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Association of Tobacco Smoking with Systemic Co-Morbidities among Patients Seeking for Dental Care Services: A Cross-Section Study

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Abstract:

Background: Smoking is a common risk factor for chronic diseases, including cancer, lung diseases and cardiovascular disease. The adverse effects of tobacco smoking on oral health are well documented. This includes common and rare conditions, from benign to life-threatening diseases such as bad breath, discoloration of teeth and dental restorations, taste and smell disorders , periodontal disease , oral mucosal lesions such as smoker's Melanosis and smoker's palate, potentially malignant lesions and oral cancer.

Objectives: To verify associated of the smoking with systemic disease among patients seeking for dental health care.

Methodology: A cross-sectional study performed at the dental and maxillofacial unit in AL-Sader Teaching hospital, Al-Najaf data were collected from 1st March to the 1st June 2019.

Target population: study participants were selected by systemic random sampling from patients attended Al Sader Teaching hospital at maxillofacial unit according to special criteria.

Results: A total of 400 participants were enrolled in this study , their age ranged 18 – 65 years, no significant difference been found regarding the age distribution between smokers and non-smokers sub groups. No significant association was found between smoking and residence, (P>0.05). A significant association (P>0.05) was found between occupation and smoking status, where unemployed were the dominant among smokers, contributed for 52.9%, compared to other occupations, (P= 0.001).

Conclusion: Significant associated with observed between oral disease and Tobacco smoking among patient seeking oral health care.

INTRODUCTION

Smoking is a common risk factor for chronic diseases, including cancer, lung diseases and cardiovascular disease. It estimated that tobacco use kills approximately 5 million people per year. This means 1 in every 10 adult deaths worldwide [1]. Tobacco use, in any form, can be described as a behavioral process which has psychological and physiologic addictive mood among users.

Nicotine, the active substance in tobacco, is very addictive, resulting in continuous Tobacco use is categorized into combustible and Noncombustible tobacco products. Tobacco combustible products include: cigarettes, cigars, small cigars, cigarillos, pipes and water pipes (hookah). Noncombustible tobacco products include electronic cigarettes and tobacco formulations developed for dipping, snuffing, or chewing. According to the 2013–2014 National Adult.

Aims of the Study

To find out the relationship between interpersonal communication skills and job satisfaction among nurses working in psychiatric wards. To find out the relationship between interpersonal communication skills, and demographic characteristics among nurses working in psychiatric wards.

METHODOLOGY

Study designs: A cross-sectional study.

Setting: This study performed at the dental and maxillofacial unit in AL-Sader Teaching hospital, Al-Najaf city.

Data collection time: the data were collected during a period of starting from 1st March to the 1st June 2019.

Target population: study participants were selected by systemic random sampling from patients attended Al Sader Teaching hospital at the maxillofacial unit through list of patients who attended for oral problem management.

Inclusion criteria:

1. Adult participants aged (18-65) years.
2. Patients who did not have dentures.

Study participants were divided into two groups according to their smoking status as Tobacco smokers and Non-smokers.

Data collection:

A. The data were collected by researcher through direct interviews of the patients by using previously prepared questionnaires.

B. A pilot study was done before starting collection of data for 3day; the pilot study was done in Maxillofacial clinic from the 27/2/ 2019 to test the questionnaire for any modification required any other difficulties to detect the time needed for data collection. The pilot sample included 30 patients(who were excluded from the study) and we found no difficulties with this questionnaire.

Part 1: Demographic data from: Demographic information sheet, they include, Age, sex, Address and Occupation.

Part 2: clinical information include: oral hygiene habits, diet, smoking, full mouth periodontal examination.

RESULTS:

A total of 400 participants were enrolled in this study , their age ranged 18 – 65 years, no significant difference had been found regarding the age distribution between smokers and non-smokers sub groups, (P>0.05). Regarding the gender, males were

significantly dominant; among smokers , 74.6% were males and 25.4% were females, (P = 0.001).

No significant association was found between smoking and residence, (P>0.05). A significant association was found between occupation and smoking status , where unemployed were the dominant among smokers, contributed for 52.9%, compared to other occupations, (P = 0.001), (Table 3.1).

DISCUSSION

Great oral wellbeing greatly affects appearance, enabling individuals to do their social capacities and every day exercises without physical, mental, or social inconveniences [2]. The tobacco smoking involve general medical issue in the creating nations. The wellbeing dangers of smoking are entrenched, and aversion of smoking is the single most prominent route for forestalling non communicable sickness on the planet directly [3]. Dental wellbeing is affected by numerous variables, including parental dispositions, persistent inspiration, culture, frame of mind, and geographic region [4,5,6, and 7].

Tobacco contains numerous cytotoxic materials like nicotine, nicotine can follow infiltrate the delicate tissue of oral hole, hold fast to the tooth surface or enter to the circulatory system. Potential sub-atomic and cell instruments in the pathogenesis of smoking related periodontal infections has been accounted for and these incorporate, immuno-concealment, overstated incendiary cell reactions, and impeded stromal cell elements of oral tissues. The relationship between cigarette smoking and periodontal maladies speak to a noteworthy oral wellbeing problem [8].

In the present study distribution of gingivitis cases more affected males than females (Male to female ratio: 2.06 to 1). The finding that females had more positive behavior than males concerning brushing frequency. These results agreement with the results of Almas K, Al- Hawish K, Al- Khamis Oral Hygiene Practices [9], in which male more affected by gingivitis and periodontitis than female and similar result were obtained by Al-Atrooshi BA, Al-Rawi [10] in which male more affected by gingivitis and periodontitis than female

The relationship between smoking and gingivitis dependent on the dose of smoking by numbers of cigarettes per day. The percent of patients smoking the larger numbers of cigarettes smoking 11-20 daily was 52%; 24.7% smoking numbers of cigarettes is 1-10 and 23.2% smoking numbers of cigarettes is 21 - 40. This result is disagreeing with earlier studies that investigated the dose-response function among current smokers [11].

The focal point of this examination is on smoking, however both smoked and non-smoked tobacco are related with oral malady, where smoker is progressively influenced by periodontitis, gum disease and other oral ailments this relied upon the measure of smoking. In the present study, the quantities of patient (280) from (400) are about 67.6% were seen as of now smoking. In the present examination only (384) quiet from complete (400) of members saw that they had an oral medical issue. Jumbling results were found in North India [12]. These discoveries are steady with past clinical research that proposes that smoking is related with both the commonness and seriousness of periodontal disease [13,14]. This conflict with the investigation of Feldman et al., [15] demonstrated that smokers with periodontal infection had less clinical aggravation and gingival bleeding when contrasted and non-smokers. This might be clarified by the way that one of various tobacco smoke results, nicotine, applies nearby vasoconstriction, diminishing blood stream, edema

and acts to repress the regularly early indications of periodontal issues by diminishing gingival irritation, redness, and bleeding.

CONCLUSION

1. positive associated was observed between oral disease and cigarette smoking.
2. Significant associated with observed between oral disease and cigarette smoking among patient seeking oral health care. Table 3.3.
3. Greater percentage of cigarette smoker in this study had poor oral hygiene in compare with non-smoking . Table 3.3.
4. There are an association was found between some socio demographic variable such as sex and occupation which smoking among those with oral problem.

RECOMMENDATIONS

1. Oral health prevention programs designed in the form of educational campaigns should promote the use of toothbrush with fluoridated toothpaste through dental health care unit.
2. health education with a greater emphasis on addressing myths of perceived benefits and health risks targeted for males and older individuals can help to reduce tobacco consumption rates.
3. Future research should test the impact of such educational campaigns and interventions.

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TABLES and FIGURES:

Table (1): Main causes of death from tobacco smoking and benefits of stopping.

Cause of death from smoking	Benefit of stopping smoking
Coronary heart disease and stroke	Preventable if cessation occurs in early adulthood; at least partially reversible thereafter
Cancers of the lung and upper airways	Preventable if cessation occurs in early adulthood; further increase in risk prevented thereafter
Chronic obstructive pulmonary disease	Preventable if cessation occurs in early adulthood; further decline in lung function slowed thereafter
Miscarriage and underdevelopment of fetus	Preventable if cessation occurs early in pregnancy; risk is mitigated by stopping at any time in pregnancy

Table (3.1): Socio-demographic characteristics of the selected patients (n=400)

Variable		Smoking status						P. value
		Smoker		Non-Smoker		Total		
		Count	%	Count	%	Count	%	
Age (year)	18-20	13	4.6	10	8.3	23	5.8	0.151
	21-30	63	22.5	32	26.7	95	23.8	
	31-40	75	26.8	29	24.2	104	26.0	
	41-50	50	17.9	27	22.5	77	19.3	
	51-60	60	21.4	14	11.7	74	18.5	
	> 60	19	6.8	8	6.7	27	6.8	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
Sex	male	209	74.6	60	50.0	269	67.3	0.001
	female	71	25.4	60	50.0	131	32.8	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
Residence	urban	179	63.9	77	64.2	256	64.0	0.964
	rural	101	36.1	43	35.8	144	36.0	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
Occupation	employed	52	18.6	41	34.2	93	23.3	0.001

	unemployed	148	52.9	29	24.2	177	44.3	
	housewife	44	15.7	27	22.5	71	17.8	
	student	32	11.4	23	19.2	55	13.8	
	5.00	3	1.1	0	0.0	3	0.8	
	6.00	1	0.4	0	0.0	1	0.3	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	

Table (3.2): Oral hygiene experienced by the selected patients.

Variable		**Smoking status**						**P. value**
		Smoker		**Non-Smoker**		**Total**		
		Count	**%**	**Count**	**%**	**Count**	**%**	
Frequency of brush	not brush	10	3.6	6	5.0	16	4.0	0.001
	Once	89	31.8	25	20.8	114	28.5	
	Twice	109	38.9	47	39.2	156	39.0	
	Three times	52	18.6	41	34.2	93	23.3	
	some time	20	7.1	1	0.8	21	5.3	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
Duration (Minutes) of brush	not brush	9	3.2	6	5.0	15	3.8	0.001
	1	61	21.8	33	27.5	94	23.5	
	2	127	45.4	25	20.8	152	38.0	
	3	83	29.6	56	46.7	139	34.8	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
Mode of teeth brush	not brush	9	3.2	5	4.2	14	3.5	0.040
	vertical	54	19.3	33	27.5	87	21.8	
	horizontal	88	31.4	22	18.3	110	27.5	
	combined	129	46.1	60	50.0	189	47.3	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
use a mouth wash	yes	29	10.4	6	5.0	35	8.8	0.82
	no	251	89.6	114	95.0	365	91.3	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	
secondary methods for plaque control	dental floss	15	5.4	2	1.7	17	4.3	0.189
	inter dental brushes	7	2.5	1	0.8	8	2.0	
	tooth pick	19	6.8	6	5.0	25	6.3	
	none	239	85.4	111	92.5	350	87.5	
	Total	**280**	**100.0**	**120**	**100.0**	**400**	**100.0**	

Table (3.3): Frequency of smoking among selected patients by their oral problems (n=400)

oral problem		Smoking		Total
		yes	No	
no oral disease	Count	1	15	16
	% problem	6.3	93.8	100.0
dental caries	Count	83	48	131
	%	63.4	36.6	100.0
Gingivitis	Count	140	13	153
	%	91.5	8.5	100.0
ophthus ulcer	Count	30	9	39
	%	76.9	23.1	100.0
Plaque	Count	26	0	26
	%	100.0	0.0	100.0
Other	Count	0	35	35
	%	0.0	100.0	100.0
Total	Count	280	120	400
	%	70.0	30.0	100.0
P value = 0.001				

Table (3.4): Proportion of smoking by the associated systemic diseases of the sample (n=400)

Systemic diseases		Smoking		Total	P value
		yes	no		
no disease	Count	186	95	281	0.112
	%	66.2%	33.8%	100.0%	
Hypertension	Count	39	10	49	
	%	79.6%	20.4%	100.0%	
Diabetes mellitus	Count	27	11	38	
	%	71.1%	28.9%	100.0%	
Cardiovascular disease	Count	16	2	18	
	%	88.9%	11.1%	100.0%	
ASTHMA	Count	4	1	5	
	%	80.0%	20.0%	100.0%	
OTHER	Count	8	1	9	
	%	88.9%	11.1%	100.0%	
Total	Count	280	120	400	
	%	70.0%	30.0%	100.0%	

Table (3.5): Association between patients oral problems and existing systemic diseases

oral problems		Associated Systematic diseases						Total
		No disease	HT	DM	CVD	ASTHMA	OTHER	
no oral disease	Count	13	1	2	0	0	0	16
	%	81.3	6.3	12.5	0.0	0.0	0.0	100.0
dental caries	Count	96	17	11	3	1	3	131
	%	73.3	13.0	8.4	2.3	0.80	2.3	100.0
Gingivitis	Count	105	19	15	10	1	3	153
	%	68.6	12.4	9.8	6.5	0.70	2.0	100.0
ophthus ulcer	Count	24	6	1	4	2	2	39
	%	61.5	15.4	2.6	10.3	5.10	5.1	100.0
Plaque	Count	16	4	5	0	0	1	26
	%	61.5	15.4	19.2	0.0	0.00	3.8	100.0
Other	Count	27	2	4	1	1	0	35
	%	77.1	5.7	11.4	2.9	2.90	0.0	100.0
Total	Count	281	49	38	18	5	9	400
	%	70.3	12.3	9.5	4.5	1.30	2.	100.0
P value = 0.401								

Figure (1): Prevalence of smoking among the study sample of dental care attendants (n = 400)

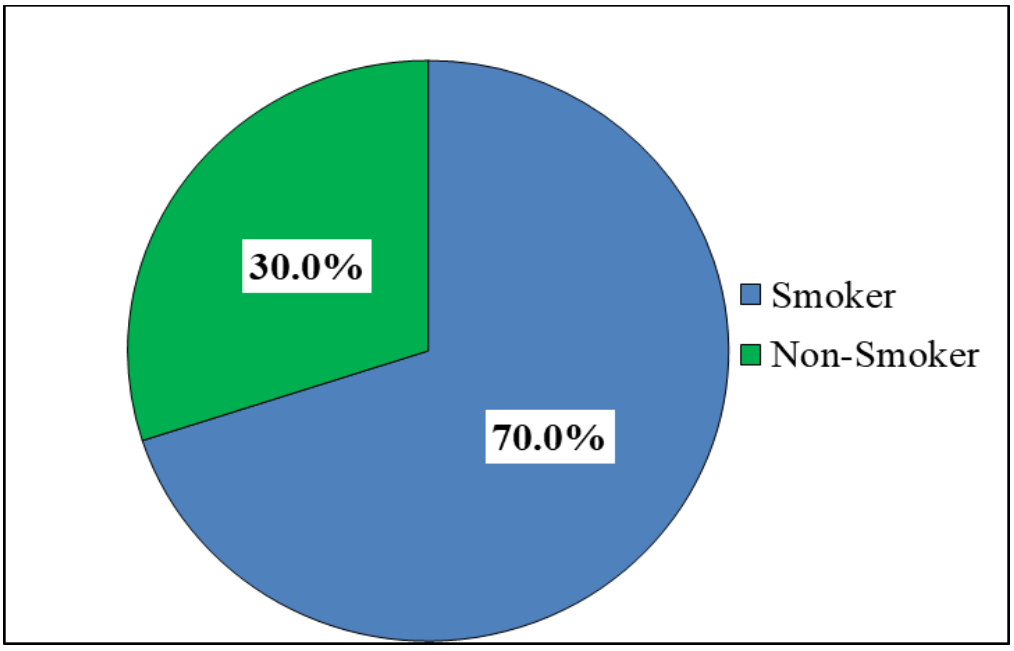

Figure (2): Number of cigarette among study sample of dental care attendants (n=400)

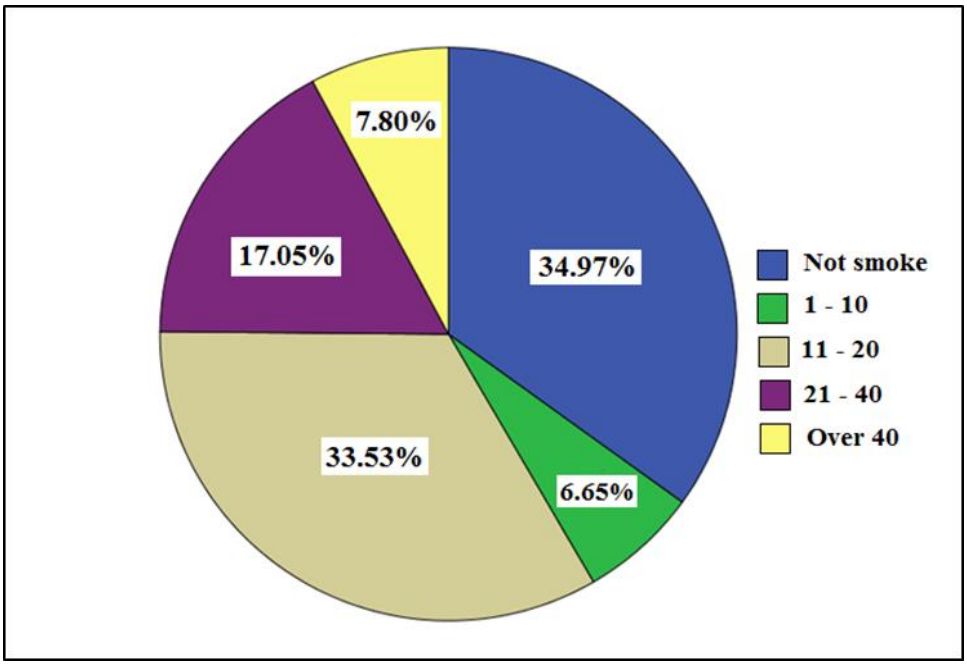

Table of Abbreviation

Abbreviation	Full text
CAD	Coronary artery disease
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
DM	Diabetes Mellitus
et al	et alia (*Latin*), and others (*English*)
HT	Hypertension
SD	Standard deviation (*statistical*)
SPSS	Statistical package for social sciences
UK	United Kingdom
WHO	World Health Organization