

# Prevention of Oral Cancer among Nursing Students at Selected Colleges in MP

Nalini Ramakrishnan<sup>1</sup>, Jinu K Rajan<sup>2</sup>

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## Abstract

**Introduction:** Oral cancer is 1/10 mainly widespread cancers in the world. Its high frequency in Central and South East Asian countries like India, Bangladesh, Sri Lanka Thailand, Indonesia, Pakistan, has been well documented.<sup>2</sup> It is estimated that during the year 2008 about 2.6 lac new cases and 1.27 deaths occurred worldwide, with a mortality 1.9 per lac population. Burden of oral cancer in India, 20/1,00,000 population are pretentious by oral cancer which is about 30% of all types of cancer. Over 5 people in India die every hour every day because of oral cancer and the same number of people dies from cancer in oropharynx and hypo pharynx.<sup>1</sup> Cancer listing is not necessary in India, so the true incidence and mortality may be higher, as many cases are unrecorded and loses follow up. None of the national registry provides cancer incidence or mortality data for India.<sup>4</sup>

**Objectives:** (1) To assess the Pre-test and post-test knowledge mean of nursing students regarding prevention of oral cancer at selected Institute. (2) To assess the effectiveness of structured teaching regarding prevention of oral cancer at selected Institute. (3) To find out the association between pre test knowledge mean of nursing students with selected socio-demographic variables of nursing students.

**Results:** The results of the study indicates that structured teaching programme was effective in this study for improving the knowledge of the nursing students. The result obtained for post-test mean and standard deviation more over the 'Z' value obtained was found to be significant at 0.05 level thus it can be concluded that structured teaching programme was effective in increasing the level of knowledge regarding prevention of oral cancer. The mean percentage difference was 24.45% thus the hypothesis is accepted. Another finding of study was that there is an association between knowledge level of nursing students with their selected socio-demographic variables undergoing structured teaching programme at significant 0.05 level so the hypothesis is accepted.

**Conclusion:** Prevention is better than care. As statical data shows that it is a global burden in India to prevention our population for oral cancer that is the highest rate of cancer in India. As nursing students are the health care provider so education is important to pathway of prevention.

**Keywords:** Oral cancer; Burden of oral cancer in India; Effectiveness of structured teaching.

**Author's Affiliations:** <sup>1</sup>Assistant Professor, <sup>2</sup>Principal, Amaltas Institute of Nursing Sciences, Dewas 455001 Indore, Madhya Pradesh, India.

**Corresponding Author:** Jinu K Rajan, Principal, Amaltas Institute of Nursing Sciences, Dewas 455001 Indore, Madhya Pradesh, India.

**E-mail:** [jinukrajan@rediffmail.com](mailto:jinukrajan@rediffmail.com)

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## INTRODUCTION

The most prevalent type of cancer is the squamous cell carcinoma. It is considered to have poor prognosis with a five year survival rate in 50 to 60% of cases. It is worth mention that there was no notable prognosis upgrading in the recent decades.<sup>3</sup> The patients' survival rate and the functional consequences are related to the disease staging at the time of diagnosis. The

early finding and the instant management of oral cancer may reduce the mortality rates. However, studies have demonstrated that two out of three cancers are diagnosed in advanced stages (III and IV). This delay in diagnosis is due to factors related to patients, health professionals, and the health system, as the late diagnosis has also been associated with the difficult access to specialized services, especially for people who live away from large centers.<sup>2</sup> Elevated occurrence of oral cancer in India is attributed to a number of etiological factors. Tobacco burning up tradition among the patients either as smokeless tobacco or smoking, alcohol consumption is the common causes for oral cancer. Positive people has a history of oral cancer, Viral infections like HPV, poor oral hygiene are the other causes for oral cancer.<sup>4</sup>

## MATERIALS AND METHODS

Data was collected from participants from different hospitals, healthcare teaching institutions and clinics from various parts of the country were included in the study.

1018 nurses practicing in the different kind of hospital set up was included and self-administered questionnaire was filled by them. This was a cross-sectional study to assess the level of burnout among nurses across India. This study was conducted in adherence to good clinical practice (GCP) guidelines and Declaration of Helsinki (DoH). The study documents were reviewed and approved by the Institutional Ethics Committee (IEC) of Indore, MP.

The study questionnaire was filled by the responders in print (paper) format and an electronic format. The electronic form was designed as 'printed document format' (pdf) format which was sent to the potential responders by e-mail and various online platforms. The pdf forms were filled by the responders after downloading the form and returned after completing the survey.

All electronic and print forms were checked for completeness and any deficiency or discrepancies were resolved by the responder through mail, message, or telephonic communication.

Sample size was not based on any assumptions and calculations. An attempt was made to reach out to a large number of nurses across India; however, there were more responders from the state of Madhya Pradesh. We were able to reach over 2500 nurses of which a total of 1018 responded.

The distribution of the responses for each variable was examined using frequencies and

percentages. Scores for each domain were added to give the individual domain scores, whereas sum of all domain scores were added for calculating the total BCSQ-12 score. For each domain and the total scores, lower cut-off criteria of 75th percentile was used to define high scores. Responders with high scores were considered having significant burnout and are presented as counts. The data was divided into various sub-groups based on age ( $\leq 30$  years and  $>30$  years), gender (male, female, prefer not to mention), duration of experience ( $\leq 5$  years and  $>5$  years), and job profile (hospital/practice, academics and both). Descriptive statistics were presented for the domain scores in the different sub-groups. Mean scores were calculated for the individual subscales of a MBI scores.

After the statistical analysis, results were reviewed and presented to the guide for approval. Post approval of statistical report, Thesis preparation was started.

## RESULTS AND DISCUSSION

### *Distribution of Participants*

**Table 1:** Represents Responders from various states across India. Majority of population is from Maharashtra.

State	Number	%
Andhra Pradesh	17	1.67
Bihar	7	0.69
Chhattisgarh	6	0.59
Delhi	21	2.06
Gujarat	68	6.68
Haryana	35	3.44
HP	23	2.26
Jammu and Kashmir	17	1.67
Jharkhand	10	0.98
Karnataka	43	4.22
Kerala	18	1.77
Madhya Pradesh	73	7.17
Maharashtra	342	33.60
Odisha	19	1.87
Pondicherry	11	1.08
Punjab	14	1.38
Rajasthan	131	12.87
Tamil Nadu	79	7.76
Telangana	12	1.18
Unspecified	3	0.29
Uttar Pradesh	38	3.73
Uttarakhand	4	0.39
West Bengal	27	2.65

**Table 2:** Geographical location of responders (n=1018)

Emotional Exhaustion

**Table 2:** Emotional Exhaustion

Emotional exhaustion	N	Mean	95% C.I.	p	Mean difference	95% C.I. for difference
<b>Gender</b>						
Male	180	9.30	(8.58 to 10.02)	0.552	-0.247	(-1.061 to 0.567)
Female	836	9.55	(9.20 to 9.89)	—	(Male Vs Female)	
Prefer not to mention	2	15.00	(-61.24 to 91.24)	—	—	—
<b>Professional type</b>						
Academics	784	8.75	(8.41 to 9.09)	<0.0001	—	—
Hospital/Practice	114	11.98	(11.27 to 12.69)	—	—	—
Both	120	12.16	(11.12 to 13.20)	—	—	—
<b>Age group</b>						
<=30 yrs.	614	9.03	(8.63 to 9.43)	<0.0001	-1.225	(-1.856 to -0.593)
>30 yrs.	404	10.25	(9.77 to 10.74)	—	—	—
<b>Experience</b>						
<=5 yrs.	367	10.10	(9.57 to 10.63)	0.005	0.918	(0.273 to 1.563)
>5 yrs.	651	9.18	(8.80 to 9.57)	—	—	—

**DOMAINS AND SUBGROUPS**

Table 2 shows the descriptive for a MBI scores for emotional exhaustion subgroup. Emotional Exhaustion domain in the different sub-groups based on gender, profession type, age and experience. There were no gender differences observed between males and females with respect

to the scores for emotional exhaustion (p=0.552). However, significant differences were observed in the scores in different profession types (p<0.0001), age groups (p<0.0001) and duration of experience (p=0.005). Great emotional exhaustion was observed in those in academics / both, in those with higher age group (>30 years) and those with short duration of experience (<=5 years).

**DEPERSONALIZATION**

**Table 3:** Depersonalization domain.

Depersonalization	N	Mean difference	95% C.I. difference	p	Mean	95% C.I. for
Male	180	13.39	(12.74 to 14.03)	0.479	0.263	(-0.466 to 0.992)
Female	836	13.13	(12.82 to 13.43)	—	(Male Vs Female)	
Prefer not to mention	2	13.00	(-12.41 to 38.41)	—	—	—
<b>Professional type</b>						
Academics	784	12.69	(12.37 to 13.01)	<0.0001	—	—
Hospital/Practice	114	16.14	(15.57 to 16.71)	—	—	—
Both	120	13.49	(12.70 to 14.29)	—	—	—
<b>Age group</b>						
<=30 yrs.	614	12.51	(12.15 to 12.87)	<0.0001	-1.673	(-2.231 to -1.114)
>30 yrs.	404	14.18	(13.76 to 14.60)	—	—	—
<b>Experience</b>						
<=5 yrs.	367	13.41	(12.94 to 13.87)	0.215	0.366	(-0.212 to 0.944)
>5 yrs.	651	13.04	(12.69 to 13.39)	—	—	—

Table 3 shows the descriptive for a MBI scores for depersonalization domain in the different sub-groups based on gender, profession type, age and experience.

There were no gender differences observed between

males and females with respect to the scores for emotional exhaustion (p=0.479). However, significant differences were observed in the scores in different profession types (p<0.0001) and age groups (p<0.0001). Also, there were no difference

with respect to the duration of experience ( $p=0.215$ ). Greater depersonalization was observed in those

in academicians/both and in those with higher age group ( $>30$  years).

### Personal Accomplishment

**Table 4:** Personal Accomplishment.

Personal Accomplishment	N	Mean	95% C.I.	p	Mean difference	95% C.I. for difference
<b>Gender</b>						
Male	180	7.14	(6.63 to 7.66)	0.454	-0.226	(-0.820 to 0.367)
Female	836	7.37	(7.12 to 7.62)	–	(Male Vs Female)	
Prefer not to mention	2	5.50	(-26.27 to 37.27)	–	–	–
<b>Professional type</b>						
Academics	784	7.49	(7.23 to 7.76)	0.003	–	–
Hospital/Practice	114	7.31	(6.75 to 7.87)	–	–	–
Both	120	6.26	(5.59 to 6.93)	–	–	–
<b>Age group</b>						
$\leq 30$ yrs.	614	7.55	(7.26 to 7.83)	0.019	0.551	(0.089 to 1.012)
$>30$ yrs.	404	7.00	(6.62 to 7.37)	–	–	–
<b>Experience</b>						
$\leq 5$ yrs.	367	7.32	(6.94 to 7.69)	0.943	-0.017	(-0.489 to 0.454)
$>5$ yrs.	651	7.33	(7.05 to 7.62)	–	–	–

Table 4 shows the descriptive for aMBI scores for Personal Accomplishment domain in the different sub-groups based on gender, profession type, age and experience. There were no gender differences observed between males and females with respect to the scores for emotional exhaustion ( $p=0.454$ ). However, significant differences were observed in the scores in different profession types ( $p=0.003$ ) and age groups ( $p=0.019$ ). Also, there were no difference with respect to the duration of experience ( $p=0.943$ ). Greater dissatisfaction in terms of personal accomplishment was observed in those in hospital practice and in lower age group ( $\leq 30$  years).

### OVER ALL BURNOUT

Table 12 shows the number (proportion) of

responders with burnout in different sub-groups for the three domains (emotional exhaustion, depersonalization, and personal accomplishment) and in all the three domains of aMBI scale. Overall, burnout was observed in 9.1% ( $n=93$ ), 9.2% ( $n=94$ ), 31.5% ( $n=321$ ) responders for emotional exhaustion, depersonalization, and personal accomplishment domains respectively.

Significant differences in the prevalence (proportion of responders) of burn out was seen in those with shorter duration of experience only for depersonalization domain ( $p<0.0001$ ). Also, higher prevalence of burnout was observed in those with academicians for emotional exhaustion ( $p<0.0001$ ), depersonalization ( $p=0.001$ ) and personal accomplishment ( $p=0.006$ ). For all other domains, there were no difference observed in different sub-groups ( $p>0.05$ ).

**Table 5:** Over all burnout (aMBI scale) in different sub-groups.

Domain	Emotional exhaustion				Depersonalization			Personal accomplishment			All domains		
	N	No.	%	p	No.	%	p	No.	%	p	No.	%	p
<b>Gender</b>													
Male	180	10	5.6	0.027	20	11.1	0.575	62	34.4	0.856	1	0.6	0.472
Female	836	82	9.8	–	74	8.9	–	258	30.9	–	15	1.8	–
Prefer not to mention	2	1	50.0	–	–	–	–	1	50.0	–	–	–	–
<b>Professional type</b>													
Hospital/Practice	784	53	6.8	$<0.0001$	61	7.8	0.001	232	29.6	0.006	8	1.0%	0.022
Academics	114	12	10.5	–	21	18.4	–	38	33.3	–	3	2.6%	–
Both	120	28	23.3	–	12	10.0	–	51	42.5	–	5	4.2%	–

Age group (yrs.)													
<=30 yrs.	614	48	7.8	0.072	63	10.3	0.163	191	31.1	0.719	14	2.3	0.025
>30 yrs.	404	45	11.1	—	31	7.7	—	130	32.2	—	2	0.5	—
Experience (yrs.)													
<=5 yrs.	367	38	10.4	0.311	50	13.6	<0.0001	128	34.9	0.085	11	3.0	0.006
>5 yrs.	651	55	8.4	—	44	6.8	—	193	29.6	—	5	0.8	—
All responders													
Total	1018	93	9.1	—	94	9.2	—	321	31.5	—	16	1.6	—

## HIGHSCORES

Table 5 shows the Significant differences in the prevalence (proportion of responders with high scores) was seen in those in academics ( $p < 0.0001$ ), and those above 30 years of age ( $p < 0.0001$ ) for all three domains. However, no differences ( $p > 0.05$ )

were observed in males and females for prevalence of burnout. Similarly, the prevalence of burnout was similar ( $p > 0.05$ ) in those with <5 years of experience and those with >5 years of experience for all three domains.

**Table 6:** High scores for the BCSQ-12 domains in different sub-groups.

	N	No.	%	Over load p	No.	%	Neglect p	No.	%	Lack of development	nt No	Total B %	CSQ score p
Gender													
Male	180	158	87.8	0.111	153	85.0	0.427	135	75.0	0.628	146	81.1	0.210
Female	836	682	81.6	—	681	81.5	—	613	73.3	—	632	75.6	—
Prefer not to mention	2	2	100.0	—	2	100.0	—	2	100.0	—	2	100.0	—
Professional type													
Hospital/ Practice	784	624	79.6	<0.0001	614	78.3	<0.0001	538	68.6	<0.0001	562	71.7	<0.0001
Academics	114	110	96.5	—	114	100.0	—	109	95.6	—	113	99.1	—
Both	120	108	90.0	—	108	90.0	—	103	85.8	—	105	87.5	—
Age (yrs.)													
<=30 yrs.	614	476	77.5	<0.0001	464	75.6	<0.0001	396	64.5	<0.0001	416	67.8	<0.0001
>30 yrs.	404	366	90.6	—	372	92.1	—	354	87.6	—	364	90.1	—
Experience (yrs.)													
<=5 yrs.	367	304	82.8	0.938	308	83.9	0.260	268	73.0	0.724	286	77.9	0.459
>5 yrs.	651	538	82.6	—	528	81.1	—	482	74.0	—	494	75.9	—
All responders													
Total	1018	842	82.7	-	836	82.1	-	750	73.7	-	780	76.6	-

## CONCLUSION

This study found a high prevalence of burnout among nurses. Burnout among nurses can be dealt with support from official bodies and organizations, by maintaining a good work-life balance, and obtaining an understanding from the patients of their problems.

**Conflict of Interest:** Nil

**Source of Funding:** Self

**Ethical Clearance:** Taken from the college of nursing ethical committee.

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