

Dental Hygiene Awareness scenario among AE-COPD Patients in a tertiary Care hospital, Bangladesh.

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ABSTRACT

Background: Chronic obstructive pulmonary disease (COPD) is one of the most important chronic diseases. Patients with COPD suffer from periodic acute exacerbations or a worsening of lung function, which are partially due to infection. Poor oral health (e.g., periodontal disease) was also associated with AE-COPD. Good oral hygiene could be a key factor to prevent frequent exacerbation of COPD. **Materials & Methods:** Total 20 patient of confirmed COPD with acute exacerbation possessing at least 6 teeth were interviewed using a prestructured questionnaire. **Result:** A bulk of sample (75%) don't think even dental health is a part of general health, only 60% brush their teeth daily & nobody use dental floss. **Conclusion:** Additional effort should be taken with usual management to improve dental health knowledge & eliminate the misconceptions.

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I. INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is one of the most important chronic diseases worldwide [1], with a prevalence of about 5 % to more than 20 % in subjects aged ≥ 40 years [2, 3]. In expansion to cigarette smoking, word related exposures, indoor contamination, contaminations in early childhood, expanding age and moo financial status have been recognized as critical hazard variables for COPD [4]. Poor oral health (e.g., periodontal disease) was also associated with AE-COPD.[5,6] Patients with COPD suffer from periodic acute exacerbations or a worsening of lung function, which are partially due to infection, A lower respiratory infection begins by contamination of the lower airway epithelium by microorganisms contained in aerosolized droplets or by aspiration of oral secretions containing microorganisms, but all individuals do not have an equal risk for a lower respiratory infection.[7] Significantly, results from three preliminary intervention trials[8,9,10] demonstrated that attention to oral hygiene, either by the use of

mechanical cleansing and/or oral antiseptic rinses, such as betadine or chlorhexidine gluconate, significantly reduced the rate of lower respiratory tract infection in institutionalized patients. These contemplations render a interface between verbal wellbeing and particularly COPD conceivable. Systemic irritation and repetitive exacerbations of incessant irritation, regularly due to bacterial diseases, are of major significance for the movement of COPD. Conversely, the presence of COPD and its associated frequent infections could impair oral health [11]. As yet, most data refer to the association between COPD and periodontal disease [12]. It might be hypothesized that lung work is related with other measurements of dental wellbeing, e.g. caries and endodontic lesions [11]. As oropharyngeal bacterial colonization plays a key role in the pathogenesis of respiratory diseases, it has been hypothesized that improved oral hygiene in the hospital setting may decrease the risk of respiratory infection.[13] Since the publication of the United States Surgeon General’s report, there has been increased interest in determining whether oral health is a risk factor for systemic diseases. One such area of interest is the link between respiratory diseases such as chronic obstructive pulmonary disease (COPD)[14] hydrolytic enzymes of periodontal disease associated pathogens may destroy protective salivary pellicles such as mucin, resulting in fewer nonspecific host defense mechanisms in high-risk subjects. Travis et al.[15] reviewed a common pathophysiologic process common to both pulmonary emphysema and periodontal disease as characterized by tissue destruction as a result of uncontrolled proteolysis of connective tissue proteins by proteinases derived from human neutrophils.

Constant obstructive aspiratory malady (COPD) and periodontitis are unremitting incendiary systemic infections with common hazard components (smoking and maturing). In COPD, poor periodontal health could result in inadequate nutrition, potentially causing loss of muscle volume.[16] Poor periodontal status was associated with a low serum albumin level in COPD patients, recommending connections between periodontal status and dietary status and aggravation in COPD patient. Furthermore, COPD itself was a significant factor for periodontitis.[16] Bangladesh, in general, have a very low level of awareness regarding oral health and hygiene.[17] In the oral health context, awareness can be considered as the skills necessary for people to understand the causes of poor oral health, to learn and adopt fundamental aspects of positive oral self-care behaviors, Oral health literacy could be the new imperative for better oral health as health literacy & now considered a determinant of health[18].

II. MATERIALS AND METHODOLOGY

This study was carried out in the Department of Respiratory Medicine, National Institute of The Diseases of The Chest & Hospital, Mohakhali, Dhaka, Bangladesh. The duration of the study was January 2023. The patients diagnosed as COPD according to the definition of GOLD-2023 with spirometry, FEV1/FVC <0.7 and suffering from the disease for minimum 1 year, labeled as Acute exacerbation due to increased symptoms resulting change of regular medication are selected. Patients had at least 6 teeth were included & those who had other comorbid diseases like Diabetes, prolong use of immunosuppressive drugs were excluded.

Initially, a structured data collection sheet (considering several requisite factors) was developed for interviewing the patients who were pre-tested and tested on 5 respondents for improvement and finalization before the actual study (Appendix-I and Appendix-II). For this study, a well-informed, voluntarily signed written consent was taken in an understandable local language from the study subjects after convincing them that their privacy and confidentiality were safeguarded. Proper treatment was provided if there was any injury occurred or complications developed because of this study. However, no monetary compensation was provided for the loss of working time. Samples were selected with convenient sampling technic.

III. RESULT AND DISCUSSION

The present study was carried out to assume the dental hygiene awareness in AE-COPD patients. The study included 20 samples having AE-COPD. The findings obtained from the research study are presented in different tables on the following pages.

Table –I: Distribution of patients according to demographic characteristics

Characteristics	Frequency	%
Age (Mean, SD)	(58.75, 11.26)	-
Sex		
Male	16	80
Female	4	20
Educational qualification		
Illiterate		
Primary	14	70
Below SSC	1	5
SSC	4	20
HSC	1	5
Graduate		

Smoking history		
Non smoker	3	15
Current smoker	4	20
Ex-smoker	13	65
Duration of COPD (Mean, SD)	(6.55, 4.75)	-

Table 1 shows the demographical characteristics of AE-COPD patients. Mean age is 58.75 years. Most of the patients developed COPD after 40 and elders are the worst sufferer of acute exacerbation. Most of the COPD patients are male because tobacco smoking is more prevalent in male than female & so why in this study 80% patients are male. According to WHO tobacco use trend report Bangladesh is 84th country of which 34.7% people smoke & in men it is even higher (52.2%). Here 70% patients are illiterate because detrimental effects of smoking are ignored due to lack of knowledge.

Table-II: Distribution of patients according to Dental hygiene awareness

Characteristics	Frequency	%
Brush teeth daily		
Yes	12	60
No	8	40
Frequency of brushing daily		
Once a day	7	58.3
Twice a day	4	33.3
More than twice a day	1	8.3
Duration of brushing		
<1 minute	2	16.7
1 minute	2	16.7
2 minute	4	33.3
>2 minute	4	33.3
Using dental floss		
Yes	0	0
No	20	100
Using mouth wash		
Yes	2	10
No	18	90
Visited dentist in last 6 month		
Yes	3	15
No	17	85
Dental health is part of general health		
Yes	5	25
No	15	75
Dental problem is subject to treatment		
Yes	6	33.3
no	12	66.7

Table 4 shows only 60% study subjects brush their teeth daily, many of them don't do it in appropriate frequency (58.3%) & duration. Nobody of them use dental floss & only 10% use mouth wash. Only 15% visited dentist in last 6 month & even 75% think that dental health is not a part of general health & 66.7% of them don't treat dental problems as a matter needs treatment.

IV. CONCLUSION

From this study we can realize that dental hygiene awareness is very poor & also inappropriate in AE-COPD patients. Additional effort should be taken with usual management to improve dental health knowledge & eliminate the misconceptions. More studies are needed to determine the effect of dental health as a causative factor of AE-COPD.

Conflict of interest: We have no conflict of interest.

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