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RESEARCH ARTICLE

AWARENESS IN PATIENTS HAVING PARTIAL EDENTULISM AND THEIR MOTIVATION FOR SEEKING PROSTHODONTIC REHABILITATION: A CROSS SECTIONAL SURVEY STUDY BETWEEN INDIAN AND CANADIAN POPULATION

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ABSTRACT

Background: With increase in lifespan in both countries like India and Canada, span and prevalence of edentulism has increased. But there is a scarcity in literature regarding baseline information regarding the perception, knowledge and attitude of the general population towards tooth loss and its restoration. **Material and methods:** This study has a cross sectional design, which was performed in Navi Mumbai, India and Brampton, Canada. Pre-validated questionnaire consisting of questions assessing the awareness of the patients about their current missing tooth/teeth and its reasons, complications/consequences of non-replaced missing teeth, knowledge of the patients regarding prosthodontics' treatment options, benefits and drawbacks of each treatment option, to 200 subjects /group. **Results:** Longer duration of missing teeth was observed in the Indian population as compared to the Canadian population. Unawareness of replacement of teeth and its options was the reason given by 25% Indian population and 13% Canadian population. Around 34% Indian population and 18% Canadian population were unaware of any prosthetic options for replacement of missing tooth/teeth. **Conclusion:** Prevalence of edentulism, lack of knowledge and unawareness was more prevalent in the Indian population. High cost of dental treatment was the most important factor in the Canadian population for not accessing their prosthetic needs.

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INTRODUCTION

Prosthodontic treatment depends on a variety of factors. The traditional approach resulted in a fairly uniform treatment option based on the fact that the missing teeth should always be replaced (Zarb, 1978). With the advancements and knowledge in dentistry and improvement in oral health with declining edentulousness in many countries, a higher number of people tend to keep more teeth until later in life (Carlsson, 2006). However, of late, patient requirements such as aesthetics and functional comfort are considered more important when attempting to replace missing teeth (Köyser, 1981; Witter, 1989; Kalk, 1993). Although several prosthodontic options for the replacement of missing teeth are available, some researchers have highlighted that the acceptability of these options depend on the patient's education, economy, cultural background as well as the age.⁶ Various prosthodontic options such as fixed or removable partial dentures, implant supported prostheses have been commonly used for tooth restoration. Recently, implants are considered the best option as they provide a long-term benefit with fewer complications (Gupta, 2018; Rahman, 2016). Although the use of dental implants has increased world-wide, the choice of prosthetic option depends upon multiple factors. In spite of the fact that socio economic factors play a very prominent role, demographic features like age, gender, location and education status also affects their choice.

A few studies have reported that factors like education, knowledge, attitude and financial status play a vital role in making a decision towards restoring lost teeth. In a research conducted in the Kingdom of Saudi Arabia, Atieh *et al.*, reported the prevalence of tooth loss to be around 40% with the first molar being the first to be lost (57.1%).⁹ Hence with such a high prevalence, it is necessary to have a baseline information regarding the perception, knowledge and attitude of the general population towards tooth loss and its restoration. In Canada, the 65-year and older group will grow rapidly in the future both in number and as a proportion of the population, and should become roughly 23% by 2041. The impact of the decrease in the edentulous condition is substantial when one considers the net increase in the population of senior citizens that is predicted in both Canada and India as well.¹⁰ Hence, this study was conducted to assess and compare attitude and awareness in two different countries i.e. Indian and Canadian population having missing teeth and their motivation for seeking prosthodontic rehabilitation.

MATERIAL AND METHODS

This study has a cross sectional design which was performed in Navi Mumbai, India and Brampton, Ontario, Canada during the period from August 2021 to April 2022. For the sake of calculating the appropriate sample size, software named G* power 3.0 software was used. Reviewing the literature of similar works, sample sizes ranged

between 170 and 280 samples per population group. In the current study, we kept a 95% level of confidence, precision error of 5%, and we anticipated the awareness among the targeted population to be 85%. The sample size for our study was a total of 400 subjects i.e., 200 Indian population and 200 Canadian population. Patients attending the outpatient's department at private dental college in Navi Mumbai, India and private clinics in Brampton, Ontario for any dental consultation with a prosthodontically unrestored partial edentulous areas in oral cavity were the target population. They were randomly selected. Exclusion criteria included non-cooperative patients along with those with history of fixed or removable prostheses, and reduced or impaired cognitive intelligence. Ethical approval was obtained from a private college's Ethical Research board from Navi Mumbai and also from Community Research Ethics Office (CREO), Canada. Informed consent was taken from the participants. Demographic details such as age, gender and educational status were recorded. The educational status of patients was assessed as illiteracy, primary, secondary or higher education. An examination of the oral cavity was done for every patient and number and location of missing teeth were recorded.

A pre-validated structured questionnaire consisting of close-ended questions, including multiple choice questions and yes/no questions was used as a tool in the current study. The first part of the questionnaire consisted of questions regarding the demographics' data including gender, age, education level. The second part of the questionnaire consisted of questions assessing the awareness of the patients about current missing tooth/teeth and its reasons, complications/consequences of non-replaced missing teeth. The third part of the questionnaire consisted of questions assessing the knowledge of the patients regarding prosthodontics' treatment options, benefits and drawbacks of each treatment option. The questionnaire was used as a template for the investigators to gather the needed information from patients during the examination and interview (i.e., the questionnaire was not given to the patient to answer, it was used as a tool for the examiner to gather the information from patients). The intention of this interview was to assess the awareness and knowledge of the patient towards the effects of missing teeth and availability of different treatment options for its restoration. All the responses were duly recorded. The obtained data was then coded, entered and statistically analysed using SPSS version 21.0. Descriptive statistics, like mean and standard deviation, were calculated for age. Frequencies and percentages were calculated for all other variables. A Chi-square test was used to identify significance with P value ≤ 0.05 as significant.

RESULTS

The study was done to assess and compare attitude and awareness in two different countries i.e., Indian subjects ($n=200$) and Canadian population ($n=200$) having missing teeth and their motivation for seeking prosthodontic rehabilitation. Gender distribution was almost equal in both populations and hence, no statistical significant difference was observed ($p>0.05$) between them in respect to gender. Age distribution was from minimum 18 years extending to above 50 years subjects in both populations and there was found no statistical significant difference ($p>0.05$) between Indian and Canadian population in respect to age distribution. Educational qualification was categorized in 4 categories: No formal education, up to 12th standard, graduate and postgraduate. Educational qualifications were almost equal in both populations and hence no statistically significant difference ($p>0.05$) was observed between them. In respect to questions asked regarding duration of missing tooth/teeth, there was observed statistically significant difference ($p<0.05$) between both populations. Longer duration of missing teeth was observed in the Indian population as compared to the Canadian population. It is evident by the fact that 25.5% Indian subjects reported > 5 years of missing tooth/teeth while only 13% Canadian counterparts reported > 5 years of missing tooth /teeth. On enquiring about reasons for non-replacement of missing tooth, 41% Indian population did not feel the need for replacing the missing teeth, while only 5.5% Canadian

population gave the same reason. Therefore, there was a statistically significant difference ($p<0.05$) noted between the two countries. Unawareness of replacement of teeth and its treatment options was the reason given by 25% Indian population and 13% Canadian population, thereby resulting in statistical significant difference ($p<0.05$). Cost as a reason was found to be a highly statistically significant difference ($p<0.001$) between both populations, as cost was the biggest issue for the Canadian population (37%) as compared to Indian population (16.5%) ($p<0.001$). Another reason being lack of time, was equally noted by 21.5% Indian and Canadian population, respectively (Table 1). While understanding the awareness of prosthetic options for replacement of missing tooth/teeth, Removable Partial Denture (RPD) was known to 39.5% of the Indian population whereas only 23.5% of the Canadian population stated the same, and this was found to be highly statistically different ($p<0.001$) in both groups. Fixed prosthetic option was known to 45.5% of Indian population and only 34 % of Canadian population which was found to be highly statistically different ($p<0.001$) in both groups. Almost equal awareness regarding implant /screw variety was present in both populations. Around 34% of the Indian population and 18% Canadian population were unaware of any prosthetic options for replacement of missing tooth/teeth which resulted in a highly statistically significant difference ($p<0.001$) between both groups [Table 2]. Opinion relating to appearance and chewing ability compromised due to missing teeth was similar in both groups. The Indian population seems to be statistically significant ($p<0.001$) on being less aware (only 20.5%) that speech/phonetics are getting affected because of missing teeth as compared to the Canadian population (44.5%). Additionally, the Indian population seems to be statistically significant ($p<0.001$) on being less aware (only 29 %) of benefits and drawbacks of prosthodontics options as compared to Canadian population (46%) [Table 3]

DISCUSSION

Dental health has an impact on the overall health. With loss of teeth, it is not only the dental and general health that is compromised but it also affects the psychological status of the patients. It is therefore necessary to replace missing tooth / teeth as early as possible to retard the deteriorating oral and general health status (Al-Quran, 2011). Patient's knowledge and awareness about dental prosthesis is one of the key factors in selection of any particular dental prosthesis. There are many ways to determine a patient's knowledge and awareness. In this study a self designed questionnaire was used for this purpose. Rustemeyer et al also used a questionnaire to determine patient's knowledge and awareness about dental prosthesis (Rustemeyer, 2007). Many other factors like age, gender, education, socioeconomic status, location and number of missing teeth are also important factors regarding awareness about different dental prosthesis. Abdurahiman et al¹³ noticed that young age patients are more aware as compared to old age patients. Similarly, females have more knowledge as compared to males. Schützhold et al found that educational status and socioeconomic background are also critical factors to increase awareness about dental prosthesis. They reported that patients having higher education showed better dental prosthesis awareness, which is similar to this study (Patil, 2012). The awareness regarding availability of different treatment options was found to be average which was slightly lower than that reported by Hussain *et al.* and Jayasinghe *et al.* They had reported a that 92% and 95% of the patients respectively were well aware of various treatment modalities (Hussain, 2015; Jayasinghe, 2017). This could be probable because in our study 15-20 % of the patients were illiterate which was much higher than their studies. With respect to the age group, in a study conducted by Abdulrahiman *et al.*, it was reported that the awareness regarding tooth restoration and complication was higher among the younger population.¹⁷ This may be because the younger generation are well informed regarding the advances in dental sciences and also because of esthetic reasons. As a person grows older, they accept tooth loss as a normal aging process hence explaining the reason why patients above 60 years were least well informed and did not seek missing tooth replacement.

Table 1: Reasons for non-replacement of missing tooth/teeth comparison among Indian population (Group A) and Canada population (Group B) respectively

	Indian Population (Group A) N=200 n (%)	Canada Population (Group B) N= 200 n (%)	Chi square test value	p value
Lack of Time	43 (21.5%)	43 (21.5 %)	Chi = 0.0	p = 1.000
Past Unpleasant experience	41 (20.5%)	46 (23%)	Chi = 0.935	p = 0.906
Cost	33 (16.5%)	74 (37%)	Chi = 28.4	p <0.001**
Did not know	50 (25%)	26 (13%)	Chi = 19.4	p = 0.034*
Did not feel the need	82 (41%)	11 (5.5%)	Chi = 68.7	p <0.001**

p>0.05 – not significant *p<0.05 – significant difference **p<0.001 – highly significant difference

Table 2. Awareness of prosthetic options for replacement of missing tooth/teeth

	Indian Population (Group A) N=200 n (%)	Canada Population (Group B) N= 200 n (%)	Chi square test value	p value
Removable	79 (39.5%)	47 (23.5%)	Chi = 18.7	p<0.001**
Fixed	91 (45.5%)	68 (34 %)	Chi = 24.5	p<0.001**
Implant/Screw	51 (25.5%)	49 (24.5%)	Chi = 1.24	p = 0.731
Not aware	68 (34%)	36 (18%)	Chi = 16.87	p <0.001**

p>0.05 – not significant *p<0.05 – significant difference **p<0.001 – highly significant difference

Table 3. Miscellaneous

	Indian Population (Group A) N=200 n (%)	Canada Population (Group B) N=200 n (%)	Chi square test value	p value
Appearance/aesthetics compromised due to the missing tooth/teeth	70 (35%)	76 (38%)	Chi =2.67	p = 0.519
Chewing ability compromised due to the missing tooth/teeth	122 (61%)	102 (51%)	Chi = 3.52	p =0.638
Speech/phonetics been affected due to the missing tooth/teeth	41 (20.5%)	89 (44.5%)	Chi = 23.9	p<0.001**
Aware of the benefits and drawbacks of any prosthodontic options	58 (29%)	92 (46 %)	Chi = 28.65	p<0.001**
Would it help your decision whether to seek replacement of missing tooth/teeth or not, if all parameters are concerned	163 (81.5%)	167 (83.5 %)	Chi = 2.34	p = 0.631

p>0.05 – not significant *p<0.05 – significant difference **p<0.001 – highly significant difference

A study by Joshi et al evaluated whether the retention of natural teeth in older patients translates into an increased or decreased need for dental care. The analysis of a true representative sample of patients older than 70 years in Region I of the U.S. Public Health Service showed that the greater the number of teeth in older adults, the greater the amount and severity of periodontal disease. The number of filled teeth also increased dramatically. Thus, "successful aging," accompanied by increased tooth retention, appears to result in greater need and demand for dental care.¹⁸ In the present study awareness regarding implant supported prosthesis in India and Canada was around 24-25% which is in contrast to the study conducted in India by Sahah et al where awareness regarding implant supported prosthesis was 41.7% which was very high. Similarly the study conducted by Berge in Norway reported more awareness about dental implants, which was 70.1%.¹⁹ Esthetics are more important than function for a great majority of individuals. However, certain sociodemographic factors, such as age and gender, can change the subjective need for replacement of missing teeth. Agerberg and Carlsson found that only 7% of individuals with teeth considered their chewing ability poor and they claimed that they could not chew all kinds of food. Some studies have proposed alternatives to the replacement of missing teeth, such as the shortened dental arch concept. According to Owal and Taylor, it is a common procedure in Sweden to use fixed partial bridges to replace only the anterior missing teeth, leaving the posterior spaces untreated (Mukatash, 2010). It has been observed that there are multiple factors responsible for knowledge, awareness in patients having missing teeth like in developing countries like India, factors like oral health literacy, importance to oral health as compared to general health, and ignorance of the effect of poor oral health on systemic health plays an important role. While in developed countries like Canada, factors like high cost of dental treatment and complex healthcare plays an important role on prosthetic needs and treatment.

CONCLUSION

In general, the results obtained in this study revealed that awareness of patients about dental prosthesis is low in both countries. There is an immense need to improve cognizance of the patients. Oral health care providers, friends, family members and media all have to play a major role in this regard (Hussain, 2015). Being aware helps patients to make informed decisions and to have early replacement of missing teeth in order to avoid the deleterious consequences of the same. The timely provision of adequate dental prosthesis will help the patients to achieve better quality of life.¹⁶ The dentist should provide all the options to the patients explaining the cost, advantages and disadvantages of various treatment options for tooth restoration and explaining the repercussions of not replacing missing teeth.

REFERENCES

- Zarb GA, Bergman B, Clayton JA, Mocky HF. 1978. Prosthodontic treatment for partially edentulous patients. Maryland Heights: Mosby. p. 56–62.
- Carlsson GE, Omar R. 2006. Trends in prosthodontics. *Med Princ Pract.*, 15(3):167–79.
- Köyser AF. Shortened dental arches and oral function. *J Oral Rehabil.* 1981;8:457–62.
- Witter DJ, Van Elteren P, Köyser AF, Van Rossun GM. The effect of removable partial dentures on the oral function in shortened dental arches. *J Oral Rehabil.* 1989;16:27–33.
- Kalk W, Köyser AF, Witter DJ. Needs for tooth replacement. *Int Dent J.* 1993;43:41–9.
- Davenport JC, Basker RM, Heath JR, Ralph JP, Glantz PO. *British Dent J.* 2000;89:364–68.

- Gupta S, Mantri SS, Bhasin A. Knowledge and attitude towards prosthodontic rehabilitation and utilization of dental services by central India population of Jabalpur city, India. *Ann Med Health Sci Res* 2018;8:12-5.
- Rahman MS. Awareness and knowledge of various options for treatment of missing teeth in patients at a speciality dental hospital in Hyderabad, India. *Asian Pac J Health Sci* 2016;3:89-93.
- Atieh MA. Tooth loss among Saudi adolescents: Social and behavioural risk factors. *Int Dent J* 2008;58:103-8.
- Gordon W. Thompson, Phil S.J. Kreisel, The impact of the demographics of aging and the edentulous condition on dental care services. *The Journal of Prosthetic Dentistry* 1998; 79(1):56-59
- Al-Quran FA, Al-Ghalayini RF, Al-Zu'bi BN. Single-tooth replacement: factors affecting different prosthetic treatment modalities. *BMC Oral Health* 2011; 34.
- Rustemeyer J, Bremerich A. 2007. Patients' knowledge and expectations regarding dental implants: assessment by questionnaire. *Int J Oral Maxillofac Surg.*, 36: 814-17.
- Abdurahiman VT, Abdul Khader M. Sanju John Jolly. 2013. Frequency of partial edentulism and awareness to restore the same: a cross sectional study in the age group of 18-25 years among Kerala student population. *J Indian Prosthodont Soc.*, 13: 46-65.
- Patil VV, Shigli K, Hebbal M, Agrawal N. 2012. Tooth loss, prosthetic status and treatment needs among industrial workers in Belgaum, Karnataka, India. *J Oral Sci.*, 54: 285-92.
- Hussain M, Rehman A, Memon MS, Tanveer W, Khan M. Awareness of different treatment options for missing teeth in patient visited at Hamdard University Dental Hospital. *Pak Oral Dent J.*, 35:320-2.
- Jayasinghe RM, Perera J, Jayasinghe V, Thilakumara IP, Rasnayaka S, Shiraz MHM, et al. 2017. Awareness, attitudes, need and demand on replacement of missing teeth among a group of partially dentate patients attending a University Dental Hospital. *BMC Res Notes*,10:334.
- Abdurahiman V, Khader MA, Jolly SJ. Frequency of partial edentulism and awareness to restore the same: A cross-sectional study in the age group of 18–25 years among Kerala student population. *J Indian Prosthodont So* 2013;13:461-5
- Douglass CW, Watson AJ. Future needs for fixed and removable partial dentures in the United States. *J Prosthet Dent.* 2002;87(1):9-14
- Berge TI. Public awareness, information sources and evaluation of oral implant treatment in Norway. *Clin Oral Implants Res* 2000; 11: 401-08.
- Mukatash Gadeer Nimri, Al-Rousan Medyan, Al-Sakarna Basma. Needs and demands of prosthetic treatment among two groups of individuals. *IJDR* 2010;21(4): 564-567
