

A Cross Sectional Study of Association between Edentulism and Depression in Varanasi Population.

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ABSTRACT

Background: This study was conducted to estimate the depression label; due to edentulism and measure the treatment outcome. **Methods:** A questionnaire were distributed to 96 edentulous participants undergoing routine prosthetic care in Department of Dentistry, Heritage Institute of Medical Sciences Varanasi and Various private clinics in Varanasi district. **Results:** Among Ninety six people who completed the questionnaire, 56 stated that they had experienced difficulties in accepting the loss of their teeth. In comparison with people who had no difficulties in accepting the situation, these people were feel less confident about themselves, more likely to feel inhibited in carrying out everyday activities. **Conclusion:** The label of depression of majority of participants were minimal only few participants showed marked or severe depression.

Keywords: Edentulism, depression, emotional reactions.

INTRODUCTION

Edentulism though is not a life threatening, but can substantially affect the physical, emotional and psychological quality of life.^[1,2] Teeth play various functional and esthetic roles. A beautiful smile symbolizes youth, health, and happiness. Loss of teeth shows an impact on one's smile leading to a loss of these symbols.^[3] As any other parts of the body, even teeth loss gives one the feeling of being handicapped.^[4] The loss of teeth which causes many adverse anatomic, aesthetic, and biomechanical sequelae can also prove to be a terrible psychological shock to patients.^[5]

A person's oral health status can affect them physically and psychologically and show a major influence on how are their appearance, how they speak, chew, taste, and enjoy food. Communication and esthetics may be more important than biting and chewing in Social functions that's why individual's subjects need for the replacement of missing natural teeth.^[5] It is natural to grieve when one loses one or all the natural teeth and they follow a similar pattern of reactions to loss like any other parts of the body.^[6] One emotional problem often associated with aging is depression.^[7] Psychological response to tooth loss

and denture wearing may be influenced by patient personality or the current state of mental health. The awareness about edentulism and emotional reaction were also a matter of concern in this issue. Hence a need was felt by the department of dentistry to conduct a study to understand the association between depression and edentulism in the general population of Varanasi. The aims of the present study were to investigate (1) The emotional reactions to tooth loss among the edentulous patients visiting the Dentistry Department of Heritage Institute of Medical Sciences, Varanasi (2) screen for current depressive symptoms among such patients and (3) depression test if the patients' emotional reactions to tooth loss were influenced by their mental health status.

MATERIALS & METHODS

The study was carried out from September 2018 to February 2019 among the edentulous subjects receiving routine prosthodontic care under in the Department of Dentistry, Heritage Institute of Medical Sciences and various private dental clinics in the Varanasi. A questionnaire based on previous qualitative and quantitative research was translated into Hindi languages.⁷ Only those patients, who were in the process of getting new dentures made, were included. A total of 280 potential subjects were approached (more subjects were enrolled to account for potential dropouts) at the initial stage of their treatment and invited to take part. Moreover, the participants could be encouraged not to leave any

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questions unanswered. Patients with communication difficulties, cognitive impairment and those unwilling to participate were excluded.

Data was collected and analyzed using χ^2 test with Yates' continuity correction for 2×2 contingency tables in which expected frequencies were greater than five; and using Fisher's exact test (two-tailed) for 2×2 contingency tables in which expected frequencies were less than five. For all other analyses, χ^2 test was used. In the following text, χ^2 test with Yates' continuity correction has been used unless otherwise indicated. All statistical analyses were performed using SPSS v. 20.0 united state 2011. $P < 0.05$ was considered to be statistically significant.

RESULTS

Totally, 280 potential subjects who satisfied the inclusion criteria were approached out of which 74 denied to participate. Of the remaining 206, those who had filled incomplete details or who did not return the questionnaire was excluded from the study, yielding a final sample size of 96. There were a total of 60 males and 36 females among the respondents. A total of 12 participants were aged between 31 and 50 years, 23 between 51 and 70 years and 61 were aged 71 years and over. Totally, 35 people had been edentulous for more than 5 years. The remaining characteristics of the study group and answers to questions directed toward judging their beliefs and attitudes about oral health are depicted in [Table 1]. Fifty six of the respondents which means 58% stated that they experienced difficulties in accepting their tooth loss while 42 (42%) stated that they experienced no difficulties.

Acceptance of teeth loss? [Table 2].

People who had difficulties in accepting tooth loss took longer to come to terms with it compared with people who had no difficulties ($P < 0.05$). About 65% of the group with no difficulties accepted their loss immediately. About 77% of people with difficulties took within 6 months to more than a year to accept tooth loss compared with 35% of people with no difficulties.

Feeling about teeth loss? [Table 3].

The emotion most commonly experienced by individuals of both groups (with difficulties and without difficulties) was that of relief (26 and 24 people, respectively). Other emotions commonly experienced among the people with no difficulties was that of being unconcerned and a sense of resignation (12 and 16 people respectively). Among the people with difficulties there were a wider range of responses with other frequently expressed emotions being sad, losing part of oneself, feeling of getting old, dismayed, and a sense of resignation (17,18, 18 16, 16, 16, and 12, respectively).

Self confidence? [Table 4].

About 37.5% of people with difficulties felt their confidence was affected after losing teeth, compared with 7.5% with no difficulties ($P = 0.0008$).

Consideration of dentures to be part of yourself, a foreign body, or neither of these? [Table 7].

A majority of people in both groups with difficulties and without difficulties (83% and 86%, respectively) felt their dentures to be part of themselves. The difference was not statistically significant ($P = 0.713$).

Perception of Dentures? [Table 7].

A majority of people in both groups with difficulties and without difficulties (84% and 86%, respectively) felt their dentures to be part of themselves. The difference was not statistically significant ($P = 0.725$).

Restrictions in activities? [Table 6].

Seventy respondents (70%) restricted their choice of food, 25% avoided going out in public, 29% avoided eating in public, 74% did not enjoy food as much, 32% avoided laughing in public, 19% avoided forming close relationships, and 19% avoided interactions with others. Members of both groups did not enjoy food, as well as before ($P = 0.095$).

The screening for depression using PHQ-9 revealed that 61% (32% with difficulties, 29% without difficulties) had none to minimal depression, 17% (12.5% with difficulties, 5.2% with no difficulties) had mild depression, 10% had moderately depression (6.2% with difficulties and 4.2% without difficulties), 3.1% had moderately severe depression (2% with difficulties and 1.1% without difficulties) and the remaining 5% (5% with difficulties and 0% without difficulties) had severe symptoms. None had symptoms for moderate depression. The group which had difficulties accepting tooth loss was more likely to exhibit depressive symptoms than the group with no difficulties [Figure 1]. The association was significant ($P = 0.007$). [Table 7]

Table 1: demographic details of the study group

Characteristics	Distribution number (%)	
Gender	Male	60 (62.5)
	Female	36 (36.96)
Age	31-50 years	12 (12.5)
	51-70 years	23 (23.95)
	71 years and above	61 (63.54)
Education	Primary School (up to 5th std)	36 (37.5)
	Middle School (5th to 8th std)	23 (23.95)
	High School	9 (9.37)
	Intermediate/Diploma	8 (8.33)
	UG/PG	14 (14.58)
Occupation	Professional	6 (6.25)
	Unemployed	29 (30.20)
	Unskilled	24 (25.00)
	Skilled	13 (13.54)
	Semi-profession	18 (18.75)
Reason for tooth loss	Profession	12 (12.50)
	Periodontal problems	46 (47.91)
	Caries	28 (29.16)
	Others	22 (22.91)

Table 2: time related to accepting tooth loss

Responses	Number of responses	
	Difficulties	No difficulties
Immediately	13	26
Within 6 months	27	11
Within a year	11	2
Took over a year	5	1
Still have not accepted it	-	-

Table 3: feeling associated with losing the last remaining tooth

Responses	Number of responses	
	Difficulties	No difficulties
Relieved	26	24
Fearful	4	0
Angry	2	0
Gloomy	2	1
Sad	17	3
Dismayed	16	2
Resigned	12	16
Old	18	5
Shocked	8	0
Depressed	5	1
Not happening to me	3	0
Lost part of myself	18	4
Unconcerned	-	19

Table 4: tooth loss and self confidence

Responses	Number of responses	
	Difficulties	No difficulties
Yes	21	3
No	35	37

Table 5: perception of denture related to self

Responses	Number of responses	
	Difficulties	No difficulties
Part of myself	32	24
A foreign body	3	3
Neither of these	3	1

Table 6: activities restricted due to tooth loss

Responses	Number of responses			
	Difficulties		No difficulties	
Choice of food restricted	48	8	22	18
Avoid going out in public	22	34	2	38
Avoid eating in public	26	30	2	38
Not enjoyed food as much	45	11	26	14
Avoid laughing in public	26	30	5	31
Avoid forming close relationship	26	30	0	40
Avoid interactions with others	16	40	2	38

Table 7: Screening for depression

Depression Label	Total	Difficulties	No difficulties
Minimal (1-4)	61 (63.5)	32 (33.33)	29 (30.2)
Mild (5-9)	17 (17.7)	12 (12.5)	5 (5.2)
Moderate (10-14)	10 (10.4)	6 (6.2)	4 (4.2)
Moderately Severe (15-19)	3 (3.1)	2 (2.0)	1 (1.1)
Severe (20-27)	5 (5.3)	5 (5.3)	0

DISCUSSION

The present study has been conducted according to the previous work done on the subject.^[7,8] Aging elderly people of rural population of Varanasi district formed the representative population for this study. Dental awareness and availability are generally low in this part. Elderly people turn up to the dentist only in pain or swelling. Hence a hypothesis was worked out stating that the emotional effects of tooth loss would be less compared to their counterpart privileged subjects.

As the sample size was relatively small, the data should be interpreted with some caution and an emphasis placed on data trends. Only new denture wearer were taken in the study to reduce the rate of dropout. The new denture wearer could be argued that selection bias would result due to the likelihood of difficult. However, the fact that the majority of patients were satisfied with their dentures removed this possibility.

It is clear from the results that loss of teeth can have a dramatic effect on the routine life of the patient. Majority of the (fifty eight percent) participants experienced difficulties in accepting the loss of teeth while forty two percent stated that they had no difficulties. There was no significant difference in age, sex, education, time since total tooth loss and denture wearing between the two groups. Majority of the subjects (75%) were not feel difficulty or loose self-confidence by loss of teeth. The result shows that few people were relieved by the loss of teeth as compared with other studies.

Restriction in social activities, negatively affected, as loss of teeth may impair the food related social experiences and make one feel left out. This is also borne out by the fact that unlike the previous quantitative study in the UK,^[19] in the present study, even a substantial percentage of people without difficulties accepting tooth loss (about 64%) felt that their choice of food was restricted and did not enjoy their food, as well as before. A similar restriction of eating activities was noted in the study of aging North Indian Community.^[25] Those with difficulties accepting tooth loss had an even greater effect on self-esteem and social life and consequently had more reservation about discussing tooth loss.^[7-9]

PHQ -9 scale was used for the screening of depression label. Very few (3.1%) respondents reported moderate depression severity while majority (63.5%) were minimal or with no depression . There is evidence that both acceptance and extreme responding trends are associated with older age, low education, and low income.^[32]

Depression and anxiety are associated with tooth loss and more severe depression is detected in a patient, Furthermore, problems with chewing or difficulties with speaking cause stress, depression and sometimes even lead to suicidal tendency.^[10]

CONCLUSION

About 58% of edentulous people studied had difficulties accepting tooth loss, which was unrelated to denture satisfaction. Significant disability and restriction in social activities due to functional limitation. Those who had difficulties accepting tooth loss were also more likely to experience depressive symptoms.

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