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A CASE STUDY ON THE AWARENESS OF BREAST AND ORAL CANCERS AMONG THE STUDENTS IN SHANTHI NAGAR, BENGALURU, KARNATAKA

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ABSTRACT

Breast cancer and oral cancer are among the most prevalent types of cancer affecting women in India. Nevertheless, the knowledge among the population about these diseases is inadequate. An online questionnaire survey was conducted from 25th May, 2022 to 15th June, 2022 in a sample of 50 consenting students in Shanthi Nagar, Bengaluru. The questionnaire was self-administered so as to avoid biassed responses. Apart from their socio-demographic characteristics, the participants were asked to answer 30 questions to assess their proficiency in breast and oral cancer. The volunteer sample exhibited satisfactory knowledge of these cancers. The mean total score based on their understanding of the diseases is 58.5%. However, 78.6% of the students do not know the steps of breast self-examination whereas 88.1% do not know that of oral cancer. Over 64% of the respondents have never done self-examination for cancer in their lifetime. The frequency of self-examination practices among the students of Shanthi Nagar is negligible. This is indicative of the lack of awareness programs among the population. It is highly suggested that campaigns be organised to educate the people on the gravity of early diagnosis and self-examination.

BACKGROUND

According to the World Health Organisation's report on 22nd February, 2022, cancer is the primary reason for death globally. It is attributed for approximately one in six deaths in the year 2020. Almost 30-50 % of cancers can be curtailed through effective methods of keeping away from risk factors and executing prevention schemes based on evidence. In addition, early detection, proper treatment and care of patients can help mitigate the cancer burden. Most cancers can be cured if diagnosed at the beginning stage.

The estimated burden of cancer in India was 26.7 million for 2021 (Kulothungan et al., 2022). Mouth (5.7%), oesophagus (5.8%), lung (10.6%), breast (10.5%), liver (4.6%), stomach (5.2%) and cervix uteri (5.3%) are the seven vital cancer sites, accounting for over 40% of total cancer burden in India.

In Bengaluru, the projected frequency of cancer is 27,583 cases among women whereas the cancer incidence among them is 8959 cases as estimated by Kidwai Memorial Institute of Oncology- Bengaluru. Bengaluru is ranked third in the country in terms of incidence of breast cancer, the first two being Hyderabad and Chennai (The Hindu 21 October 2021). Nearly 1688 new breast cancer diagnoses are reported in the city every year. It is the most prevalent type of cancer affecting women in Bangalore.

Oral cancer contributes to 3.9% of the cancer burden among women in Bengaluru city. The most prevalent is tobacco related oral cancers.

OBJECTIVE OF THE STUDY

The purpose of the study was to assess the awareness among female students living in Shanthi Nagar, a constituency in Bengaluru Urban district, Karnataka, on aetiology, symptoms and treatment of breast and oral cancers. The survey also examines the confidence of these women in early detection of breast and oral cancer through self-examination methods.

RESEARCH MATERIALS AND METHODS

PARTICIPANTS

The selected population comprised female students in Shanthi Nagar, Bengaluru. The eligible women were aged between 17 and 30 years. A minimum of Higher Secondary Education was mandatory. Participants were selected through consecutive and convenient sampling techniques. None of the participants were either diagnosed with breast and oral cancers or were oncologists.

Shanthi Nagar is a well-established residential cum mercantile part of the Bengaluru city in Karnataka, India with a literacy rate of 65-67% (Deccan Herald 1 April 2016). The medical needs of the inhabitants are fulfilled primarily by Agadi Hospital and Research Centre, P D Hinduja Sindhi Hospital and Abhaya Hospital.

DATA COLLECTION

A questionnaire taken from previous studies (Ramirez et al., 2008) (A. Hadi et al., 2010) with few relevant additions to it was utilised for the assessment of participants regarding their understanding of breast and oral cancers. The questionnaire had two sections: knowledge on breast cancer and that on oral cancer. There were a total of 30 questions, 15 each in each section. It concentrated on the following realms: awareness of the symptoms, causes, treatment and self-examination. It was self-administered.

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Each consenting candidate was sent an online copy of this questionnaire and was allowed to fill it at their convenience in a private setting. After submitting their response each participant received a copy of their response with the correct answers through email.

DATA ANALYSIS

The collected data was analysed using Microsoft Excel after recording it in a spreadsheet.

RESULTS

The questionnaire was sent to 50 individuals, out of which 42 returned their responses. The response rate is 84%. The mean age of the women was 21.4. Majority of the participants were undergraduate students.

Table 1. Socio-Demographic Variables of the Respondents

Variables	n	%
Age (years)		
18	4	9.5
19	3	7.1
20	9	21.4
21	9	21.4
22	9	21.4
23	1	2.4
24	3	7.1
25	1	2.4
27	2	4.8
29	1	2.4
Educational level		
12th	4	9.5
Undergraduate	29	69
Post-graduate	5	11.9
LL.M	1	2.4
MBBS	2	4.8
Mphil	1	2.4

n = number of participants; % = percentage of participants

PARTICIPANTS' KNOWLEDGE ON BREAST CANCER

The respondents' knowledge on breast cancer was satisfactory. Plurality of the participants identified most of the symptoms of breast cancer but none of them were aware of all the symptoms (Figure 1). All of the participants were informed that a lump in breast was a symptom. 95.23% recognized pain in the breast or armpit as a symptom. No respondent was aware that redness of skin, change in nipple position, change in shape and lump under armpit are also symptoms of breast cancer.

While 45.2% of the students believed that only 1 in 100 women have a risk of developing breast cancer in their lifetime, another 40.5% correctly pointed out a 1 in 9 risk (Figure 2). Though the majority of the participants rightly indicated the treatment strategies and the fact that breast cancer may be inherited, not even one third of them knew the correlation of age with the risk of breast cancer (Figure 3). A large proportion (42.9%) thought that age is inversely associated with breast cancer risk.

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Figure 1. Proportion of students identifying each symptom from a list of eleven breast cancer symptoms

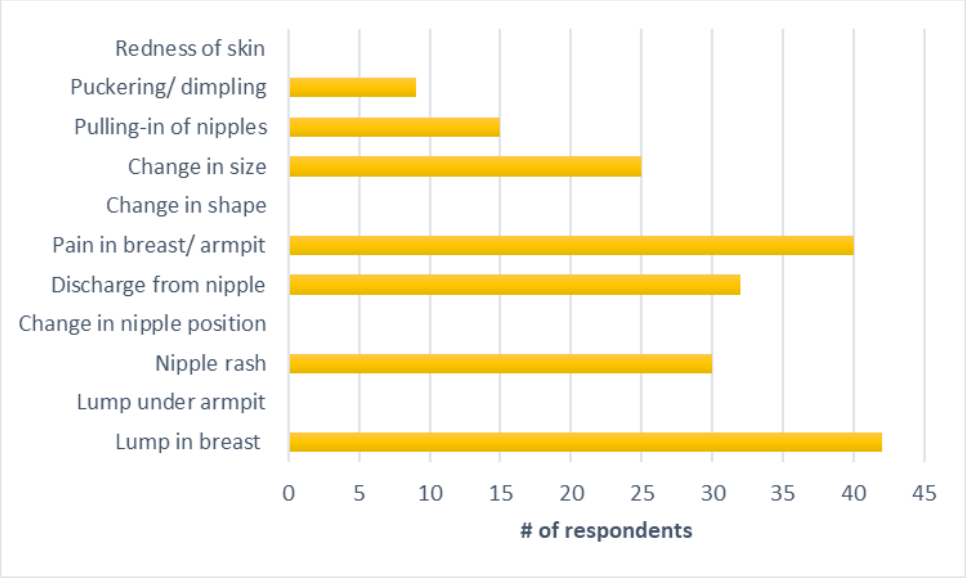


Figure 2. Participants' perception on lifetime risk of developing breast cancer

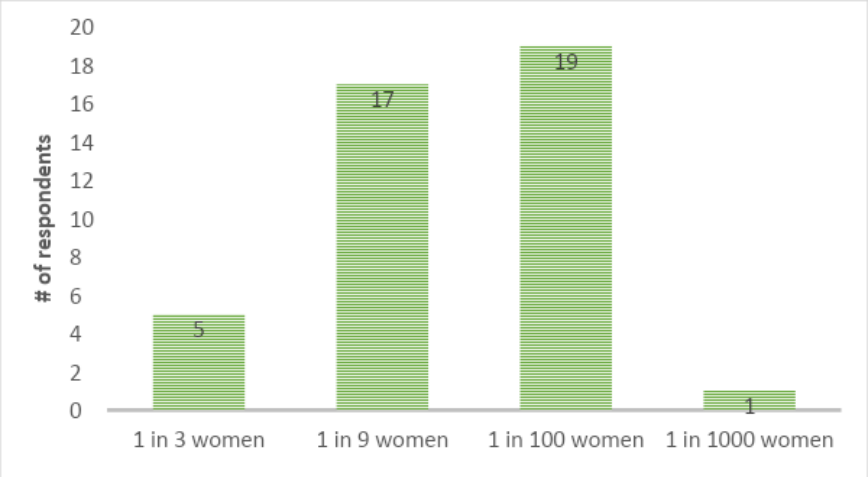
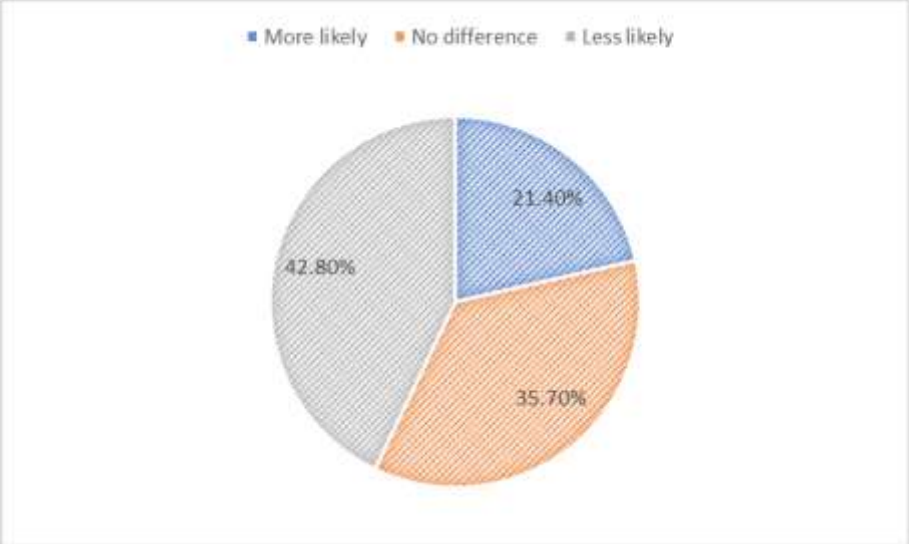


Figure 3. Participants' knowledge on chances of developing breast cancer with increase in age



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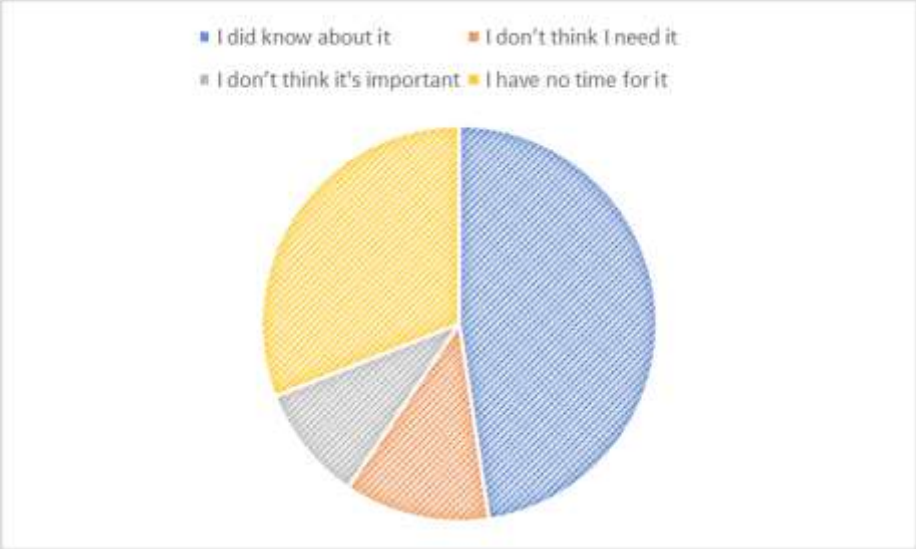
KNOWLEDGE OF THE RESPONDENTS ABOUT EARLY DETECTION AND BSE

88.1% of women who took the survey agreed that early detection can aid in curing the disease easily. However, only 35.7% know how to perform Breast Self-Examination. Among the students who practised BSE, 52.9% stated that they preferred monthly examinations. When asked the reason for not executing self-examination, 47.6% stated that they were not apprised of it. 11.9% thought they did not require examination (Figure 4). Similarly, more than half of the study group was not aware of a mammogram and 19% indicated that mammogram screening should start at the age of 30 years. The ideal age to begin mammogram is 40 years which was identified by 7.1% of respondents.

Although a significant rise in the number of new cases is observed every year, only 14.3% of respondents had received a clinical breast examination performed by health workers. Also, not even half of the respondents were ready to participate in screening programs. Despite breast cancer being a serious health issue, 9.5% of the participants were not willing to go to a doctor and another 9.5% of them were unsure if they must consult a doctor.

Figure 4. The study participants' reasons for not performing breast self-examination



PARTICIPANTS' KNOWLEDGE ON ORAL CANCER

Plurality of the respondents were aware of the causes of oral cancer (Figure 5) and 64.3% recognized it as a non-contagious disease while the remaining believed it to be contagious. Consumption of alcohol could increase the risk of oral cancer but 35.7% of students were dubious of it. Most of the participants' perception was that only tobacco caused oral cancer. 61.9% had an idea that Human Papillomavirus (HPV) can cause cancer and the remaining were unaware of this. A large proportion of the participating women identified the symptoms with over 70% of right answers for each symptom (Figure 6).

Figure 5. Knowledge of causes among the study participants

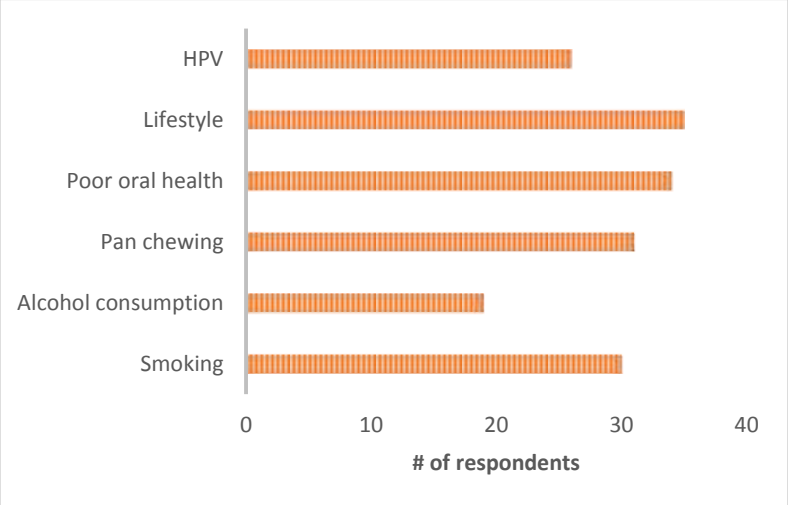


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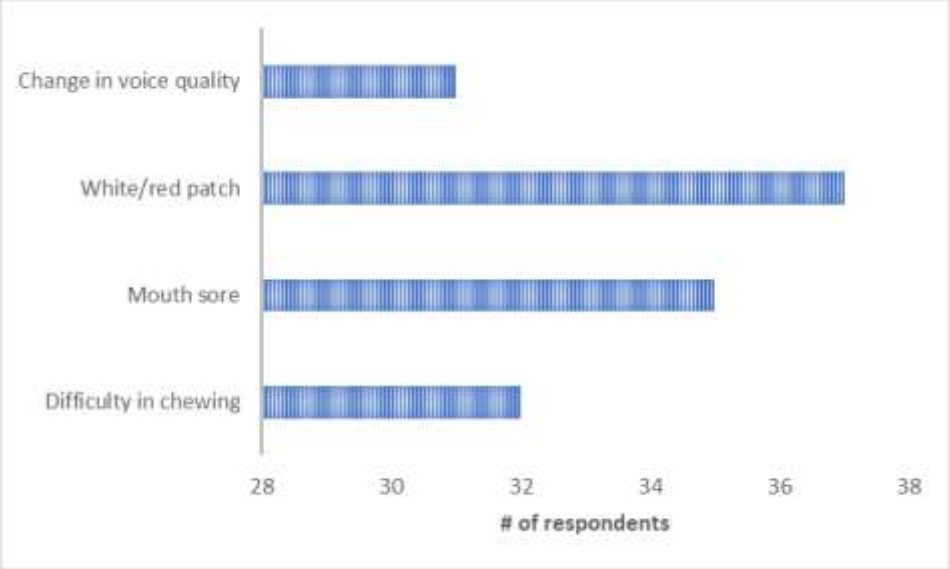
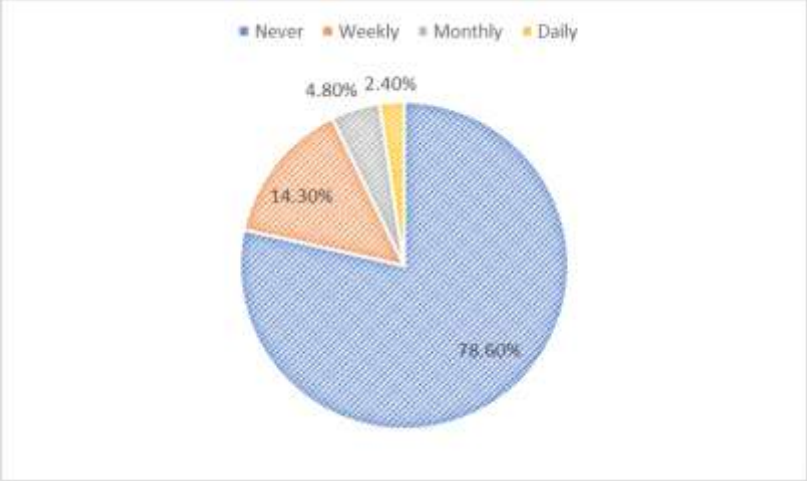
Figure 6. Proportion of respondents identifying each symptom of oral cancer from a set of 4 symptoms



ORAL SELF-EXAMINATION AND EARLY DETECTION

Out of the study participants, 66.7% were of the opinion that detecting oral cancer early can make recovery easy whereas 33.3% could not confirm this and hence their answer was rather ambiguous. However, none of the participants disagreed with this. It was very disappointing to realise that only 11.9% among the students knew how to perform Oral Self-Examination (OSE). Similarly, the proportion of women who never conducted OSE in their lifetime was 78.6% (Figure 7).

Figure 7. Frequency of performance of OSE among the respondents



DISCUSSION

The findings of this survey on awareness of cancer among students in Bengaluru agree with the previous studies (Madhukumar et al., 2017) (Susan Sajan et al., 2021) conducted in the city. Shanthi Nagar is an urban locality with a good literacy rate and hence majority of the participants had some knowledge on breast cancer and oral cancer. However, they did not have an explicit idea about early detection methods.

It was observed that the participants had difficulty in indicating the risk of women developing breast cancer in their lifetime. A vast majority thought it was as less as 1 in 100 women. Regarding the relation of cancer occurrence with one's age, very few students identified the correct answer while the majority thought there was no difference. Breast cancer risk is more in women with a family history of breast cancer. The inheritance of mutated tumour suppressor genes-BRCA1 and BRCA2 from the mother can cause breast cancer in the offspring. Although 45.2% had knowledge on this type of hereditary breast cancer, plurality of the respondents could not recognise this. The participants had very limited knowledge on Breast self-examination techniques despite knowing that early detection could improve the chances of survival.

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In spite of being an educated group, the participants exhibited signs of hesitation in consulting a doctor for breast screening. The social stigma associated with breast cancer may be regarded as a reason for women not ready to take part in breast screening programs.

When compared to the students' awareness on breast cancer, their knowledge on oral cancer is relatively high. Most of the participants answered all of the questions related to mouth cancer accurately. It can be noted from the responses that mouth cancer being generally visible like an infection in the beginning stages, students have a misconception that it is contagious. Not even half of the study population were aware of the technique of Oral self-examination and 78.6% had never performed OSE in their lifetime. In addition, 33.3% of participating women did not indicate that early diagnosis of mouth cancer can strengthen the chances of survival.

These observations are confined to a small group of urban students and do not apply to the entire city of Bengaluru. The understanding of breast and oral cancers, and their self-examination procedures may be negligible in the rural areas of the city. Also, the limited sample size may indicate inaccuracy in the derived estimations.

CONCLUSION

It can be inferred from the survey that the majority of students in Shanthi Nagar, Bengaluru have adequate knowledge on causes, symptoms and methods of treatment of breast and oral cancer. But they do not carry out self-examination and are unaware of how to perform it. However, they are informed of its significance. Knowledge deficiency on self-examination methods lead to late diagnosis of cancer and hence heightens the risk of death among patients. Therefore, more extensive awareness drives must be initiated to decrease the mortality rate in Bengaluru. Screening programs must be conducted by health workers once in every month to promote early detection.

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ANNEXURE

Questionnaire used for the survey

Socio-Demographic Characteristics of the participants		
1	What is your name?	
2	What is your age?	
3	What is your gender?	
4	What is your educational qualification?	
5	What is your residential province?	
BREAST CANCER		
Questions		**Options**

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1	Which of the following do you think could be a symptom of breast cancer?	Redness of skin Puckering/dimpling Pulling-in of nipples Change in size Change in shape Pain in breast/ armpit Discharge from nipple Change in nipple position Nipple rash Lump under armpit Lump in breast
2	How many women will develop breast cancer in their lifetime?	1 in 3 women 1 in 9 women 1 in 100 women 1 in 1000 women
3	Does your age make you more or less likely to develop breast cancer?	More likely No difference Less likely
4	Breast cancer is easier to cure when it is detected early	Yes No I don't know
5	Surgery is the main form of treatment for breast cancer	Yes No Depends on the stage
6	Breast cancer can be inherited	Yes No I don't know
7	What do you think the best approach to breast care is?	Chemotherapy and radiotherapy Hormonal therapy Surgery or removal of whole breast It depends on the stage
8	Do you practice breast self-examination (BSE)?	Yes No
9	If yes, what is your frequency of practice of BSE?	Weekly Monthly Every 6 months
10	If no, why?	I didn't know about it I don't know how to do it I don't think it's important I don't think I need it
11	Do you know what is mammogram?	Yes No
12	At what age do you think mammogram screening should start?	
13	Have you ever had a clinical breast examination by a health worker?	Yes No
14	Would you agree to participate in a Breast Cancer screening	Yes

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	Program if offered?	No Maybe
15	If you or a family member had any breast problem would you go to the doctor?	Yes No Maybe
	ORAL CANCER	
1	Oral cancer is a contagious disease?	Yes No
2	Do you know the cause of oral cancer?	Yes No
3	Can smoking cause oral cancer?	Yes No Maybe
4	Can alcohol consumption cause oral cancer?	Yes No Maybe
5	Does pan chewing cause oral cancer?	Yes No Maybe
6	Poor oral health increases the risk of oral cancer	True False
7	Early detection improves oral cancer. Do you agree?	Yes No Maybe
8	Lifestyle can influence risk of oral cancer. Do you agree?	Yes No
9	Difficulty chewing/swallowing is a symptom of oral cancer	Yes No
10	A mouth sore that does not heal is a symptom of oral cancer	Yes No
11	White/red patch in the mouth is a symptom of oral cancer	Yes No
12	The slow change in voice quality is a symptom of oral cancer	Yes No
13	Do you know how to perform oral self-examination?	Yes No
14	How often do you perform an oral self-examination?	Daily Weekly Monthly Never
15	Human papillomavirus can cause oral cancer	True False