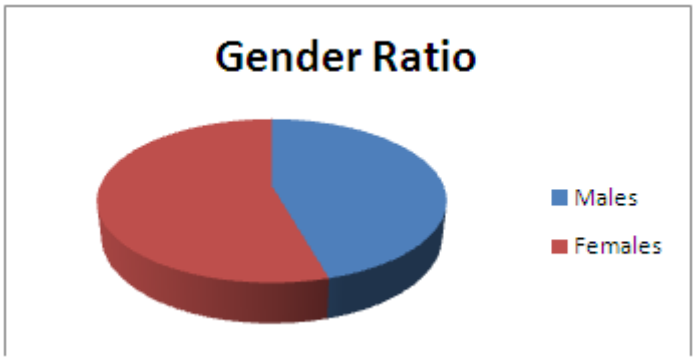


Table: I (denotes the mean age of male and female subjects.)

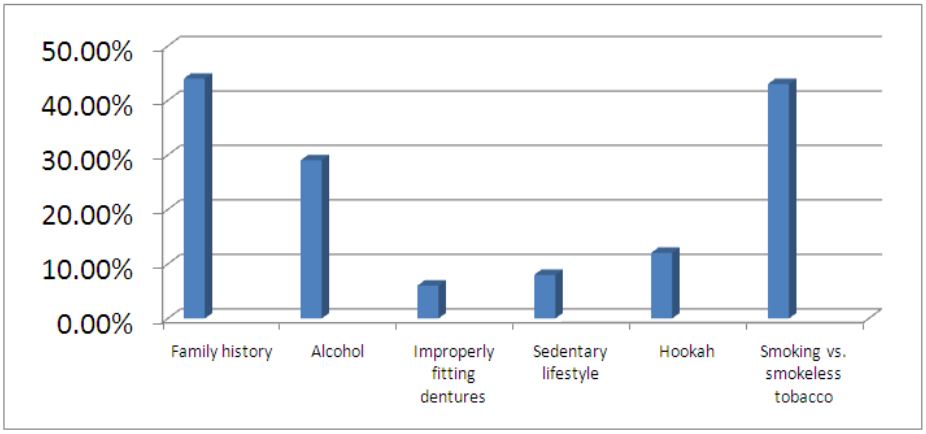
Age	Minimum	Maximum	Mean Age	Standard deviation
Overall	18	64	32.84	8.324
Males	18	64	31.73	9.259
Females	20	58	33.84	7.312

Table: II (shows the overall response to the questions)

Serial No.	Questions	Answer 1	Answer 2	Answer 3	Answer 4
Regarding General Awareness of Oral Cancer:					
1	Have you ever heard about oral cancer?	Yes 77.9 %	Maybe 1.4 %	Not Sure 1.6 %	No 19.2 %
2	Have you ever heard of oral cancer screening before?	Yes 59 %	Maybe 1.9 %	Not Sure 2.9 %	No 35.5 %
3	Have you ever had your mouth examined for oral cancer before?	Yes 8.0 %	Maybe 0.5 %	Not Sure 0.9 %	No 90.7 %
4	There is no way of treating oral cancer.	Strongly agree 11.8 %	Agree 20.1 %	Neither 39.5 %	Disagree 28.6 %
5	Oral cancer is within the top ten most common cancers in India.	Yes 59.8 %	Maybe 23.2 %	Not Sure 10.7 %	No 6.2 %
Knowledge of Signs and Symptoms:					
6	The first sign of oral cancer is always pain.	Yes 43.3 %	Sometimes 7.3 %	Not Sure 33.0 %	No 16.6 %
7	Growth of abnormal tissue is a sign of oral cancer.	Yes 35.8 %	Sometimes 17.4 %	Not Sure 32.8 %	No 14.0 %
8	Having several loose/mobile teeth is a sign of oral cancer.	Strongly agree 4.2 %	Agree 14.5 %	Neither 66.3 %	Disagree 14.7 % (Unanswered 0.3 %)
9	A paan chewer having limited mouth opening and burning sensation to spicy food must get himself checked for oral cancer.	Strongly agree 20.1 %	Agree 43.9 %	Neither 30.4 %	Disagree 4.8 % (Unanswered 0.7 %)
Knowledge of Risk Factors:					
10	Improperly fitting dentures can cause cancer.	Strongly agree 6.4 %	Agree 19.7 %	Neither 58.5 %	Disagree 15.4 %
11	Smoked tobacco (bidi/cigarettes) is safer than smokeless tobacco (paan/gutka/paan masala/mishri).	Strongly agree 5.2 %	Agree 19.2 %	Neither 32.9 %	Disagree 42.2 % (Unanswered 0.5%)
12	Hookah is a safe alternative to cigarette smoking.	Strongly agree 6.2 %	Agree 11.9 %	Neither 42.9 %	Disagree 38.2 (Unanswered 0.7 %)
13	Alcohol plays no role in causing oral cancer.	Yes 21.3 %	Sometimes 6.9 %	Not Sure 42.0 %	No 29.1 (Unanswered

					0.7 %)
14	Sedentary life style is a risk factor for oral cancer.	Strongly agree 8.0 %	Agree 29.2 %	Neither 46.9 %	Disagree 15.4 % (Unanswered 0.5 %)
15	Having a history of oral cancer in the family is an important risk factor.	Yes 43.4 %	Sometimes 8.3 %	Not Sure 30.6	No 17.1 (Unanswered 0.5 %)

Graph: II (denotes percentage response of subjects to questions regarding various risk factors of oral cancer including a comparative response to smokeless vs. smoking tobacco)



Graph: III (denotes percentage response to questions regarding signs and symptoms of oral cancer)