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RESEARCH ARTICLE

ASSESSMENT OF PREVALENCE OF MYTHS REGARDING ORAL CANCER - A HOSPITAL BASED STUDY

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Abstract

Objective: Evaluation ofthe prevalence of myths associated with oral cancer among general population.

Methods: The study was conducted in the Department of Oral and Maxillofacial Pathology and Department of Oral Medicine and Radiology, of Guru Nanak Institute of Dental Sciences and Research (GNIDSR), Panihati, Kolkata during the period of June 2023-May 2024 among 250 individuals. A self-administered, pre-tested, validated questionnaire comprising of 13 close ended questions, was given to the study subjects to assess the prevalence of myths regarding oral cancer. The collected data were statistically analysed.

Result: This study revealed that few of the individuals attending the Out Patient Department (OPD) OF GNIDSR still believed in the myths regarding oral cancer.

Conclusion: The results of this study show that still some people believes in various myths associated with oral cancer which results in increased numbers of new case as well as the mortality rate which might be due to lack of knowledge and awareness about various facts regarding oral cancer.

Introduction:-

The myths are the stories or beliefs shared by groups of people which have become part of their cultural identity [1]. Myths arisedue tounawareness, superstition, and imagination among people about what they do not know.The reasons for retaining a myth range from an individual's ignorance to the cultural, quasi-religious, educational, and structural framework of a society. Myths have a major impact on people's attitudes, behaviors, and social practices because they are typically deep seated and become a part of a society's life over extended periods of time [2]. Oral cancer refers to cancer that involves buccal mucosa, labial mucosa, gingiva, alveolar ridge, hard and soft palate, uvula, tongue, floor of the mouth, pharynx, and other undefined areas of the oral cavity. Oral squamous cell carcinoma (OSCC) accounts for 84–97% of all oral cancer [3]. According to Globocan 2022, in India, oral cancer ranks 2nd among all cancers, whereas it ranks 1st among the males and 4th among the females [4]. Myths have a tremendous impact on people's life, their attitude towards health problems and the need for treatment, and oral

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cancer is no exception. Thus, the aim of the study was to evaluate the prevalence of myths associated with oral cancer amongst individuals visiting the Out Patient Department (OPD) of Guru Nanak Institute of Dental Sciences and Research (GNIDSR).

Materials and Methods:-

A cross-sectional study was conducted in the Departments of Oral and Maxillofacial Pathology and Oral Medicine and Radiology of Guru Nanak Institute of Dental Sciences and Research (GNIDSR), Panihati, Kolkata during the period of June 2023-May 2024 after obtaining prior ethical clearance from Institutional Ethics Committee (GNIDSR/IEC/22-23/06).

Source of data:
The source of data was primary and obtained from a surveywhich included a questionnaire based on the myths and facts related to oral cancer.

Study population:
Individuals, visiting the OPD of GNIDSR,who fulfilled the inclusion and exclusion criteria were included in this study.

Inclusion criteria:
Individuals who were 18 years of age and above, having proper mental stability, willingness to participate in this study and who had not participated in similar studies previously, were included in the present questionnaire based study.

Exclusion criteria:
Individuals who have been previously diagnosed with oral cancer, precancer and those with follow up cases of oral mucosal diseases were excluded from the current study.

Sample size:
The study was conducted on 250 individuals. Sample size was calculated by using the formula $N = Zpq/ d^2$, where prevalence of myths regarding oral cancer was assumed to be58.24 % (from previous reference study), relative precision (d) = 20% of p, after considering 10% non-response.

Study protocol:
A self-administered, pre-tested, validated questionnaire was given to the individuals who met the inclusion and exclusion criteria, after taking writteninformed consent from them. The questionnaire (Fig-1) included 13 close-ended multiple choicequestions related to the myths regarding oral cancer, which were framed from available literature [2,5,6] and some myths were taken from online sources. Demographic details based on age, gender, education and occupation of the Individuals, visiting the OPD of GNIDSR, who fulfilled the inclusion and exclusion criteria were obtained. The questionnairewas validated by three independent senior faculty members from the department of Oral and Maxillofacial Pathology.

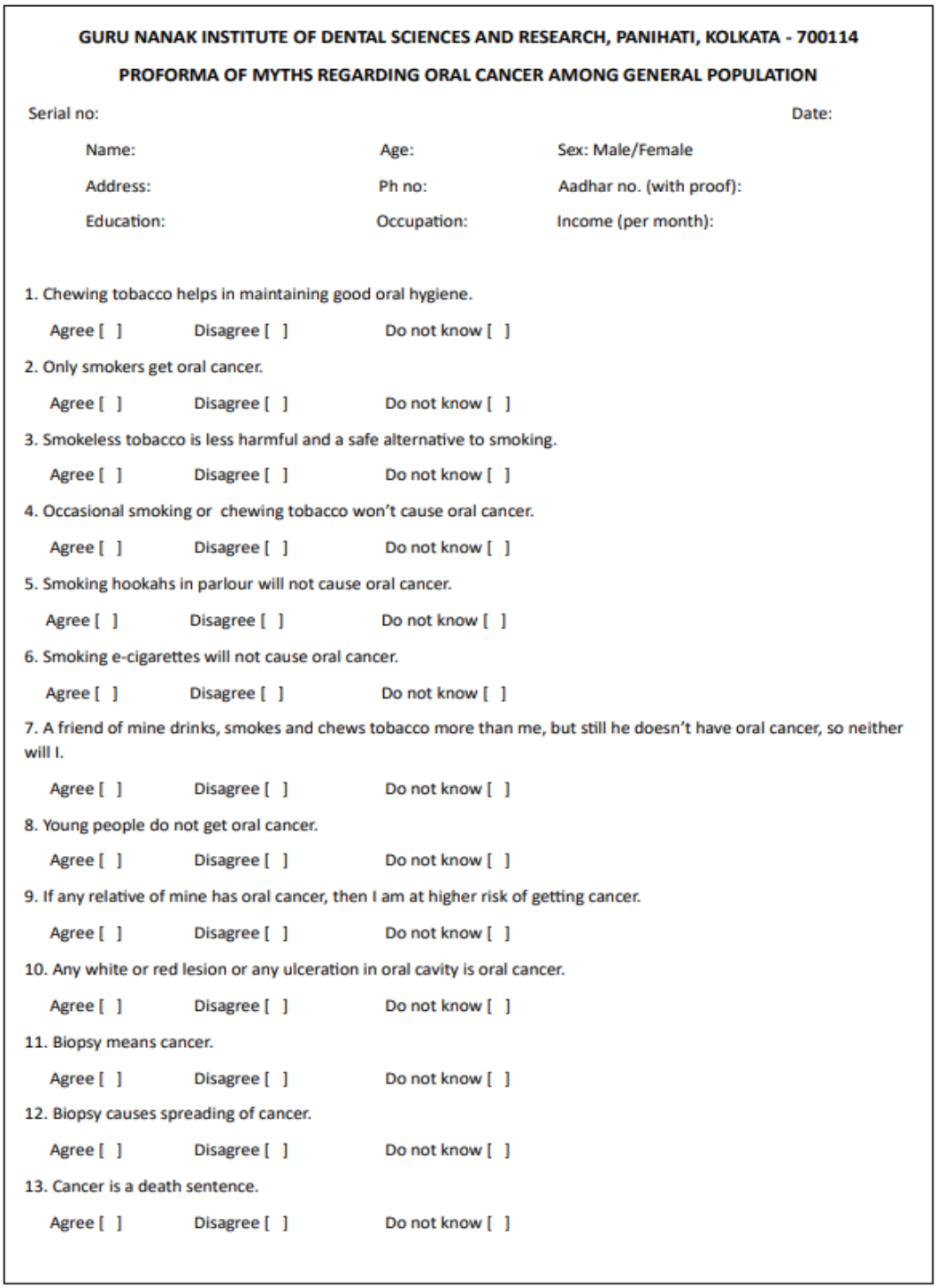
Next a pilot study was conducted on 15 individuals to further verify the validity andcomprehensibility of the questionnaire. The questionnaire's clarity was deemed adequate based on the pilot study findings, and no further modifications were done. The questionnaire's internal reliability was evaluated using Cronbach's alpha, and it was found to be acceptable.

The questions were in English and vernacular languages, including Bengali and Hindi, and the participants were instructed to choose the most relevant response.

Questionnaires were filled under supervisionand the participants were informed of the necessity of answering the questions honestly and discreetly.A statistical analysis of the gathered data was performed.

Statistical Analysis

The tabulation of the data, generation of graphs and tables were done in Microsoft Excel. The statistical analysis was done using IBM SPSS statistics 27.0 (IBM Corporation, Armonk, NY, USA). Descriptive statistics including frequency and percentage were calculated for socio-demographic characteristics of participants. Chi-square test was used to assess the associations between the categorical variables. The level of significance was fixed at p=0.05 and any value less than or equal to 0.05 was considered to be statistically significant.



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PROFORMA OF MYTHS REGARDING ORAL CANCER AMONG GENERAL POPULATION

Serial no: Date:

Name: Age: Sex: Male/Female

Address: Ph no: Aadhar no. (with proof):

Education: Occupation: Income (per month):

1. Chewing tobacco helps in maintaining good oral hygiene.

Agree [ ] Disagree [ ] Do not know [ ]

2. Only smokers get oral cancer.

Agree [ ] Disagree [ ] Do not know [ ]

3. Smokeless tobacco is less harmful and a safe alternative to smoking.

Agree [ ] Disagree [ ] Do not know [ ]

4. Occasional smoking or chewing tobacco won't cause oral cancer.

Agree [ ] Disagree [ ] Do not know [ ]

5. Smoking hookahs in parlour will not cause oral cancer.

Agree [ ] Disagree [ ] Do not know [ ]

6. Smoking e-cigarettes will not cause oral cancer.

Agree [ ] Disagree [ ] Do not know [ ]

7. A friend of mine drinks, smokes and chews tobacco more than me, but still he doesn't have oral cancer, so neither will I.

Agree [ ] Disagree [ ] Do not know [ ]

8. Young people do not get oral cancer.

Agree [ ] Disagree [ ] Do not know [ ]

9. If any relative of mine has oral cancer, then I am at higher risk of getting cancer.

Agree [ ] Disagree [ ] Do not know [ ]

10. Any white or red lesion or any ulceration in oral cavity is oral cancer.

Agree [ ] Disagree [ ] Do not know [ ]

11. Biopsy means cancer.

Agree [ ] Disagree [ ] Do not know [ ]

12. Biopsy causes spreading of cancer.

Agree [ ] Disagree [ ] Do not know [ ]

13. Cancer is a death sentence.

Agree [ ] Disagree [ ] Do not know [ ]

Figure 1:- The questionnaire used in the study comprised of 13 close ended questions.

Results:-

Table 1:- Study subjects distributed based on gender –

Sex	No of participants	Percentage (%)
Female	119	47.6
Male	131	52.4
Total	250	100.0

Table 2:- Study subjects distributed based on age –

Age groups	No of participants	Percentage (%)
18-30 years	69	27.6
31-40 years	55	22.0
41-50 years	48	19.2
51-60 years	47	18.8
>60 years	31	12.4
Mean Age $\pm$ SD = 42.12 $\pm$ 14.846		

Table 3:- Study subjects distributed based on education –

Level of Education	No of participants	Percentage (%)
Non-Matric	24	9.6
Matric	102	40.8
Graduate	124	49.6
Total	250	100.0

Table 4:- Study subjects distributed based on occupation –

Occupation	No of participants	Percentage (%)
Student	29	11.6
Labourer	9	3.6
Home maker	75	30.0
Service/Self employed	118	47.2
Retired	19	7.6
Total	250	100.0

Table 5:- Prevalence of Myths regarding oral cancer –

Questions	Responses			p-value
	Agree	Disagree	Do not know	
1. Chewing tobacco helps in maintaining good oral hygiene.	26 (10.4%)	178 (71.2%)	46 (18.4%)	**0.045***
2. Only smokers get oral cancer.	61 (24.4%)	140 (56%)	49 (19.6%)	**0.004****
3. Smokeless tobacco is less harmful and a safe alternative to smoking.	36 (14.4%)	154 (61.6%)	60 (24%)	**0.032***
4. Occasional smoking or chewing tobacco won't cause oral cancer	48 (19.2%)	112 (44.8%)	90 (36%)	**0.012***
5. Smoking hookahs in parlour will not cause oral cancer.	40 (16%)	105 (42%)	105 (42%)	**0.024***
6. Smoking e-cigarettes will not cause oral cancer	43 (17.2%)	74 (29.6%)	133 (53.2%)	**0.006****
7. A friend of mine drinks, smokes and chews tobacco more than me, but still he doesn't have oral cancer, so neither will I.	39 (15.6%)	113 (45.2%)	98 (39.2%)	**0.003****
8. Young people do not get oral cancer.	57 (22.8%)	124 (49.6%)	69 (27.6%)	**0.004****

9. If any relative of mine has oral cancer, then I am at higher risk of getting cancer.	41 (16.4%)	120 (48%)	89 (35.6%)	0.056
10. Any white or red lesion or any ulceration in oral cavity is oral cancer.	93 (37.2%)	146 (58.4%)	11 (4.4%)	**0.002****
11. Biopsy means cancer	86 (34.4%)	156 (62.4%)	8 (3.2%)	**0.024***
12. Biopsy causes spreading of cancer.	114 (45.6%)	127 (50.8%)	9 (3.6%)	**0.006****
13. Cancer is a death sentence.	71 (28.4%)	138 (55.2%)	41 (16.4%)	**0.049***

*statistically significant at p-value <0.05; ** statistically significant at p-value <0.01

Out of the 250 participants, 131 were male and 119 were female (Table-1). They were divided intofive age groups, e.g. ≤30 years (27.6%), 31-40 years (22.0%), 41-50 years (19.2%), 51-60 years (18.8%) and >60 years (12.4%) (Table-2). The study subjects were also distributed based on education (Table-3), i.e. non-matric (9.6%) [below 10^{th} pass], matric (40.8%) [10^{th} pass-12^{th} pass] and graduates (49.6%). Based on occupation (Table-4), the study subjects were distributed as student (11.6%),labourer (3.6%),home maker (30%),service/self-employed (47.2%) and retired (7.6%).

While evaluating the prevalence of myths regarding oral cancer (Table-5)in this study,it was found that around 71.2% respondents did not agree that chewing tobacco helps in maintaining good oral hygiene, whereas 24.4% believed that only smokers get oral cancer and 14.4% believed smokeless tobacco is less harmful and a safe alternative to smoking. About 19.9% believed that occasional smoking or chewing tobacco won't cause oral cancer.About 42% and 29.6% of the subjects believed that smoking hookahs in parlour and smoking e-cigarettes will cause oral cancer respectively.15.6% of the participants believed that ifone of their friend drinks, smokes and chews tobacco more than them, but still he/she doesn't have oral cancer, then neither will they.22.8% agreed that young people do not get oral cancer.Around 58.4% of the respondents did not believe that any white or red lesion or any ulceration in oral cavity is oral cancer.62.4% of the study subjects did not agree with biopsy means cancer and almost 50.8% did not believe that biopsy causes spreading of cancer. 28.4% of the participantsbelieved cancer is a death sentence.

The results also showed that the majority of the subjects who believed in most of the myths were males. The percentage of females believing in the myth was higher for the myth that "Chewing tobacco helps in maintaining good oral hygiene" (57.70%) (Fig-2).

Most of the myths were prevalent in the younger age group (≤30 years of age), whereas, the myth that "cancer is a death sentence" was most prevalent in the elderly population (age group of 41-50 years) (Fig-3).

While evaluating the prevalence of myths regarding oral cancer distributed based on education, it was found that most of the myths were agreed by graduates, except the myth about "occasional smoking or chewing tobacco won't cause oral cancer", which was mostly agreed by the matric passed (Fig-4).

The results showed that most of the myths regarding oral cancer were believed by the individuals who were servicemen and were self-employed (Fig-5).

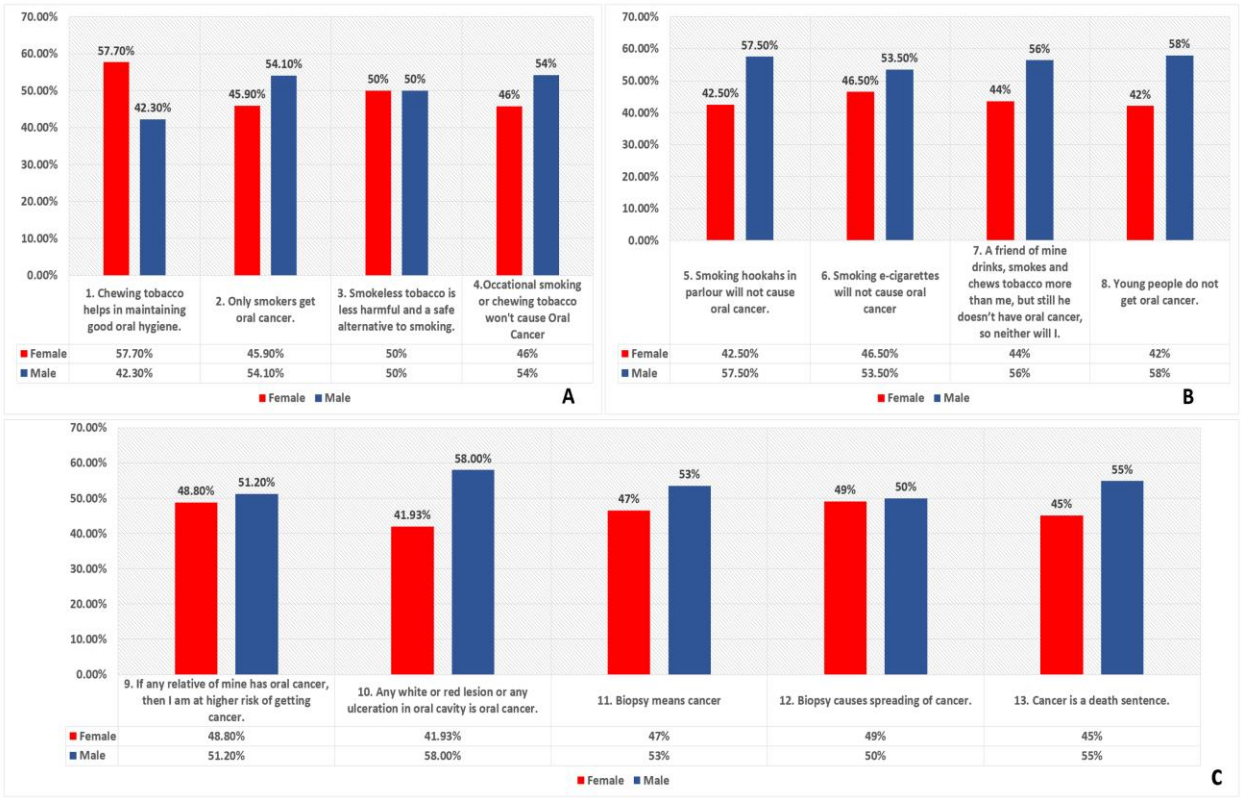

Figure 2:- Prevalence of myths regarding oral cancer distributed based on gender (A,B,C).

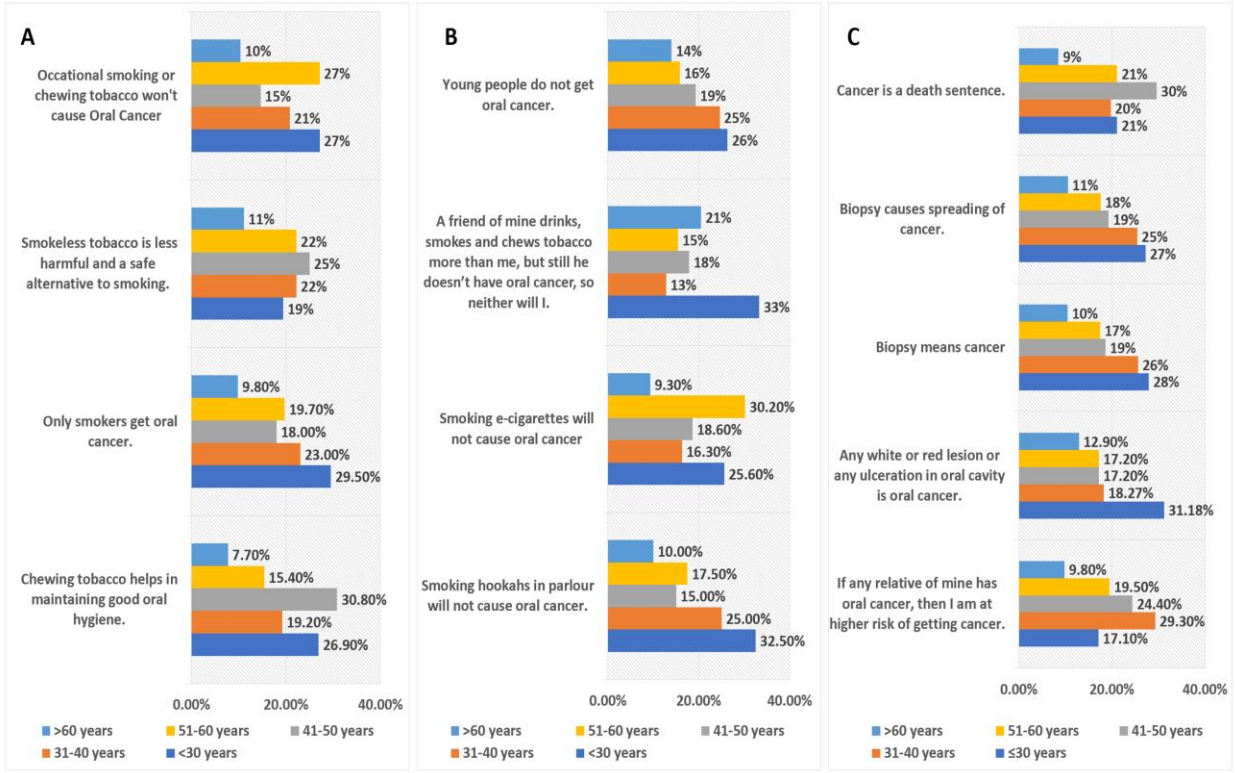

Figure 3:- Prevalence of myths regarding oral cancer distributed based on age group (A,B,C).

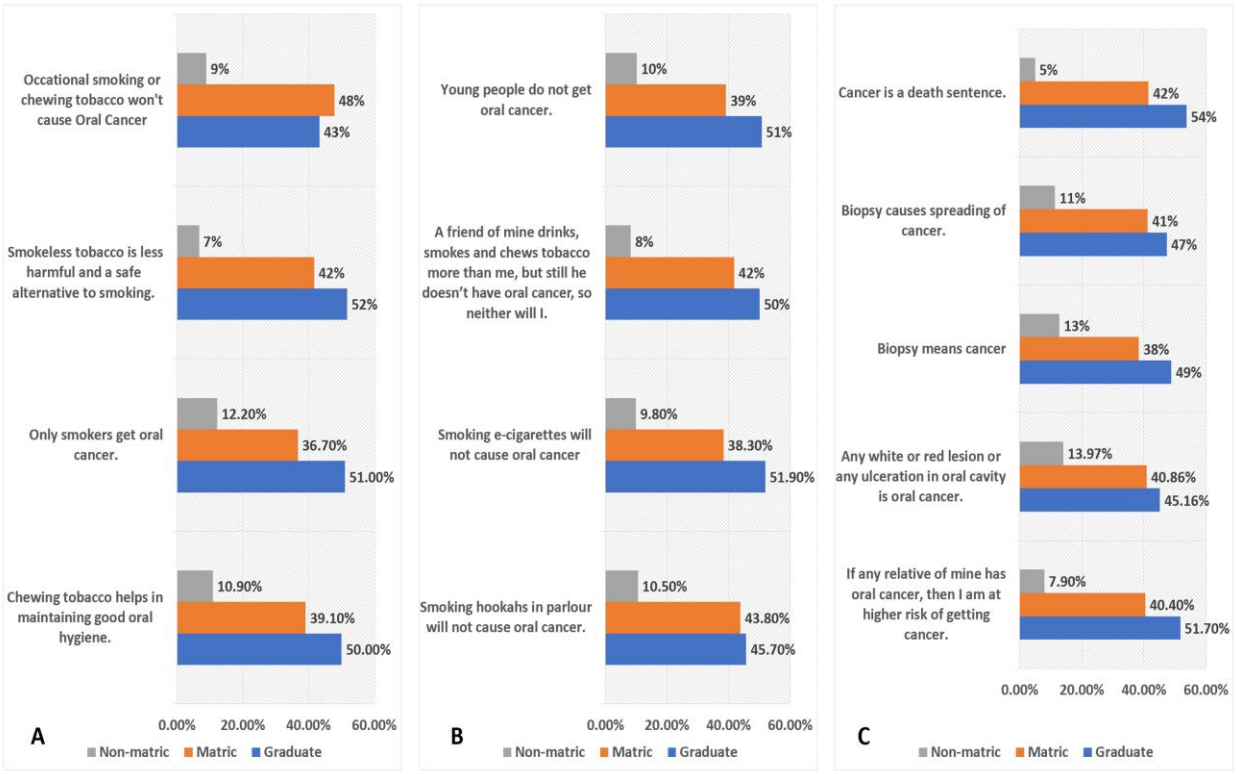

Figure 4:- Prevalence of myths regarding oral cancer distributed based on education (A,B,C).

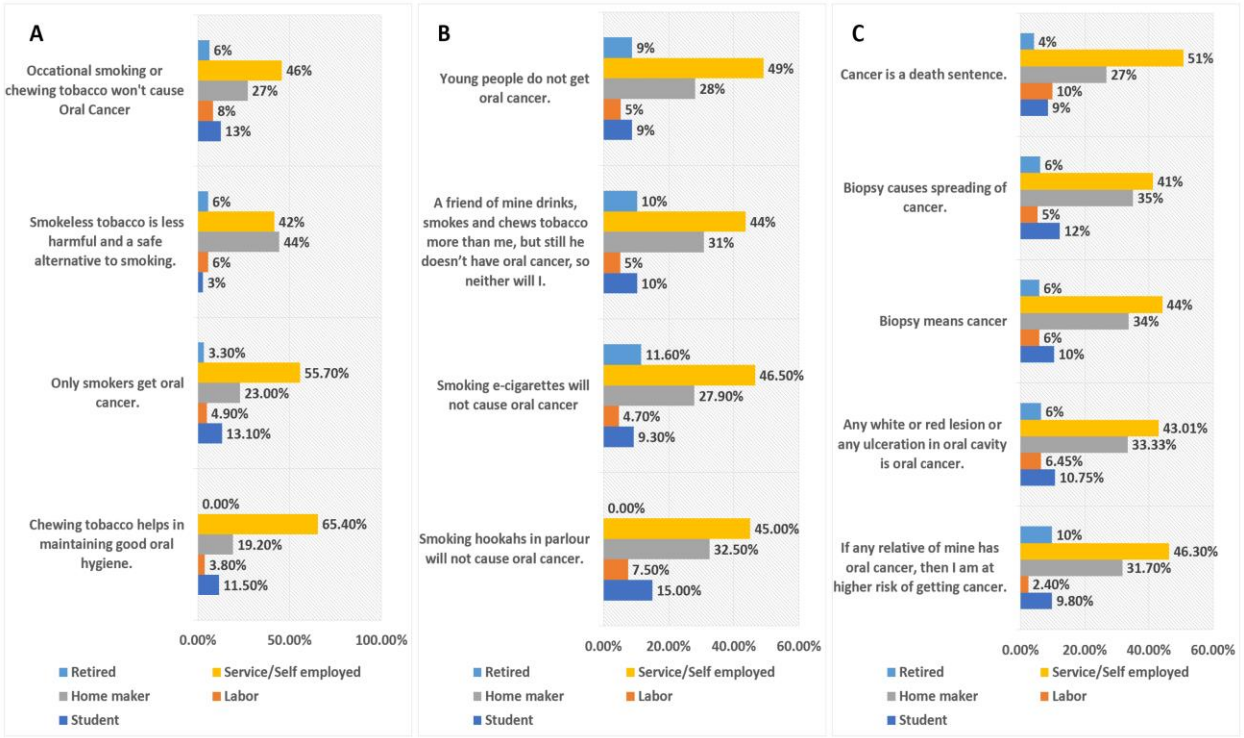

Figure 5:- Prevalence of myths regarding Oral cancer distributed based on Occupation (A,B,C).

Discussion:-

A myth is a belief held by an individual that is not supported by fact [5]. Myths can be widespread in a population for a number of reasons, including social misconceptions, cultural beliefs, and inadequate knowledge [5]. They are usually passed down from generation to generation [5]. We must alter the mindset and behaviour of the populace in order to eradicate misconceptions and provide education to the individuals [5]. It is essential to be aware of the prevailing myths and misconceptions in the society as they act as barriers and prevent individuals from seeking proper management [5].

Cancer is a disease where misconceptions can lead to fatal consequences [6]. According to Globocan 2022, oral cancer was the most common cancer among male in India, with 107,812 new cases reported, accounting for 15.6% of all cancer cases among male, whereas the number of new cases of lip and oral cavity cancer among females in India was 35,947, accounting for 5.0% of all cancer cases among females.The deaths from oral cancer ranked 2nd (8.7 %) among the deaths from other cancers [4].Given these conditions, cancer awareness and prevention ought to take precedence since we are in the midst of a catastrophic cancer epidemic [6].

This study was conducted to assess the perception regarding the innumerable myths and unnecessary fear about oral cancer in general population, so that we can take necessary measures regarding those fallacies which will help in early diagnosis and proper treatment for this devastating disease.

In this study, there were 10.4% people who believed that chewing tobacco would help to maintain the good oral hygiene. In many impoverished communities of West Bengal and neighbouring states,Gudakhu, a paste-like substance, containing tobacco, molasses, lime and kharia (a form of red soil) is widely used for rubbing teeth and gums with fingers [7]. The reason behind holding this myth is that while rubbing teeth with gudakhu gives a gritty feeling, so people believe that it will help in removing stains, plaques and bad breath. It also gives them a sensation of euphoria, so they cannot quit the habit easily. But they are unaware about the detrimental effect of gudakhu, which can cause abrasion of the teeth and also oral cancer.

The study showedthat 24.4%subjects thought that only smokers get oral cancer and 14.4% believed smokeless tobacco is less harmful and a safe alternative to smoking.The myth that smokeless tobacco is less harmful and a safe alternative to smoking is prevalent because chewing tobacco with areca nut and betel quid is a common practice in many households and it is not prohibited as much as smoking tobacco. However, the factremainsthat though nicotine and tobacco use are key risk factors for oral cancer, the disease can still develop if one does not smoke or chew tobacco asgenetics and many other factors may also contribute to the development of oral cancer.

19.2% of our study subjects believed thatoccasional smoking or chewing tobacco will not cause oral cancer. This is because many people are unaware that the detrimental effects of tobacco use remain consistent regardless of quantity.

16% and 17.2% of the people believed smoking e-cigarettesand hookahs in parlour will not cause oral cancer. This misconception isdue to lack of awareness regarding the potential consequencesbecausee-cigarettes and hookahs are frequently promoted as safer substitutes for traditional cigarettes. The impression about e-cigarettescan be partially explained by the fact that since there is no combustion in e-cigarettes, no smoke is released and e-cigarette vapour contains lesser toxins than cigarette smoke at lower concentration. But oral cancer may still develop from the carcinogenic substances found in e-cigarettes, such as acetaldehyde and formaldehyde[8].

Smoking hookah in public places like hookah parlorshas gained acceptance amongst the youth in urban society in recent times as it is perceived to be associated with minimal health hazards. Hence it has gained societal acceptance as people believe it to be a harmless indulgence. E-cigarettes and hookah are marketed by advertising agencies by highlighting on their varied flavours which appeals modern youth and creates a false sense of safety in them.

Human beings are easily influenced and convinced by their near and dear ones. In this study it was seen that 15.6% people believedthat if a friend of theirs drinks, smokes and chews tobacco more than them, but still he/she doesn't have oral cancer, then neither will they", whereas 16.4% believed that "if any relative of theirs has oral cancer, then he/she is at higher risk of getting cancer".

This is a result of the widespread perception that if something doesn't happen to their loved ones, it won't happen to them either. This demonstrates their ignorance about varying susceptibilities of individuals and their lack of awareness that the majority of relatives of patients with oral cancer share the same cancer risk as the general population. Though it is somewhat true that there is a genetic predisposition of cancer, but it depends on various other factors like carcinogenic exposure and vulnerabilityof individuals to these factors [5].

22.8% people believe that “young people do not get oral cancer”.This idea stems from the observation that oral cancer is more common in adults over 50 years since the disease takes time to develop and manifest symptoms.

However, the epidemiological data from recent studies showed that thoughoral cancer affects the majority of people between the ages of 50 and 70, it may affect children as young as ten years old[9]. The predisposition of young adults to oral cancer can be partly explained by the fact that many people start smoking and indulge in tobacco products like gutkha, khaini etc. from a very young age under peer pressure or to combat stress. The consumption of betel quid and areca nut is very common in many households, specially amongst the elderly people and women. Children spend a lot of time with their grand parents who fondly give betel quid with areca nut to their grandchildren. This causes constant oral mucosal insult from a very early age and leads to OSMF in young adults.Murthy et al. in 2022 found in a study that the malignant transformation rate of OSMF was 6%[10]. The transformation of OSMF to oral cancer is another important reason for increase in oral cancer in young age groups [11].

37.2%people believed “any white or red lesion or any ulceration in oral cavity is oral cancer”.This is because nowadays there has been an increase in the prevalence of oral cancer and people are scared of this dreadful disease. The general populationhas little awarenessabout the many precancerous and benign lesions that occur in the oral cavity, which have better prognosis with proper diagnosis and treatment. Nearly one-third of the study population believed that “biopsy means cancer” and some believed “biopsy causes spreading of cancer”.Though biopsy is the primary tool forconfirmation of malignancy, it is also essentialfor diagnosis of any lesion. It can provide information based on which proper treatment plan can be made.However,undergraduate students as well as practicing dental surgeons have limited knowledge and awareness regarding biopsy procedures,which in turn, adds to the misconception among general population regarding biopsy [11].As cancer often gets diagnosed at advanced age, patients die from metastasis of cancerto various body parts, people with lack of knowledge misinterpret that biopsy itself caused the spreading of cancer.

28.4% of the study subjects believed that cancer is a death sentence. This belief is prevalent because of high mortality rateof oral cancer. This is due to the late diagnosis of the disease and because people are not aware of the fact that if the disease can be detected in early or in the precancer stage it has better prognosis. It is also due to patients refraining from seeking expert opinion due to prevalence of myths,engravedwithin the society.

There is not much statistically significant difference noted in the responses to myths among different sex, age groups, educational groups and occupational groups except for few myths, which show that they are prevalent among all age, sex, educational and occupational groups.

Limitations:-

There are not many studies pertaining to the prevalence of myths regarding oral cancer. That is why some myths in our study did not have a literature support and they were based on the common beliefs ofindividualsthat we encountered and interacted with during our routinepractice. This study is limited to a certain geographic locality, but it is an initiative to a more extensive study covering a vast geographic area in which the influence of socio-economic status on the prevalence of myths is also intended to be established.

Conclusion:-

In this study, we saw that the number of people believing in the myths regarding oral cancer are few, which proves that these myths are constantly getting reduced.So it is crucial to dispel the myths surrounding oral cancer to ensure that individuals are well-informed about the risks, symptoms, and preventive measures. Oral cancer is not limited to smokers or the elderly; it can affect anyone, regardless of age or gender. Early detection and timely treatment are vital in improving the prognosis of oral cancer. By debunking these myths (through health education), we can

promote awareness among general population and encourage them for regular oral check-ups, which go a long way in early diagnosis and prevention of oral cancer.

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Authors Contribution:
All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Data Availability:
Nil.

Study Registration:
Nil.

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