



## Factors Influencing Decision Making of Geriatric Population in the Selection of Dental Office Type- A Cross-Sectional Study

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### ABSTRACT

*Several factors influence the patient's decision making process of choosing their oral health care setting. To determine the factors affecting the choice of dental office type among senior citizens of Chennai city. A cross-sectional survey was conducted in the dental OPD of a tertiary hospital through face to face interview among 250 patients aged ≥60 years selected through convenient sampling. The study instrument consisted of open items to understand the elder's dental perspectives, expectations and experiences. It comprised questions regarding socio-demographic profile, duration of previous dental visit along the purpose, the type of dental set up they preferred and the reasons for opting so. Data was collected and analysed statistically using SPSS. All the respondents preferred tertiary hospital than private and governmental units. Reasons for opting so was determined to be the affordability for treatment fee, satisfaction level primarily as a consequence of the skills or competency of the care provider, fulfilment in the expectation of clean ambience, availability of holistic care services and provision of service by considerate staffs at proximity. The financial status of geriatric patient's governs their selection of dental care setting.*

**Keywords:** Patient preference, Dental care, Quality improvement, Patient satisfaction, Dental setting, Oral health care provider.

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### INTRODUCTION

Health is a fundamental right of every citizen. Oral diseases are regarded as an important one of the public health problems despite the fact that it is non-communicable, not life threatening or severely debilitating because it significantly impacts one's quality of life. However, Indian societies in its attitude towards oral health has least prioritized as compared to general health all through the ages[1].

Provision of oral health care is a necessary component of population health as stated by Lantz et al. Understanding the influencing factors that governs the access to dental care is an essential component for effective provision of oral health services to the community[2].

The oral disease burden is still on the rise in developing countries where two-thirds of the world's elderly live when compared to developed nations as fee for service mode is common than in the latter.

The objective of oral health care system in India is not restricted not only to provision of curative but also preventive treatments as well.

Oral health care in India is delivered by establishments of the Government through organizations, exclusively or as wing in medical colleges, as unit at district hospital or community and primary health centres. It is also most commonly provided by the private sector at dispensary or hospital while the

indigenous system such as AYUSH also offers ancillary care. A majority of 3/4th healthcare delivery system is taken over by the private sector. A house to house survey conducted among 300 aged people found that about its 90% participants utilized dental care from this segment. Indians still suffer from a multitude of preventable and treatable oral health problems which could be easily avoided by simple as well as cost-effective [3,4].

India is a densely peopled country with 1,42,037,245 individuals in 2023 contributing to 17.85% of the world population ranking second and is well known for its rich as well as varied cultural heritage[5].

.Oral health care is a neglected sector as the situation in Indian setting is that an individual reaches a dentist as a last option and not as a first reaction at times of dental problems

Extensive acceptance of the morbidity has led to widespread prevalence of oral diseases. The prevalence of dental caries, periodontitis and edentulousness is increased while xerostomia, ill fitting dentures and soft tissues lesions are common in senior citizens. Limited numbers of papers based on standardized methods of recording data on the prevalence of geriatric oral diseases are available and hence despite the fact that it is difficult to draw trend analysis, however existing literatures suggest that this segment of the population has poor oral health with high unmet needs[6-10].

Oral health service planning to meet the unmet needs of this large segment remains an all-time challenge. Appropriate data availability regarding the duration, purpose of dental visit, factors influencing the decision making in the selection of dental setting type and their expectations from such facilities including the barriers all of which prevent them from expressing felt needs and prevents from utilizing oral health services is the need of the hour as an understanding of these determinants are pivotal for effective oral health care delivery.

There are certain demographic features such as age, socioeconomic class, racial origin affecting cultural oral health beliefs that influences the attitude towards oral care which vary across geographical locations all of which play a crucial role in planning a region specific oral health care delivery system for acceptability[10].

Improvisation in the quality of health care delivery as an outcome of successful strategic evaluation with the help of information collected through patient surveys is proven in earlier studies and moreover systems based solely on policy makers opinion without consideration of population's want, differences and attitudes of individuals belonging to the community are not victorious in reality[11]. Hence the exploration of patient's preferences is the need of the hour for implementation of appropriate quality management with focus.

Therefore, this study was carried out to determine the factors affecting the geriatric population of Chennai city with dental treatment needs in choosing their dental setting.

## **MATERIAL AND METHODS**

A cross-sectional study approved by the Institutional Ethics Committee of Sri Ramachandra Institute of Higher Education and Research, Porur, Chennai (EC-NI/22/DEC/85/135) was conducted at reputed tertiary dental hospital for a period of about four month from February to May 2023.

The purpose of the study was explained to dental patients aged  $\geq 60$  years who were assured of their privacy and confidentiality following which written consent was obtained. The contact details of the principle investigator were shared to them for any further information. Selection criteria included well-oriented elders who were residents of the city willing to participate voluntarily and those who knew atleast the regional language (Tamil) or English or Telugu.

For the present study, the sample size (N=250) was calculated using G-Power Software Version 3.1 with values considered from a reference research done by Ramesh Kumar S G et al in 2022 [12]. For the present study, the effect size was 0.30, the alpha error probability was 0.05, power was 0.80, degrees of freedom was 24. About 250 elderly individuals selected on convenient sampling technique were face to face interviewed to fill the self-designed questionnaire which comprised of appropriate questions after a related thorough literature search.

The content and face validity of the questionnaire were evaluated by five dental consultants who were faculty members of three dental institutions in Chennai and corrections were made as per their opinion and the same was pilot tested for its clarity among 30 elders who were excluded from the main study.

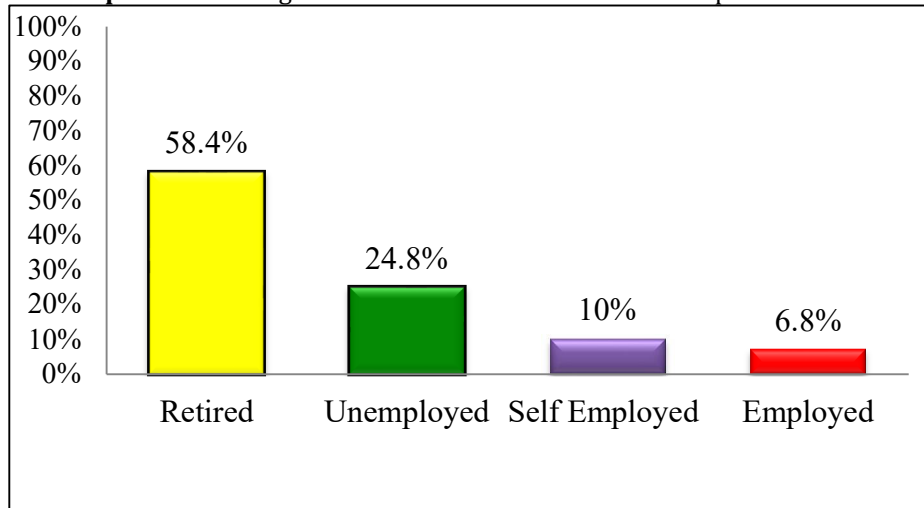
The first part of the study tool included socio-demographic variables such as age, gender, educational level, income etc. The second part included the queries regarding duration of their last dental visit along the purpose and factors determining their decision for choosing a dental setting. The proforma was framed in such a way that it comprised open ended questions so as to permit the research participant's expression without any restrictions.

Content analysis of their responses was performed which yielded inference that helped to understand their perspectives all of which were crucial for achieving the objectives of the study. In order to learn the geriatric dental patient's preference of dental unit set up type along with the reasons as to why they would opt so, the collected data were coded in Microsoft Excel and transferred to SPSS version 26 for statistical analysis. Frequencies are used for the description of the socio-demographic characteristics of the respondents and factors leading the elderly in the choice of dental care provider.

**Results**

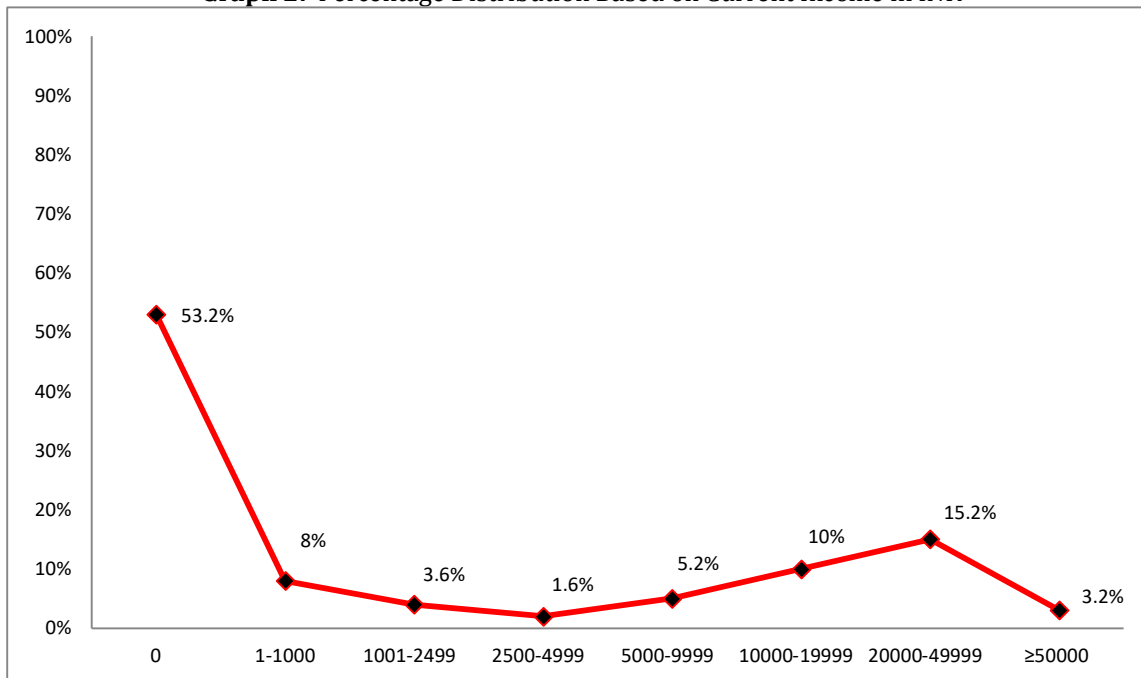
Majority of the study subjects 173(69.2%) were aged between 60-69 years among the entire geriatric population and a higher proportion of respondents 238 (95.2%) are married. Among the 250 patients who visited the tertiary dental care unit, 146 (58.4%) were males. About 241(96.4%) out of a total 250(100%) have had a dental visit in their past.

**Graph 1:** Percentage Distribution Based on Current Occupational Status



**Graph 1** shows that more than 50% of the total 250 surveyed subjects, i.e. 208 (83%) elderly individuals are economically dependent on others as 146(58.4%) of them are retired while 62(25%) are unemployed throughout their career. This graph also shows that only 42 (17%) of the study participants receive source of income for financial support of which majority 25(10%) are self-employed having own firms while 7(6.8%) are presently employed in private sector or other establishments.

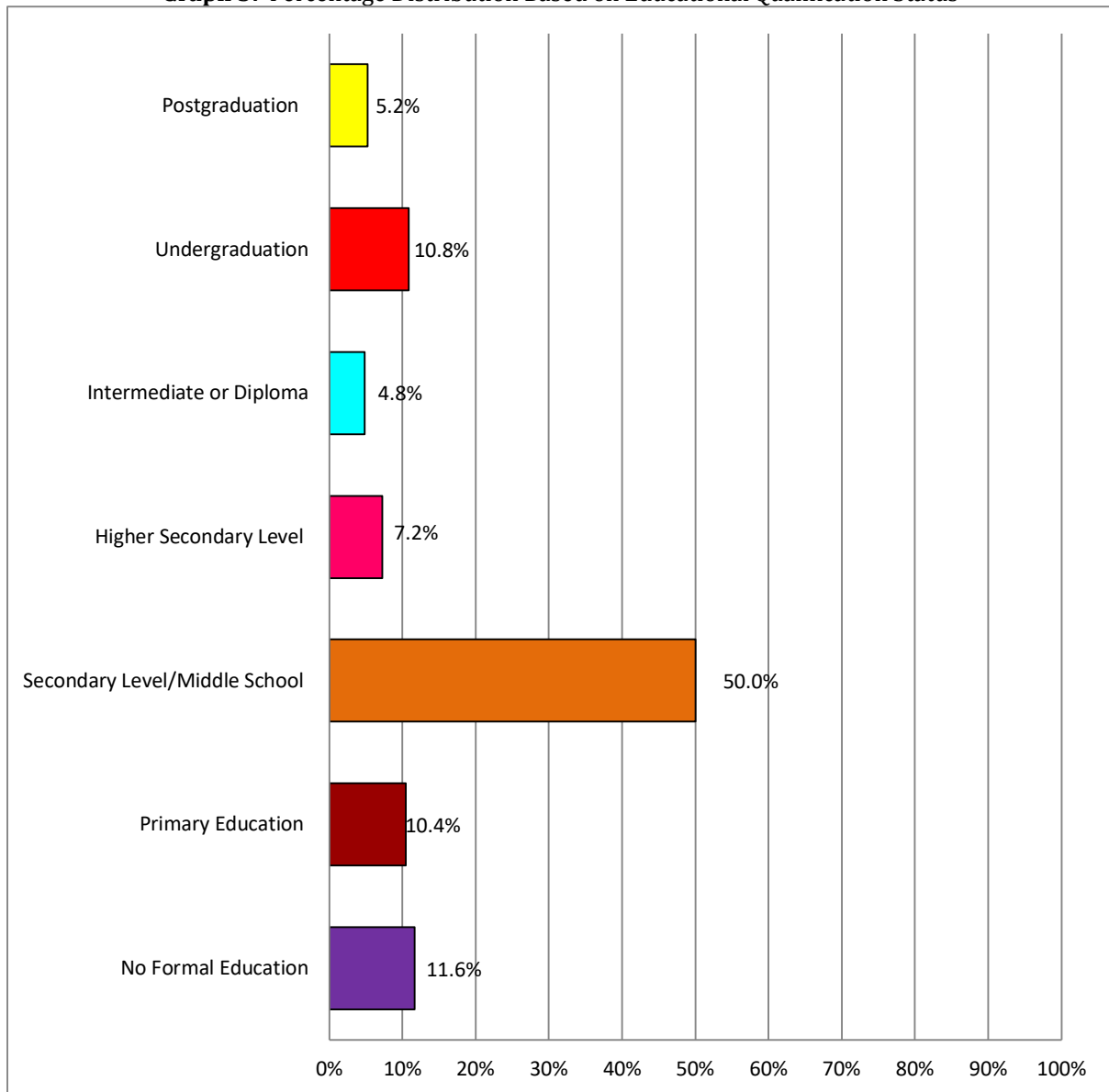
**Graph 2:** Percentage Distribution Based on Current Income in INR



**Graph 2** shows that a majority of the study population 133 (53.2%) do not have income through any source while among those receiving it, about 38(15.2%) in a total of 250(100%) study subjects receive funds from

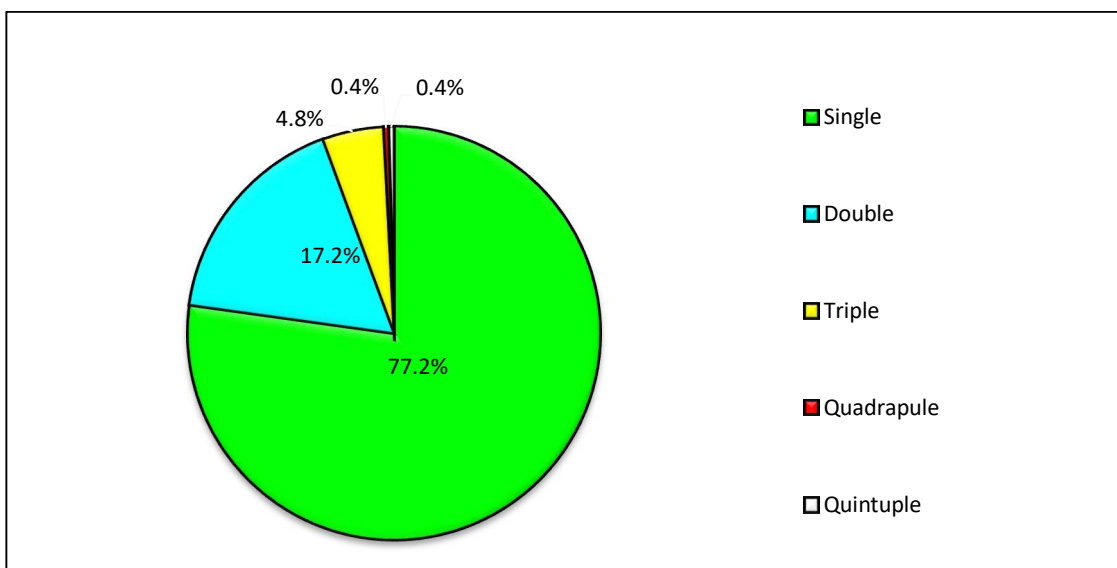
Rs.20,000 to less than fifty thousand per month. This graph also shows that about 20/250 study subjects i.e. 8/100% receive a monthly economical support amounting to less than or equal to Rs. 1000/-

**Graph 3:** Percentage Distribution Based on Educational Qualification Status

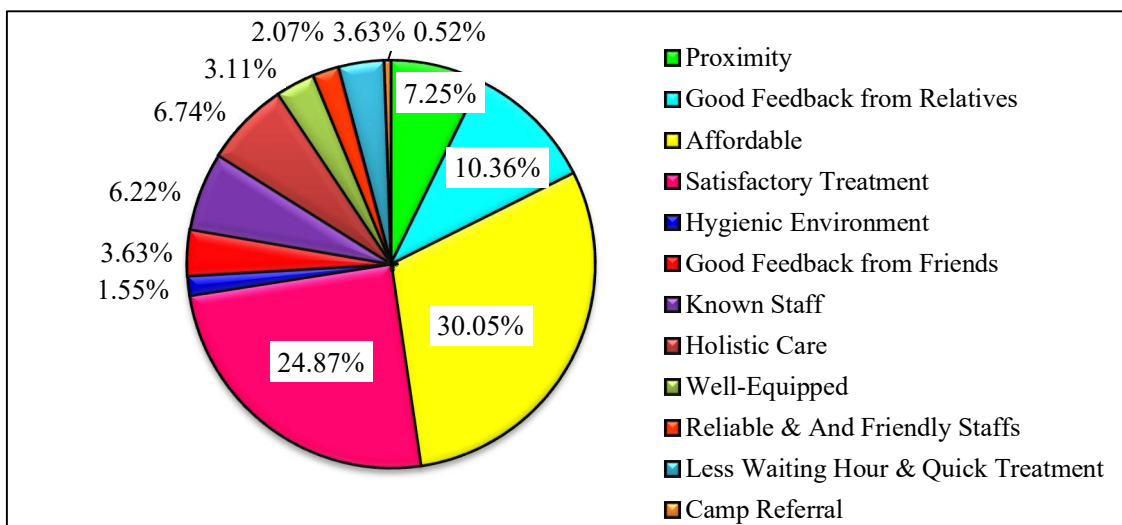


**Graph 3** shows that exactly half of the study population 125(50%) have completed schooling up to only middle /secondary level followed by a majority 29(12%) of them not receiving any form of formal education . This graph also shows that among degree holders, the proportion of undergraduates is higher than postgraduates as well as those who have completed a diploma or any other course at an intermediary level.

**Figure 1:** Pie Chart Depicting the Frequency Distribution of Study Subject Based Upon the Number of Reasons Expressed for Opting Tertiary Dental Set-Up



**Figure 2:** Pie Chart Depicting the Frequency Distribution of Study Subject Based Upon Their Single Most Reason for Opting Tertiary Dental Set-Up



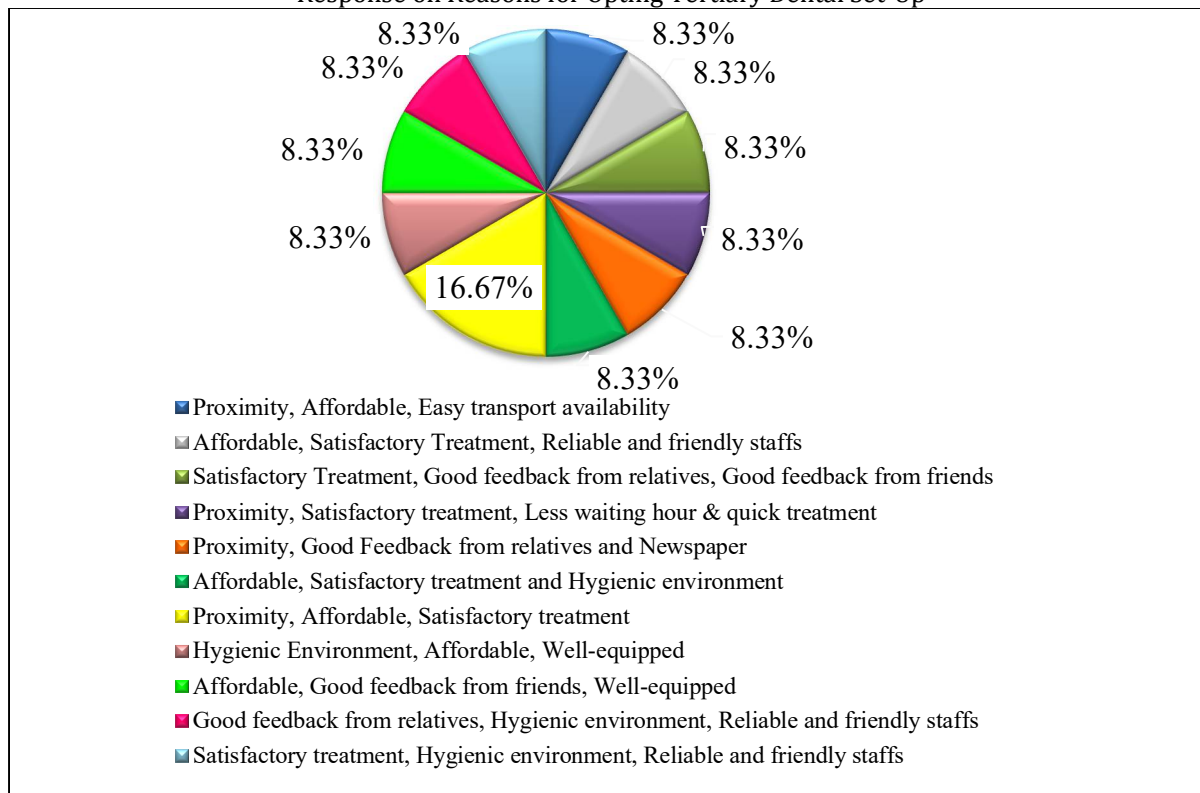
**Figure 2** shows that majority of the study participants 58(30.05%) out of a total 250(100%) geriatric participants opt tertiary hospital set-up for the fact that the treatment charges are affordable than private sector. This pie chart also shows that the second common reason as perceived by 48(24.87%) is being receivers of satisfactory dental treatment preceding with 20(10.36%) visiting such a set-up after good feedback from relatives. It is evident from the figure that about 14(7.25%) selected tertiary centre as it is located close to their residence while the reason is provision of holistic care and presence of a known working individual by 13 (6.74%) and 12(6.22%) study participants respectively. It is also inferred from the above figure that 3.63% of the study participants preferred from the feedback of friends and provision of oral health services at a quick pace in comparison to governmental and private dental units. Tertiary centres being well equipped, maintained hygienic with reliable and friendly staffs are also the basis for choice by about 6(3.11%), 3(1.55%) and 4(2.07%) subjects respectively.

**Table 1:** Percentage Distribution of Study Participants Based on Their Dual Responses on Reasons for Opting Tertiary Dental Set-Up

Dual Options Chosen	n	(%)
Good feedback from relatives and proximity	1	2.3%
Satisfactory treatment and proximity	2	4.65%
Holistic care and proximity	3	6.98%
Less waiting hour & quick treatment and proximity	1	2.3%
Satisfactory treatment and good feedback from relatives	3	7.0%
Hygienic environment and good feedback from relatives	1	2.3%
Proximity and affordable	1	2.3%
Satisfactory treatment and affordable	8	18.6%
Hygienic environment and affordable	2	5.0%
Well-equipped and affordable	1	2.3%
Well-equipped and satisfactory treatment	1	2.3%
Known staff and satisfactory treatment	1	2.3%
Less waiting hour & quick treatment and satisfactory treatment	2	4.65%
Well-equipped and reliable and friendly staffs	1	2.3%
Holistic care and reliable and friendly staffs	1	2.3%
Satisfactory treatment, reliable and friendly staffs	1	2.3%
Affordable and reliable and friendly staffs	1	2.3%
Holistic care and good feedback from friends	1	2.3%
Less waiting hour, quick treatment and good feedback from friends	1	2.3%
Holistic care and well-equipped	1	2.3%
Hygienic environment and satisfactory treatment	6	13.95%
Holistic care and satisfactory treatment	3	6.98%

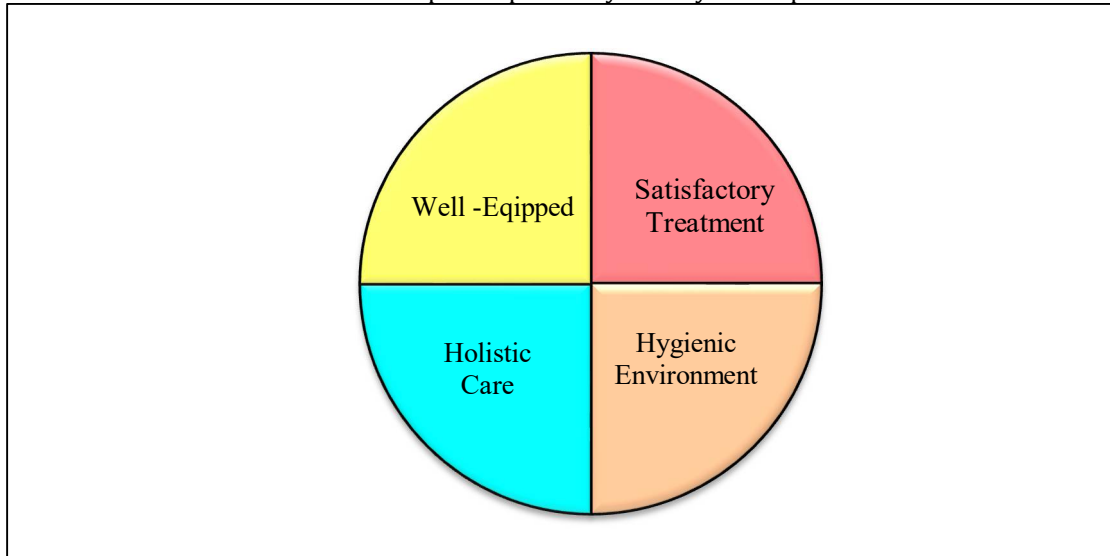
Table 1 depicting dual responses of study participants regarding reason for opting tertiary set up reveals that provision of satisfactory treatment at affordable cost is the primary grounds for selection while hygienic ambience of the hospital and offering of comprehensive health services under one roof are also other factors considered by majority of the interviewed elderly participants.

**Figure 3:** Pie Chart Showing the Frequency Distribution of Study Subject Based Upon on Their Triple Response on Reasons for Opting Tertiary Dental Set-Up



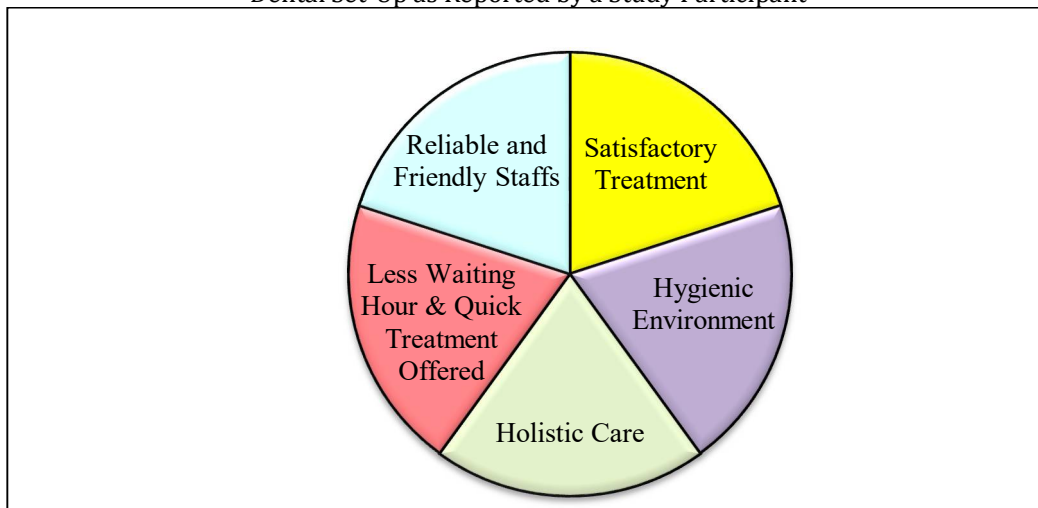
**Figure 3** infers that out of all the triple responses received from study subjects regarding reasons for choice of dental unit, the most important factors were the location of the hospital being situated at proximity and the offer of satisfactory dental services at affordable treatment fee charges.

**Figure 5:** Pie Chart Showing the Frequency Distribution of the Quadruple Reason for Opting Tertiary Dental Set-Up as Reported by a Study Participant



**Figure 5** showing the quadruple response of the surveyed subject on the factors that led to choice of tertiary dental set-up to undergo treatment reveals that its facilities, cleanliness and wide range of services with prioritization of patient’s satisfaction plays a crucial role in decision making of the elderly patient.

**Figure 6:** Pie Chart Showing the Frequency Distribution of the Quintuple Reason for Opting Tertiary Dental Set-Up as Reported by a Study Participant



**Figure 6** showing the quintuple response of the surveyed subject on the reasons for choice of tertiary dental set-up reveals that provision of satisfactory comprehensive dental procedure at a comparatively quicker pace in comparison to other types of dental office set up by reliable staffs with a friendly approach in a sanitized environment plays an influential role in its preference

**DISCUSSION**

It is imperative to know the factors governing geriatric patient’s choice of dental setting so that universal health coverage could be achieved through provision of equitable care.

Different factors are valued by our surveyed elders when choosing a dental setting. It is to be noted surprisingly that all the elders who have taken up this survey have reported that they prefer tertiary

hospital to undergo dental treatment which proves that the structure, processes and the outcomes of the organization chosen as study site functions favourable to their expectation level.

As majority of the study participants have completed education only up to secondary schooling level, and are retired indicative of lack in income source, it is obvious that they are being financially dependent and hence the foremost reason for opting so could be the fact this is the only tertiary dental hospital in the city offering preventive and curative services at free of cost and rehabilitative treatments at affordable costs in a comprehensive set up exclusively for the elderly segment. This finding is in consistency with the study done by Moshkelgoshia *et al* in 2014 in which high tariff was considered a discouraging factor in reaching a particular dental setting by more than half of the participants (54.75%)<sup>[13]</sup>. This result also coincides with another study done by Dande R *et al* in 2019 which determined that its 81.12% participants also considered that the cost of the treatment fee charged played an important role in choosing dental setting<sup>[14]</sup>.

Apart from satisfaction from the treatment experienced taking in to account the competency of the dentist, recommendation from family members 20(10.36%) and friends 7(3.63%) are also considered by the elders and these results confirms that word of mouth remains the best passive yet strong dental marketing mechanism which is also proven in a research by Ungureanu *et al* in 2015<sup>[15]</sup>.

Having discovered that 14(7.25%) and 13(6.74%) of our interviewed survey participants opted tertiary dental hospital due to proximity and comprehensiveness respectively, the former factor is found to be contrasting to the findings of another such study while the latter result is in concordance with the study by Iqbal *et al* in 2014<sup>[12,16]</sup>.

Another important finding of the study to be taken in to consideration while oral health care service planning is carried out is that despite the fact that 48(24.87%) geriatric dental patients have reported that they felt satisfied in the treatment provided at this centre which is the identified as the second reason influencing their decision making of dental setting, majority of the participants 74(29.6%) have visited a dentist before two and less than five years when regular dental check-up is generally recommended once in every six months and these results highlight that oral health educators should emphasize adoption of preventive strategies which are simple and cost effective encouraging effective health promotion through placing people's health in people's hands.

### **Conclusion**

The primary factor which is considered significant by the elderly population when selecting a dental setting is the treatment fee and their expectation includes provision of quick comprehensive service in a hygienic set-up at proximity by reliable competent staffs approaching in a friendly manner. Referrals from kith and kin were considered very important by many as well. This study has also provided insights on the oral health care seeking behaviour of elders understanding their perspectives and concerns.

### **RECOMMENDATION**

It is the need of the hour that tertiary dental health care centres which is the most commonly opted by the elderly population is well supported by both the State as well as Central Governments, voluntary organizations and establishment of public private partnerships through memorandum of understanding so that atleast pain management procedures for the aged individuals belonging to below poverty line could provided at free of cost so that their quality of life remains unimpaired.

The results of this study signify that inter-personal, communication and negotiation skills clubbed with leadership quality of the dentist plays a crucial role in bringing about geriatric patient satisfaction necessitating provision of training in geriatric dentistry for budding dental graduates to meet the unmet treatment demand for this rapidly growing segment of the population who deserve care to curb the menace of oral disease burden.

### **LIMITATION**

Some of the inherent inadequacies leading to lack in generalization of the results could be the study site being a unique tertiary centre first of its kind in the city where certain services are provided at free of cost for elders just as the primary health centres which is usually the first point of contact in the country's health care delivery system due to which the results could be influenced impacting its generalization.

### **FUTURE SCOPE**

In order to overcome the drawbacks, comparative futuristic studies involving all the levels of the oral health care delivery system with varied service financing patterns are recommended and could pave the way for suitable geriatric oral health delivery system in place with equitable distribution to enhance the quality of life of our society's senior citizens.



**CONFLICT OF INTEREST**

Nil

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