Hochschule für Angewandte Wissenschaften Hamburg

Hamburg University of Applied Sciences

AN ANALYSIS OF ORAL HEALTH PROBLEMS IN A SAMPLE OF ASIAN COUNTRIES: A CASE STUDY IN THE ELDERLY POPULATION IN AN OLD PEOPLE'S HOME IN DHAKA CITY, BANGLADESH.

Master thesis submitted to the Faculty of Life Sciences of

Hamburg University of Applied Sciences

Submitted by

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Matriculation Number: [redacted]

Master of Public Health

Hamburg, Germany

13th October 2018

First Supervisor: **Prof. Dr. Walter Leal**

Second Supervisor: **Prof. Dr. York F. Zöllner**

DECLARATION

I declare that, this is my original work towards the master's Degree in public health. Based on my knowledge, this has not been used for any award or degree of HAW-Hamburg, Germany or other University.

Acknowledgements have been made with regards to texts which have previously been used. Also, no part or whole of this work must be used for any purpose without my permission

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Finally, I wish to express my sincere gratitude to all teachers in the department especially those who have been a source of my academic progress for their support and contributions towards my studies here in Hamburg University of Applied Science of Germany.

ABSTRACT

Introduction: The investigation is aimed to assess oral health problems in the elderly population in an old people's home in Dhaka city, Bangladesh. This is a cross-sectional study which included 22 population selected by random sampling method. Written consent was taken from the participants. A pre-tried close-ended questionnaire was utilized for the study. In 1900, 3.1 million human beings or 4 percent of the populace, were 65 years or more aged; by using 2005, the range had expanded to 34.3 million human beings or 12.4 percent of the population, an expansion of the greater than ten times. To evaluate the specific patient, the dental practitioner needs to comprehend the culture, mental, educational, social, economic, nutritional and chronologically particular encounters that may have influenced his or her life.

Materials and Method: Of 25 questionnaires distributed to an Old People's home, 22 were returned. The respondents were aged between 55 to 77 years old. Women comprised 63.6% of the sample.

Results: The result of this study shows that 81.8% had habit of cleaning their teeth while 18.2% were not cleaning teeth. It was seen that 81.80% brushed their teeth using toothbrush and 95.5% using tooth paste. 45% brushed only once a day, 30% brush twice a day while 25% brushed more than twice per day. Of 81.8% who used the brush, 68.4% participants change their brush in every 3-6 months, 26.3% change every 2 months and 5.3% change only every month. Surprisingly, 72.8% of the respondents were aware of using fluoridated toothpaste and only 22.7% were not using it. 100% of the participants reported that they had suffered from dental problems and 50% of the respondents said that they had oral bad odor problems. Tobacco and pan/betel nut chewers 69.2% of respondents, had a greater risk of oral problems. 90.9% of the participants visited a dentist and pain was the main factor for them to visit the dentist chamber or hospital. 72.70% of the participant said that dental treatment cost is very high, and this is one of the major reasons to visit less in dental chambers or hospitals. 81.8% participants feel that dental caries is the most widely recognized dental disease, major factor being irregular brushing followed by consuming more desserts.

Conclusion: Consequences of this study demonstrate that almost all participants oral hygiene practice, knowledge level and utilizing tobacco and chewing pan and betel nut propensities in the population of old people's home in Dhaka city require change.

Keyword: Dental knowledge, oral health practice, betel nut.

CONTENTS

ABBREVIATIONS

CI: Confidence Interval

DCI: Dental Council of India

DMFT: Decayed, Missed, Filled Teeth

MOHFW: Ministry of Health and Family Welfare

MPH: Master of Public Health

OR: Odds Ratio

SPSS: Statistical Package for Social Science

WHO: World Health Organization

OHIP-14: Oral Health Impact Profile-14

CAL: Clinical Attachment Loss

PPD: Probing Pocket Depth

PO_4^{3-}: Phosphate

Ca^{2+}: Calcium

EPS: Extracellular Polysaccharide

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1 INTRODUCTION

1.1 INTRODUCTION

In 1900, 3.1 million people or 4 percent of the populace, were 65 years or more aged; by using 2005, the range had expanded to 34.3 million human beings or 12.4 percent of the population, an expansion of greater than ten times (Ettinger & R.L., 2007). To assess a patient, the dental practitioner needs to comprehend the cultural, mental, educational, social, economic, nutritional and chronologically particular encounters which can have impacted his or her life. Oral health and status are influenced by comparable elements, and they're the accumulation of someone's life experiences with dental care, and with caries, periodontal disorder and iatrogenic disease. Elderly dentistry includes, but isn't restricted to, the diagnosis, treatment and prevention of caries and periodontal disorder, and in addition oral mucosal ailment, head and neck ache, salivary disorder and impaired chewing, tasting and swallowing. a lot of those subjects could be mentioned in this supplement. (EklundK & A., 1999;Evans & Kleinman, 2000;Ettinger & Mulligan, 1999)

All through the arena, a statistic unrest is in progress. the percentage of older human beings is becoming quicker than any other aged group (United Nations. Department of Economic, 2003). An increase spurt within the quantifier of aged people has resulted from upgrades in each social living situations and medicinal care. Around 600 million human beings are elderly 60 years and over, and this quantity will twofold by 2025. by using 2050, it is going to be 2 billion, 80% residing in developing countries. This stance enormous challenges to well-being and social coverage organizers, especially claiming disorder patterns will move simultaneously (World Health Organization, 2002;United Nations. Department of Economic, 2003)

All around, poor oral health amongst older people has especially been found in an abnormal state of tooth loss, dental caries experience and high prevalence rates of periodontal disease of periodontal illness, xerostomia and oral precancer/growth

(Petersen, 2003). Oral ailments are exceptionally common and their effect on both society and the individual are critical. Ache, soreness, sleepless nights, restriction in eating capacity prompting poor sustenance, and time off school or work because of dental issues are overall normal impacts of oral infections.

Although basic enhancements in oral wellbeing have happened in numerous evolved during the most recent 30 years, oral wellbeing imbalances have emerged as a prime public health task due to the fact decrease income and socially deprived gatherings encounter excessively abnormal amounts of oral illness (United Nations. Department of Economic, 2003). In numerous developing nations monetary, social and political changes have significantly affected eating routine and nourishment with a move happening from conventional towards more "westernized" diets (Drewnowski & Popkin, 1997). As a result, the intake of sugars has risen, and ranges of dental caries have elevated (Petersen, 2003). In lots of low-profits nations in the developing, the entire fees of providing conventional operative dental care could exceed the whole health care budget (Kathmandu, 2002).

By the year of 2011, the population of elderly who are older than 65 years old in Bangladesh are estimated to be 9.8 million people or 6.5% of the population and the number would be doubled by 2026 (Kabir, et al., 2013). Here, according to survey report of the Bangladesh Bureau of Statistics (BBS), it is demonstrated that the future pattern is expanding by 0.60% consistently. In 2017, the normal future is 71.52 in Bangladesh while it was 67.7 years in 2010, 70.4 was in 2013 (Rahman, 2017). Life expectancy in Bangladesh is increasing rapidly as a result elderly population is also increasing. By the year of 2050 it is expected that 1 out of 5 might be elderly in Bangladesh. (Kabir, et al., 2013). Bangladesh also pose in tremendous challenges in health status of this specific population since disease pattern would shift.

In future, China and South Asia will represent the largest number of elderly people. By the year 2025 Bangladesh alongside China, India, Indonesia and Pakistan will be the most elderly populace in the world. (Nations, 2010)

Because of diminished fertility and increased life expectancy, the number of inhabitants in many countries are ageing quickly. By the year 2050 it is normal that an expansion

in the populace aged 60 years or over will represent about portion of the aggregate development of the total populace (United Nations, 2007). The number of inhabitants in older persons in developed is right now significantly higher than in developing countries; be that as it may, from a worldwide point of view most of the older persons live in developing countries (United Nation, 2007). A striking angle populace ageing is the dynamic statistic ageing of the older population itself. Worldwide the most quickly developing age amass comprises of people aged 80 years or over (Nations, 2002).

Even though this age bunch now represent under 2 percent of aggregate total populace, the quantity of each old individuals anticipated that would more than fourfold finished the following four decades from under 90 million in 2005 to all most 400 million in 2050 (United Nation,2007).

This statistic progress constitutes a huge test for wellbeing experts around the world, especially claiming ailment examples will move simultaneously. WHO in its Health Report 2002, broke down the worldwide weight of illness and the significant danger of ailment, inability and passing (World Health Organization, 2002). The predominance of non-transferable perpetual sicknesses (NCDs, for example, cardiovascular infection, incessant respiratory ailment, growth and diabetes, increments significantly with age, which mostly clarifies why these illnesses are quickly turning into the main source of handicap and the mortality around the world.

With age the danger of loss of solid life years is bothered because of low individual protection, poor wholesome status, endless ailment and antagonistic socio-ecological condition (World Health Organization, 2002). Albeit a great many people now may anticipate living longer, the danger of creating no less than one interminable ailment increments with age; this mirrors the aggregate impact of a deep-rooted presentation to chance factors and isn't identified with sequential age fundamentally (World Health Organization, 2002). A center gathering of modifiable hazard factors is basic to numerous incessant illnesses and wounds, including oral malady. These regular hazard factors including undesirable eating regimen tobacco utilize, harmful alcohol utilize and stress (Petersen, 2003).

1.2 BACKGROUND INFORMATION

Oral cleanliness is the act of keeping the mouth and teeth clean to avert dental issues. Most usually, dental cavities, gingivitis and terrible breath. There are likewise oral obsessive conditions in which great oral cleanliness is required for recuperating and recovery of the oral tissues. These conditions incorporate gingivitis, periodontitis and dental injury, such a subluxation, oral sore and following intelligence tooth extraction (Barco CT, 1991).

“While the eyes might be the window to the spirit, our mouth is a window to our body's health". The condition of your oral wellbeing can offer loads of sign about your general wellbeing. Oral wellbeing might be characterized as a standard of strength of the oral and related tissue which empowers a person to eat, talk and associate without dynamic malady, uneasiness or humiliation and which adds to general prosperity (Niaz MO, Naseem M, Siddiqui SN, Khurshid Z, 2013). Most oral malady, as most incessant pathologies when all is said in done, is straightforwardly identified with the way of life. The oral ailment can be viewed as a general medical issue because of its high commonness and critical social effect. The endless oral sickness commonly prompts tooth misfortune, and sometimes, has physical, passionate and monetary effects. These effects lead thusly to diminished welfare and personal satisfaction. To limit the negative effects of interminable oral infection, there is in this way an unmistakable need to diminish hurtful oral wellbeing propensities. Such a decrease can be accomplished through proper wellbeing instruction programs (Zhu L, et al., 2005).

Dental care has been efficiently composed to enhance dental wellbeing demeanors among the elderly and the youthful (Holst, D., Schuller, A. and Grytten, J., 1997). This advancement has enhanced the elderly's dental wellbeing and change the dental caries designs influencing them (Marthaler, et al., 1996). It likewise brought about more grown-ups having the capacity to keep their regular dentition useful into a later age (O'mullane, D. and Whelton, H., 1994). In present day dentistry, "aversion" gets extraordinary consideration and goes before treatment. Avoidance is simpler and more sparing. These days, in cutting edge social orders, through basic aversion procedures, for example, cleanliness preparing, fluoride treatment, tooth brushing, and

supplementary instrument, caries commonness, and periodontal malady have been decreased essentially. Accordingly, the requirement for medications that are most costly and tedious has been diminished (Danielsen, et al., 1989).

The conduct of the general population, in every public, is impacted by the learning and inclinations; then again, the conviction and propensities of every public are additionally affected by individuals' conduct. Normally, social and individual cleanliness, rely upon individual's information. To advance helpful cleanliness propensities among individuals and change their conduct, a thorough and exact program is vital. Such an approach drives us to accomplish our social objectives. A standout amongst the best factors, to achieve these objectives is to contribute and consider oral cleanliness preparing to upgrade elderly learning (Ullah, et al., 2002).

The basic way to deal with wellbeing instruction considers that monetary, social and social variables are the foremost determinants of sickness. The duty regarding undesirable conduct lies with society, not with the person. The change from an undesirable state of mind will happen given enough data, satisfactory inspiration and enough routine with regards to the measures to be embraced by the subject. Data implies that the subject has every one of the information important to comprehend what oral sicknesses and how it emerges, and additionally to comprehend the defensive measures that should be adopted(knowledge). This information will, in principle, prompt an adjustment in the state of mind, which will, thusly, lead the subject to roll out improvements in their day by day life (Redmond, et al., 1999).

Accordingly, because of dental caries, the subjects know (for instance) that off base brushing may cause caries and this data creates an inspirational state of mind towards day by day brushing (i.e. the aim to brush teeth every day with a specific end goal to have more advantageous teeth) and in this way changes in brushing conduct. Along these lines, the instructive program focused at the individual, intending to change an undesirable direct, will be a total disappointment if they don't think about the distinctive parts of the subject's life, both financial and ecological, that impact their conduct and oversee the different wellbeing program (Freeman, et al., 1993). Students dental wellbeing disposition could be clarified by their present self-mind hones notwithstanding

the desire to embrace positive dental wellbeing practices later. Their capacity to embrace these were future related with the positive and negative view of their own dental wellbeing. The nearby relationship between positive practices towards and feeling of control over future dental wellbeing recommended that wellbeing states of mind cloud mirror the sentiment of strengthening and this was helpful for the reception of self-mind rehearses. Those students who felt engaged were readier to advance their own dental wellbeing by methods for their positive self-mind activity. Then again, those gathering of students which seemed less ready to absorb dental wellbeing data, which has more negative mentalities and were along these lines unfit to advance their own dental wellbeing through the appropriation of self-mind hones, could be recognized (Jain, 2012).

Dental caries is the most prevalent dental affliction of childhood as well as elderly. Despite credible scientific adventures and the fact, the caries is preventable, the disease continues to be a major public health problem. In developing countries changing life-styles and dietary patterns markedly increasing in the caries incidence. Dental health education begins from footsteps of awareness (Rao, A., Sequeira, S.P. and Peter, S., 1999). Dental caries is highly prevalent chronic disease and its consequences cause a lot of pain and suffering millions of people throughout the world have lost their teeth due to caries. Sugars are most common dietary etiological cause of dental caries (Kumar, et al., 2005). The presentation of caries is highly visible; however, the risk factors and stage of development are similar. Initially, it may appear as a small chalky area which may eventually develop into a large cavitation. Sometime caries may be directly visible, however, the other methods of detection such as radiographs are used for less visible areas of teeth and to judge the extent of destruction. Food habit, poor oral hygiene maintenance, lack of care of tooth might be the cause of dental caries. In Bangladesh people doesn’t know about the importance of tooth. The educated people also not aware about the information, as they thought that milked teeth have no significant role, education level is not a matter here important think the awareness (World Health Organization, 2013).

Oral wellbeing is an indispensable part of by and large wellbeing, which adds to every individual's prosperity and personal satisfaction by emphatically influencing physical

and mental prosperity, appearance and relational relations. Oral wellbeing is a critical part of wellbeing for all elderly and is simply more essential for the elderly with uncommon wellbeing needs. Since oral cleanliness influences one's style and correspondence, it has solid organic, mental and social projections.

Human dentition is made from the two arrangements of dentitions at two distinctive phases of life. These are the essential dentition and changeless dentition. In essential dentition, all teeth present in the mouth are deciduous or drain teeth are twenty in number and perpetual teeth are thirty-two in number.

Oral wellbeing status for both elderly and grown-up can be evaluated by DMFT (D= Decayed, M= Missing, F= Filled, T=Teeth) recorded by the WHO. Support of oral cleanliness is vital to reestablishing the deciduous and the lasting arrangement of dentitions. Terrible oral cleanliness creates an undesirable oral condition that subsequent in dental rot, gum disease, awful breath, throat contaminations, amassing of tooth misfortune and analytics. Dental rot usually known as dental caries is a typical reason for tooth misfortune among elderly and grown-up over the world.

Dental caries is dynamic bacterial harm to teeth presented to the spit. Caries is a standout amongst the most widely recognized everything being equal and still a noteworthy reason for the loss of teeth.

A definitive impact of caries is separated lacquer and dentine and, in this manner, open a way of microbes to achieve the mash. The outcomes are the aggravation of the mash and later of the periapical tissue. Intense pulpitis and apical periodontitis caused along these lines are the most well-known reason for toothache. A disease can spread from the periapical locale to the jaw and past. Thought this is uncommon in Britain, elderly in different nations every so amazing this reason. Dental caries is a sugar relied upon irresistible ailment. Corrosive is delivered because of the digestion of the dietary starch which results in a drop-in ph. at the tooth surface in the reaction of calcium and phosphate resolve diffuse of polish coming about demineralization. It is a dynamic irreversible harm of tooth which is caused by the mix of multi-factors, however among them, miniaturized scale life form are the fundamental guilty parties (Odell, E.W., 2017).

Dental caries is the most widely recognized oral ailment. It is an incessant irresistible malady which not at all like different irresistible infections, can't stop with anti-toxins. It is the basic issue in both the developing and developed countries. The etiologies of dental caries are: 1) Cariogenic microscopic organisms (Agent)- these are viridians streptococci which are a heterogeneous gathering including Streptococcus Mutant, S. Sobrinus, S. Salivaris, S. Mitiorand, S. Sanguis; 2) Bacterial plaque; 3) Susceptible tooth surface (host) and 4) Diet (fermentable starch). Additionally, basic oral infections are periodontal illness and gingival malady. Many general infection conditions additionally have an oral appearance that builds the danger of oral sickness.

Dental caries is the most common interminable illness among the elderly around the world. While dental caries has diminished in many industrialized nations the opposite is the situation in some low-wage nations. The expansion of caries is caused by an assortment of components one being the appropriation of sustenance propensities high in refined sugars. Wellbeing conduct, for example, the utilization of fluoridated toothpaste and normal tooth brushing is uncommon among elderly in low-salary nations.

During recent decades, a stamped decrease in dental caries experience of the elderly has been seen in many industrialized nations. The across the board utilization of fluorides, particularly in toothpaste, change of oral cleanliness, changing example of sugar utilization, changes in symptomatic criteria and the preventive and remedial endeavors by dental wellbeing administrations is regularly viewed as the principle explanations behind the decrease in dental caries. The conceivable pretended by expansive financial factor has likewise been featured and investigations of caries decrease have demonstrated that dental administrations in that capacity affected caries commonness.

1.3 JUSTIFICATION OF THE STUDY

Oral disease is the most well-known issues in developing nations. In Bangladesh, it is likewise a noteworthy problem. Numerous individuals experience the ill effects of oral maladies. Elderly are more vulnerable than a grown-up. Pre-babies are not ready to clean their mouth and they guided by their parents. Elderly perfect their mouth as per their own information, conviction, custom, states of mind and the manner in which they gain from that point. So high elderly mirrors the current circumstance of oral wellbeing training in their individual, family and social level.

The oral wellbeing of the elderly remains a dismissed territory of wellbeing in our nation. There has been almost no exploration and some obscure reasons analysts did not embrace considers that could comprehend the variables identified with cries or the correct circumstance of dental rot in our nation. The significance of doing efficient research on the elderly has been appeared to be neglected. In Bangladesh, to expand and greatness of dental caries among elderly and related components have not been broadly investigated. The World Health Organization (WHO) additionally does not have any database on the oral health status of elderly in Bangladesh.

Dental diseases and other deliberate contaminations of dental origin are the real medical issue among the elderly in Bangladesh. This issue is raised because of the poor Oro-dental cleanliness which is specifically identified with the information about the cleaning of the mouth and teeth. Real extents of the issue are not yet decided but rather in developing nations, a great number of studies were led to discover the reason and methods for the decrease of oral diseases amid the first years.

Oro-dental cleanliness or hygiene is an essential part of health. Sadly, many developing nations like Bangladesh absence of legitimate information are predominant in the elderly. This leads with expanding occurrence of bad odor, gum disease, and dental caries. Tooth brushing alone can't address the issue of dental cleanliness. However, a large number of elderlies in developing nations don't have a clue about the correct method for dental hygiene.

Oral health is one of the vital segments of aging; because oral sickness can influence general wellbeing and personal satisfaction of elderly individuals. WHO announced that

hindrance of all part of physical condition would be obvious in the elderly. In this manner, it would likewise occur in the oral condition. In any case, information on oral wellbeing in delicate elderly patients in Bangladesh is yet restricted and scattered.

1.4 RESEARCH QUESTION

1. What is the status of oral health problems in the elderly population in Asia?

2. What is the situation of oral health in the elderly population in an old persons' home in Dhaka city?

1.5 OBJECTIVES

1.5.1 General research objective:

- To assess the knowledge of oral health problems in the elderly population in old people's home in Dhaka city.

1.5.2 Specific research objectives:

- To study the oral health problem of the older population
- To assess knowledge about oral diseases among the old-age population
- To evaluate the oral hygiene practice of old-age population
- To assess the oral health status of old-age population.
- To explore what type of oral health service and programmers are available to older people.

1.6 OPERATIONAL DEFINITIONS

Illiterate: A person who is unable to read and write.

Pain: A feeling of distress, suffering or agony, caused by stimulation of specialized nerve endings.

Sensation: A perception associated with stimulation of a sense organ or with a specific body condition.eg: heat sensation, cold sensation, visual sensation etc.

Oral hygiene: Oral prophylactic a procedure is those designed to maintained oral health prevent oral disease. All the status related to oral health, periodontal status, oral cavity status etc.

Dental caries: dental decay prevents in any surface of the teeth during clinical examination.

Discomfort: A feeling of being uncomfortable physically or mentally.

Gingivitis: A infection of the gum which causes swelling, pain and sometime bleeding.

Periodontitis: Inflammation of periodontium usually caused by the bacteria growing in the space between the gum and lower part of the tooth crown.

Abrasion: the wearing away of a substance or structure such as skin or teeth through some unusual or abnormal process. In relation with the teeth, abrasion occurs due to the faulty tooth brushing techniques.

Attrition: the wearing away of a substance or structure of tooth or other structures during normal use. E.g.: due to masticatory force.

Erosion: In dentistry, the wasting away or loss of substance of a tooth by a chemical process that does not involve known bacterial action is called erosion.

Tooth fracture: A break in the continuity of the tooth followed by trauma.

Tooth decay: The gradual decomposition of dead organic matter also called as dental caries.

Dental Plaque: Yellowish layer which is tenaciously attached to the tooth surface

Dental Calculus: A hard, stone like concretion, varying in color from creamy yellow to black, that forms on the teeth or dental prostheses through calcification of dental plaque.

Fluoride: This substance release fluorine which bonds to calcium to form calciumfluoroapatite.

Periodontitis: It is gum diseases. Periodontitis means inflammation around the tooth. Periodontitis and all periodontal diseases are bacterial infections that destroy the attachment fibers and supporting bone that hold the teeth in the mouth.

Miswak: The miswak is a teeth cleaning twig made from the Salvadora persica tree. A traditional and natural alternative to the modern toothbrush**.**

Paan: Paan is a preparation combining betel leaf with areca nut widely consumed throughout South Asia, Southeast Asia and Taiwan.

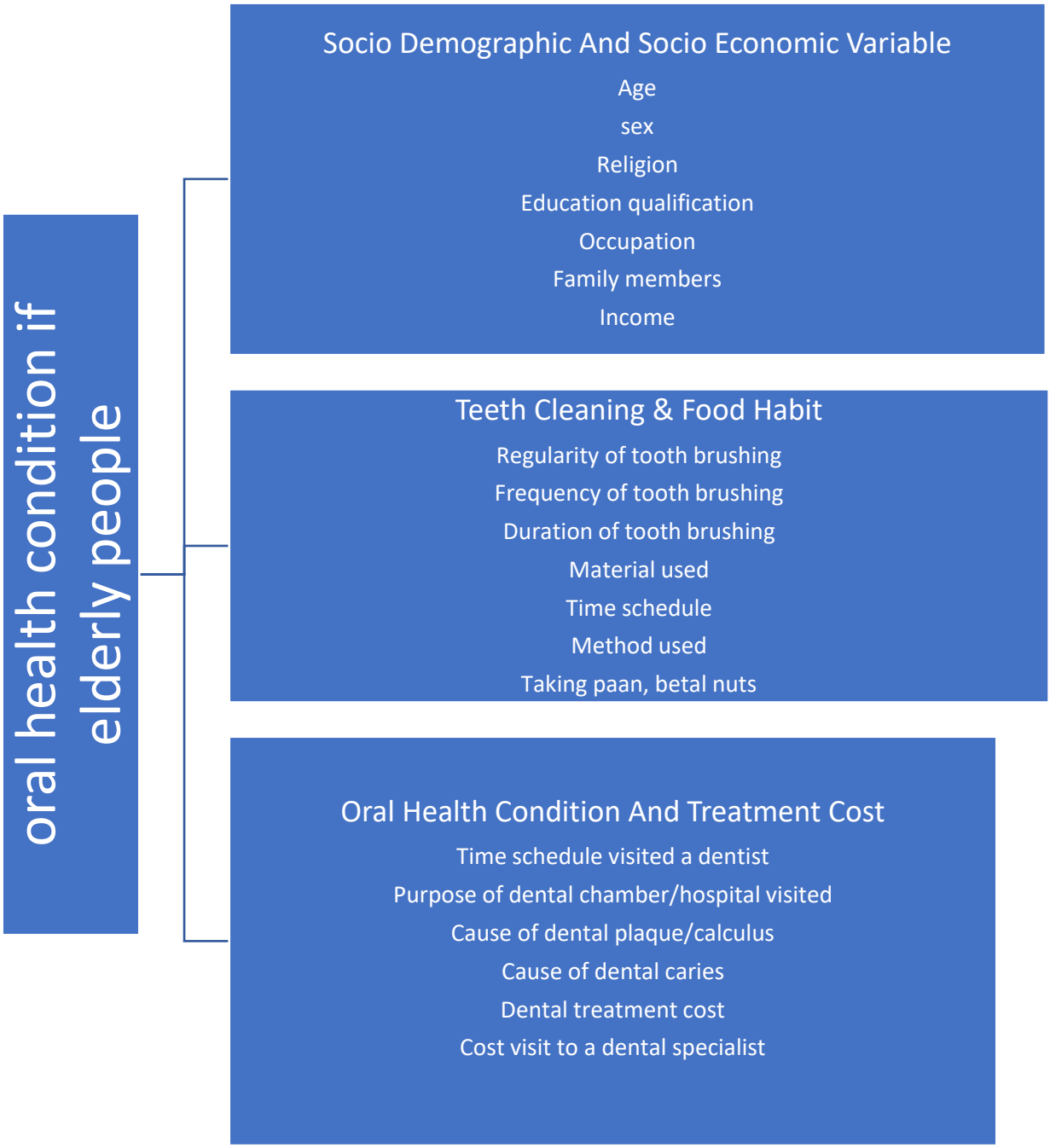
Betel nut: The areca nut is the fruit of the areca palm. The areca tree is a feathery palm that grows to approximately 1.5 m in height and is widely cultivated in tropical India, Bangladesh, Japan, Sri Lanka, south China, the East Indies, the Philippines, and parts of Africa.

1.7 LIST OF VARIABLES

Independent variable	Dependent variable
Socio Demographic and socio-economic variable Age Sex Religion Education qualification Occupation Family member Income	
Teeth cleaning Regularity of tooth brushing Frequency of tooth brushing Duration of tooth brushing Material used Time schedule Method used	**Oral health condition of elderly people**
Food habit Consumption of paan and betal nut	
Oral health condition Time schedule visited a dentist Purpose of dental chamber/hospital visited Cause of dental plaque/calculus Cause of dental caries	
Dental treatment cost Dental treatment cost Cost visit to a dental specialist	

1.8 CONCEPTUAL FRAMWORK

INDEPENDENT VARIABLES **DEPENDENT VARIABLES**



2 LITERATURE REVIEW

2.1 BANGLADESH PERSPECTIVE

Helderman, Joarder & Begum in their paper described the present status of periodontal condition of the elderly population in Bangladesh. WHO suggestion wise above 65 years age group as the major age group for monitoring periodontal diseases. Day by day increased the severity of periodontal diseases in the aging population. The elderly of urban privileged people periodontal condition is much better comparing to rural areas and urban slum elderly population. Almost all elderly had high score calculus and deep periodontal pocket. The betel quid- chewing (locally it is called Paan) is an important part of their daily life habit. Periodontal diseases were frequently found in those elderly whom an unhealthy eating habit, practicing tobacco habit show the lack of oral health knowledge. (Helderman, Joarder & Begum, 1996)

Zai, Jamayet & Alam in a study compare the distinctions of mean score of oral wellbeing related quality of life and oral health impact profile-14 among teeth status, general trademark and every day oral practices among elderly. The greater part of the elderly people of Bangladesh are not in a decent financial condition. By accentuation the normal future of life expectancy in Bangladesh has expanded. It is discovered that people are living longer both in village and urban zones. More settled people are habitually unfit to deal with the interest in prosperity because of exceptional poverty where nourishment is the primary need. oral wellbeing status is vital piece of aggregate wellbeing since oral wellbeing influences general wellbeing. oral prosperity moreover has an association with different unlimited diseases. The study showed that the most youthful elderly matured 60-64 years had least mean score of OHIP-14 with the best personal satisfaction identified with oral wellbeing contrast with female respondents. The mean score of OHIP-14 among the respondents with various salary level were not unique. It may be because of deal with oral wellbeing did not rely upon their salary level, it depends just their insight as it were. It means not that they couldn't exertion toothbrush and toothpaste however they thought slag, charcoal, and powder sold by quark or customary healer made their teeth better. The authors concluded that most of

them were not cognizant about their oral wellbeing. In their study elderly the individuals who had more teeth had bring down OHIP-14 score which implies they have great personal satisfaction than those with less teeth. (Zai, Jamayet & Alam, 2013)

Zaman, Naser, Khan, Habib in their study described that how dietary habits and oral health care practices reduce periodontal diseases in an indigenous Bangladeshi population. The periodontal infection seems, by all accounts, to be a noteworthy worldwide general wellbeing concern influencing most of the grown-up populace. it is the main source of tooth misfortune in grown-up and may have connection of other foundational condition, for example, diabetics mellitus, cardiac diseases. Predominance and seriousness of periodontal infection change among various populations. These variety in various populace can be clarified by age, oral cleanliness hone, way of life, mental pressure and different social components. The higher pervasiveness and occurrence of periodontal infections coming about because of poor plaque control is consistently acknowledged. The indigenous individuals are hereditarily, socially and geologically not quite the same as the all-inclusive community. The "Garo" devour all sustenance's accessible in the encompassing hills. The mass segment of their feast includes sinewy sustenance's. Their result showed that the general pervasiveness of periodontal sicknesses was bring down in the "Garo" population contrasted with Bangladeshi basic people. This bring down predominance may be clarified by the customary nourishment propensities for the populace. The result showed that most of the members (75%) found to have propensity for biting betel-takes off. Most senior citizens including both males and females have propensity for biting betel leaf and areca nuts notwithstanding smoking. their investigation uncovers that personal propensities conceivably goes about as a hazard factor for periodontal annihilation as reflected in expanded CAL and PPD and its also expanded with age. This outcome is like that of the all-inclusive community of Bangladesh those who have this type of habits. The author found as the result was without having an entrance to an expert dental practitioner or part of any oral human services mindfulness program, the relative low predominance of periodontal infections would possible be able to be credited in part of conventional dietary propensities for the indigenous populace (Zaman, K., Naser, M., Khan, M.H.A. and Habib, S.H., 2015).

In one earlier study of oral health status among tobacco users in the selected rural population, Jabeen, Manni, Shakil Conducted cross- sectional study in seven villages of Gazipur district. 349 contributors with age ranging in 18-96 years. In Bangladesh, greater part of the populace are tobacco consumers. Tobacco perform keep ate up toughness via the consumer of a variety about forms, beside smoking after smokeless tobacco chewing. Tobacco leaf utilization represents numerous wellbeing risks, yet the greater part of the populace is uninformed of these dangers. Smokeless tobacco has been implicated as a hazard factors for various oral conditions, beginning from gingivitis to oral tumors. The reason for a significant part of the utilization of tobacco might be absence of education, absence of wellbeing training, absence of legitimate supervision and so on. The study confirmed to that most of the male respondents (99.1%) were smoke and 46% of the female respondents had the tobacco biting propensities. The investigation finding demonstrated that among the tobacco consumers teeth was observed greater stained, greater plague, greater calculus, dental caries and awful odder. Gingiva was more aggravated, more white and red patches in the oral cavity. The overall picture of their study that the oral wellbeing status was moderately better among tobacco non-consumers (Jabeen, S., Manni, U.J.A. and Shakil, S.S).

Enam, Mursalat, et al in their study described the prevailing examines aimed to experimentally measure dental erosion potential indicating key parameters, inclusive of pH, TA, phosphate (PO_4^{3-}), and calcium (Ca^{2+}) contents, of the soft drinks, energy drinks, fruit juices, and bottled drinking water available in the nearby marketplace of Bangladesh, and to assess the capability erosive hazard related to those beverages. other parameters dictating the dental erosion capacity include intake frequency, temperature of the beverages, oral hygiene, and many others prevalence of erosion-induced tooth degradation has been increasing among each younger and adult populace round the world which includes Bangladesh. Their studies work confirmed that liquids generally to be had in Bangladesh have dental erosion potential based on the values of different physicochemical houses affecting teeth dissolution and might motive teeth erosion on long-time period consumption. But, the slight degree of saturation of fruit juices, and excessive diploma of saturation of few gentle drinks along with black cola and Fanta, shows possible inhibition of demineralization of teeth and

dentin. but, the slight degree of saturation of fruit juices, and excessive diploma of saturation of few gentle drinks along with black cola and Fanta, shows possible inhibition of demineralization of teeth and dentin. evaluation of dental erosion potential of beverages and consuming water mentioned on this observe will assist engaging in in vitro analysis to model the dynamics of dental erosion and could serve as the basis for determining the potential erosion risk in the direction of the population of Bangladesh. however, most of the bottled ingesting water samples showed very low diploma of saturation, which suggests normal intake may stimulate mineral elimination from enamel and dentin with the aid of leaching. Low pH and high TA, which suggest excessive capacity to dissolve tooth and root dentin, have been found to be the commonplace criteria of the locally available tender beverages, power liquids, and fruit juices (Enam, F., Mursalat, M., Guha, U., Aich, N., Anik, M.I., Nisha, N.S., Esha, A.A. and Khan, M.S., 2017).

2.2 ASIAN PERSPECTIVE

It has been done as oral health potential yet toothbrushing behavior had expanded during the duration 1987-1995 between residents within Wuhan City, positioned of Central China. A stuff campaign, '"Love Teeth Day", has been performed ethnical every 12 months between Mainland China because 1989, in imitation of improving people's awareness over dental health seriousness. Facts respecting the oral health care related attitudes, knowledge and hygiene practices of adults in China is nonetheless very limited, because of farmers, any represent greater than incompletely of the villagers. It can be seen that the elderly in Guangdong Province have poor knowledge of oral health but positive attitudes toward it. Oral fitness instruction performs additionally stand carried oversea alongside mean fitness instruction packages via the predominant health outweigh network as is in the meanwhile established (Lin, H.C., Wong, M.C.M., Wang, Z.J. and Lo, E.C.M., 2001).

Dali, M. and Laleet, R. aimed to evaluate healthy mouth empower a person to talk, eat and associate without encountering any active sickness, inconvenience or embarrassment in their study. Utilization of toothbrush in underdeveloped regions is grossly restricted and Neem twigs are generally used for teeth cleaning. Brushing after main meal is not performed universally. Biratnagar city who are denied even private dental professionals. General information and state of mind in connection to periodontal infection were evaluated. As for the practices, the utilization of different oral cleanliness strategies, for example, toothbrush, dental floss, and tooth powders were included. The study shows that 785(62.3%) respondents brushed their teeth utilizing toothbrush and toothpaste and 0.07% respondents did not use toothpaste. 188 respondents are utilizing tooth powder. 29 (2.3%) the populace utilized fingers rather than brush with toothpaste though 24(1.9%) populaces utilized the finger with toothpowder to clean their teeth. Just 1(0.07%) utilized just fingers without toothpaste or powder and rest 231(18.3%) utilize miswak for cleaning teeth. Among the populace who brushed their teeth, 1195 (94.5%) expressed that they brush just once every day, 39(3%) brush two times per day while 25(1.9%) brushes more than two times a day. Of 1205 (61.96%) who utilized the brush, 500 (41.7%) members change their brush in each 1-3 months, 400(33.1%) change every six months and 302(25%) change simply after it destroyed.

At the point when questioned regarding the role of fluoride and utilization of fluoridated toothpaste, shockingly, 726(70.76%) of the respondents knew about it and utilizing fluoridated toothpaste and just 300(29.2%) respondents were not utilizing it and unaware of its role to dental tissues. 403(31.5%) of the participants revealed that they had experienced some type of dental issue and 877(68.5%) had not encountered any dental issues. Participants opinion on the main considerations that reason dental issues uncovered that 86 (21.3%) knew that eating desserts and chocolates can cause dental problems. 44 (10.9%) participants knew that tobacco items can cause oral issues. (Dali, M. and Laleet, R., 2014).

Liu, Zhou, Zhang, Yang in their study they found Streptococcus mutans is notion to be a critical pathogen worried inside the formation of dental caries and the presence of S. mutans to synthesize extracellular polysaccharide (EPS) and convey acids leads to the status quo and development of extraordinarily cariogenic dental biofilms. consequently, the relationship among tobacco smoking and dental caries is unambiguous. Dental caries is a primary fitness trouble that influences 60–90% of college-age youngsters and most adults and is 2nd most effective to the common place cold in humans. In recent years, an increasing number of researches have located a near correlation between smoking and dental caries. An in vivo have a look at demonstrated that cigarette smoke exposure and viral infections can synergistically growth the susceptibility of mice to secondary bacterial invasion. Caries is a complicated and multifactorial situation which leads to demineralization and modern destruction of dental tough tissue. S. mutans and its cariogenic ability in vivo and similarly affirm our preceding in vitro studies. In England, publicity tobacco products for years substantially improved coronal and root caries. Dental plaque is especially accountable for the formation and development of caries. some other in vivo have a look at confirmed that publicity to cigarette smoke expands the caries-affected location inside the maxillary molars of rats. Many elements, together with microorganisms, environment and meals, are related to dental caries. some other stated a nicotine range of 367 ng/mL to two.5 mg/mL in inspired saliva and 900 ng/mL to four.6 mg/mL in unstimulated saliva. Different research pronounced nicotine attention varied from 70 ng/mL to at least one. Fifty-six mg/mL.23 In our study, 1 mg/mL of nicotine promoted the improvement of

dental caries within the molar tooth of rats (Liu, S., Wu, T., Zhou, X., Zhang, B., Huo, S., Yang, Y., Zhang, K., Cheng, L., Xu, X. and Li, M., 2018).

Recent findings from Canada counsel that oral diseases accounted for productivity losses >$1 billion yearly for Canada alone. Untreated dental caries in permanent teeth was the foremost prevalent condition evaluated for all the GBD 2010, whereas severe periodontists and untreated dental caries in deciduous teeth were the 6th- and 10th-most prevalent conditions affecting, severally, 11% and 9% of the world population. Worldwide were calculable at $297.67B; 82% of the calculable expenditures occurred in high-income countries. geographic region and therefore the Caribbean accounted for $14.06B. South Asia contributed $12.84B. Eastern Europe, Central Europe, and Central Asia along contributed $9.32B. North Africa and therefore the geographic area contributed $8.33B. The region comprising East Asia, geographic area, and Oceania accounted for $5.79B; $2.96B was attributed to geographical area. Severe tooth loss accounted for the very best proportion of productivity loss in High-Income Asia Pacific, Western Europe, High-Income North America, Central Europe, and Eastern Europe. Severe periodontists accounted for the very best proportion of productivity loss in archipelago, Southern geographic region, Tropical geographic region, Central geographic region, geographic area, Central Asia, and sub-Saharan geographical area. range of mountains geographic region, severe tooth loss and severe periodontists had the most important share in productivity loss. Untreated dental caries in permanent teeth accounted for the very best proportion of productivity loss in North Africa and geographic area, South Asia, Oceania, sub-Saharan Southern Africa, sub-Saharan Central Africa, and sub-Saharan geographic region (Listl, S., Galloway, J., Mossey, P.A. and Marcenes, W., 2015).

Shaju, Jacob in their research started that the simplest oral health schooling, easy interventions like ache comfort emergency care for acute contamination and trauma aren't to be had to the good-sized majority of populace, mainly in rural place. The dental colleges are foremost gamers for cheaper oral care and provide tremendous tertiary care. With the system of the Oral health coverage India has begun recognizing the blessings of having a wholesome populace including in oral fitness. underneath the government of India and world fitness corporation collaborative software on oral health,

a Multicentric oral fitness survey changed into envisaged inside the year 2004, to be able to have a baseline information of the oral diseases burden and associated threat profile of the populace for four index age group i.e. 12, 15, 35-44 and 65-74 years. The best prevalence in 65-74 years organization was recorded from Maharashtra (96%), accompanied by Orissa (90%), Delhi (85.5%), Rajasthan (75%), Uttar Pradesh (68%) and Puducherry (55%).The approach is that oral ailment prevention and the advertising of oral health wishes to be integrated with continual disorder prevention and trendy health promotion because the dangers to fitness are linked (like tobacco intake and the usual of hygiene). But for powerful integration of oral disorder control with other persistent sicknesses, occurrence records along with chance because of various factors must be available. As Bangladesh and India percentage extra in not unusual, a common method may be advanced to have a look at periodontal diseases with the subcontinent's forte in thoughts. This could assist us utilizing the scarce assets to be had to fight and prevent periodontitis and its related tooth loss (Jacob, P.S., 2010).

Tanwir, Altamash, Gustafsson in their purpose was to survey the oral health of an adult populace, with unique reference to self-perceived oral troubles. Like many different developing countries, Pakistan is turning into increasingly more urbanized. Associated with adjustments in social structures are adjustments in disorder patterns and remedy needs. but little or no records is available about the oral health and dental treatment desires of urban Pakistanis. There are several published researches of the oral health of Pakistani youngsters. But according to their study dental caries affected 80% of the population and turned into said in 55% of youngsters aged 12-15 years and in 78% of adults. So far, there are no corresponding research of the oral reputation of the adult population in Pakistan. Facts approximately the character and severity of dental disorder within the population is an important foundation for planning and provision of dental care facilities and personnel resources. the prevailing examines become undertaken with the intention to accumulate preliminary facts about dental treatment desires in person Pakistanis. Greater than half the adults surveyed had dental troubles. In conclusion, this survey of a consultant pattern of adults from a disadvantaged district of Karachi disclosed an excessive frequency of oral health issues, along with ache and untreated dental disorder (Tanwir, F., Altamash, M. and Gustafsson, A., 2006).

Most studies estimating costs of periodontal care concentrate on the value of specific periodontal treatment modalities however not the value of managing the full spectrum of the disease itself. For every patient, the cost of every procedure received was imputed to feature up the total cost for the whole study duration. the total value of managing 165 periodontists' patients in one year other up to MYR 465,261 or €116, 315. In all, 2900 procedures were received by the 165 patients throughout the one-year duration. The patient value was other to the equation for each outpatient visit. Majority of treatment was the non-surgical dentistry treatment. the smallest amount range of procedures was for periodontal surgeries, followed by diagnostic procedures. this means that actual estimate of the cost-of-illness of periodontists is probably going to be above the one calculable during this study particularly for cases requiring dental rehabilitative treatment (Mohd-Dom, T., Ayob, R., Mohd-Nur, A., Abdul-Manaf, M.R., Ishak, N., Abdul-Muttalib, K., Aljunid, S.M., Ahmad-Yaziz, Y., Abdul-Aziz, H., Kasan, N. and Mohd-Asari, A.S., 2014).

Tanwir, Altamash, Gustafsson aimed to survey the oral health of a grownup populace, with special connection with behavior, information and attitudes to oral health and perceived remedy needs. In an earlier examine from their group observed that more than 1/2 of a person populace surveyed in Karachi had perceived oral health problems: the most well-known have been aesthetic issues, accompanied by ache and dental caries. except most cancers, betel nut chewing is likewise related to an excessive frequency of other smooth tissue lesions within the mouth. However regrettably, there are few reports inside the literature of the consequences of betel nut chewing on the 2 fundamental oral sicknesses, dental caries and periodontal disease. In well known, pan chewers had considerably greater oral troubles. Gingival bleeding and wallet have been considerably more common amongst pan customers at the same time as dental caries changed into suggested less frequently. The take a look at shown pan and betel nuts chewers periodontal circumstance turned into poor than non-customers and Betel nut chewers also have been proven to have extra calculus than non-chewers. the purpose they're identifying, maximum of the population had low oral fitness focus, which did now not appear to be related to income or education. progressed oral hygiene and regular dental checkups aren't a part of their life. thus, while it cannot provide records about

actual oral health popularity, it does describe perceived oral fitness problems, and for this reason, subjective treatment desires. A study shows that in the study populace, betel nut chewing, and oral hygiene frequency have a robust influence on perceived oral health, whilst cleansing method and sugar consumption do no longer associate (Tanwir, F., Altamash, M. and Gustafsson, A., 2008).

3 RESEARCH METHODOLOGY

3.1 Type of study:

A cross-sectional study will be conducted in the elderly population in an old people's home in Dhaka city.

3.2 Place of study:

The study will have carried out in an old people's home in Dhaka city, Bangladesh.

3.3 Study period:

From February 2018 to October 2018. A time schedule will be prepared at the beginning of the study in mind the different task that had to be completed within the time frame. Review of literature will be done in the first month. Research proposal develop, topic approval, questionnaire preparation and pre-testing of the questionnaire will also do during this time. The subsequent months will be used for data collection, analysis and interpretation of the results and report writing.

3.4 Study population and age:

The study was conducted in the elderly population aged 55 -77 years in an old people's home in Dhaka.

3.5 Sample size:

From 19th September till 29th September on multiple sittings, I was able to take only 22 interviews from the Old people's home in Dhaka, Bangladesh.

3.6 Sampling technique:

The sample will be collected by purposively and purposive random sampling technique.

3.7 Eligibility Criteria

3.7.1 Inclusion criteria:

I. Willing to participate in the study.
II. Who were physically fit and cooperative.

3.7.2 Exclusion criteria:

I. Those who cannot understand the nature purpose of the study

II. Those who were non-cooperative.

3.8 Data collection instrument:

- A semi structural questionnaire was prepared by English with the consideration of all variables of the study. Later, it was translated into Bangla language.
- Elderly were examined on ordinary chair under natural day light by a single calibrated examiner using a plane mouth mirror and CIP probe.
- A disinfectant (Dettol) solution was used for sterilization of used instruments.

3.9 Data processing & analysis:

Statistical Package for Social Science (SPSS) program version 22 was used for data analysis. Where mean and standard deviation was used for continuous data and frequency table for categorized data.

3.10 Data presentation and interpretation:

Data were presented in the form of tables and graphs. Descriptive statistics will be presented with frequency tables. Association was illustrated with cross tables and test of significance. Bar and pie charts were generated to illustrate descriptive statistics.

3.11 Data quality management:

The content validity of the research tool will be ensured by reviewing of the literature, consultation with concerned advisor and subject teachers. Pre-testing of the research tool will be conducted in Dhaka.

3.12 Ethical Consideration:

Formal approval was obtained from concerned authority. During data collection, the respondents were explained about the aim and objectives of the study. Informed written and verbal consents were taken from the respondents prior to data collection. Interviews were taken with strict privacy. There will be no potential risks that might cause any harm to study subject. They were ensured that their personal identity would be kept confidential and the data would be used only for study purpose. Moreover, participants can withdraw themselves at any stage of the study.

4 RESULTS/FINDINGS

This chapter presents the findings of the study obtained from analysis and interpretation of the data. The cross-sectional study was conducted to assess the knowledge, attitudes and practices of high elderly related to oral hygiene in an old people's home in Dhaka city. Data was collected by administering a questionnaire on 22 going elderly of an old people's home of Dhaka city. Data was analyzed by IBM SPSS version 22. The overall results of the study are presented in tabular, graphical and narrative form under the following main headings:

4.1. Social-demographic characteristics

4.2. Knowledge and Behavior/practice of the elderly

4.3. Information related to oral health condition

4.3. Direct observation findings

4.5. Information related to oral treatment costs

4.6. Association between the different variables.

4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS:

This section describes the key findings from the analysis. the findings have been presented in the form of texts and tables.

Background characteristics of elderly:

Figure 1 shows the distribution of the high going elderly by selected background characteristics. Most of the elderly belonged to the age group 65-66 years. Out of the 22 elderly, 45.5% (10 elderly) belongs to 65 years, 18.2% (4 elderly) were 61 years,13.6% (3 elderly) were 62 years and 9.1% (2 elderly) were 57 years of age. Only 1 (4.5%), 1 (4.5%), 1 (4.5%) elderly were in the 66, 67 & 77 years of age respectively. The mean and median age of the respondents was 63.87 & 65.00 years respectively.

Figure 1: Age distribution (%) of elderly by background characteristics

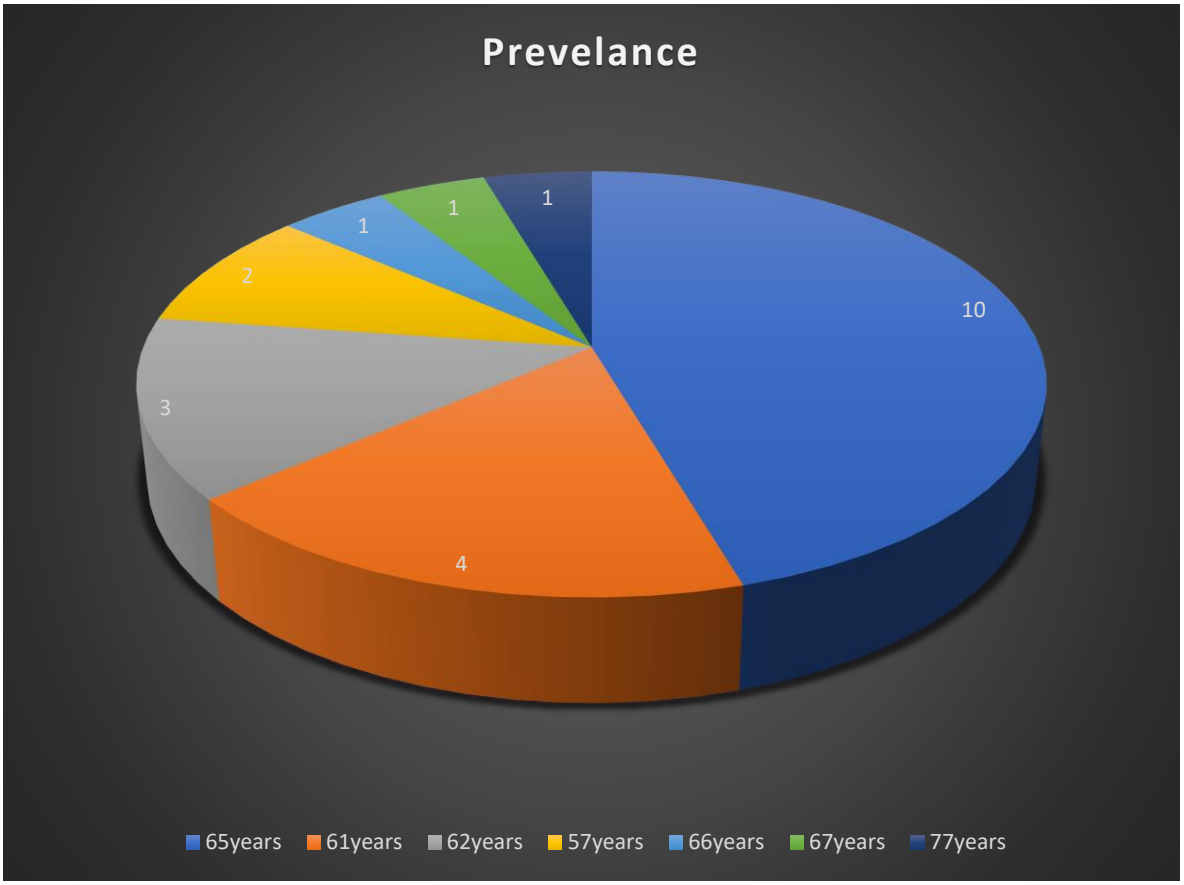


Table 1: Percentage distribution of elderly by sex

Background characteristic	Percentage	Number
Sex		
Men	36.4	8
Women	63.6	14
Total	**100**	**22**

Table 1 show the distribution of going elderly by sex respectively. Among 22 (100%) elderly taken from the old people's home named "Probin Bhobon".

Figure 2: Distribution of elderly by religion (n= 22)

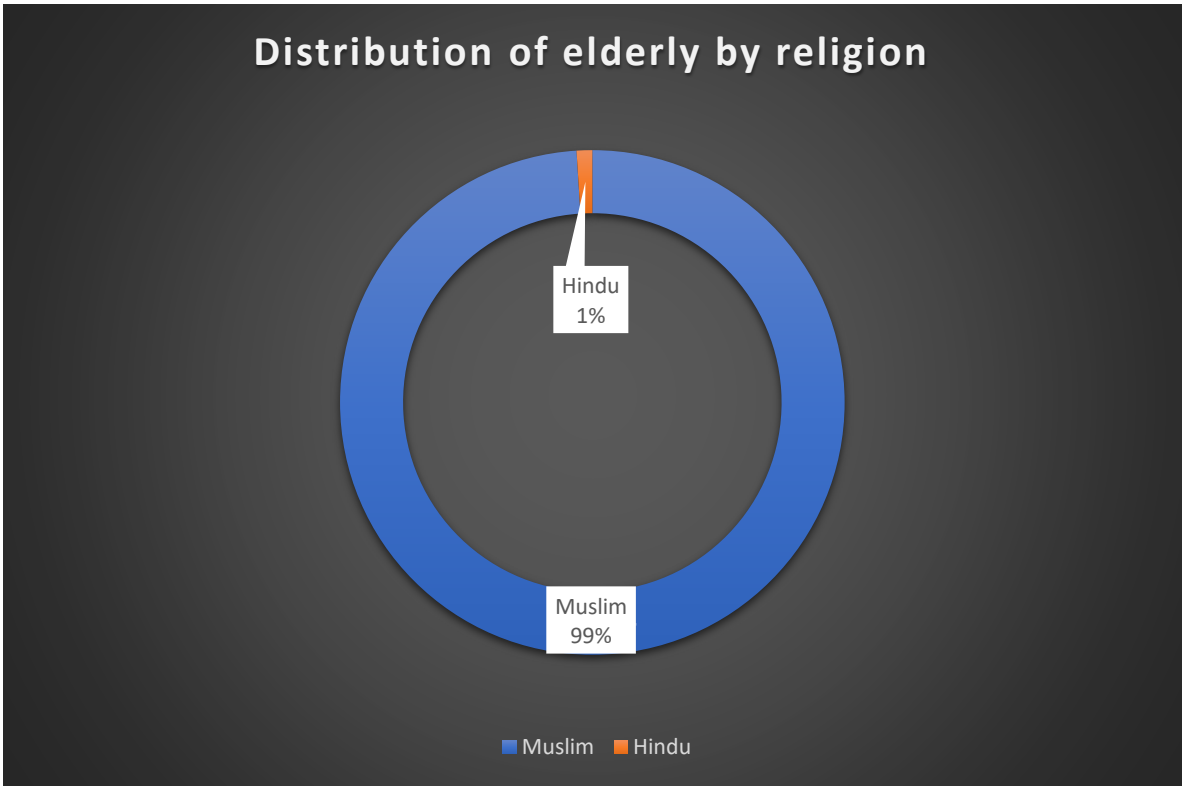


Figure 3 reveals that the distribution of elderly by their religion out of 22 elderly majority 99% were Muslim and only 1% was Hindu.

Figure 3: Distribution of elderly by educational status (n=22)

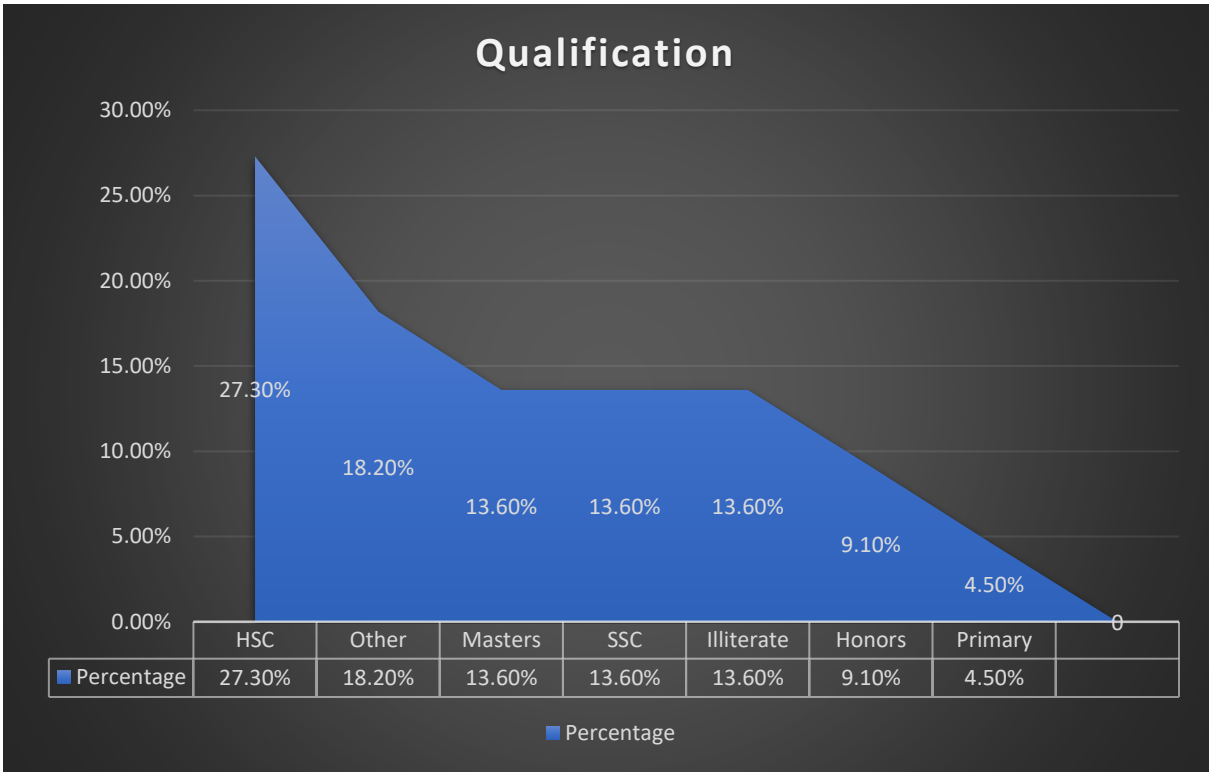


Figure 3, This analysis shows the elderly higher secondary education level rate is higher (27.3%), 18.2% elderly had completed other level education (like B.com, B.S.C., Madrasah & Medical). It is to be noted that percentage of secondary level education, masters & illiterate rates are same and only 9.1% elderly had completed honors and 4.5% elderly had passed their primary level education.

This analysis shows (Figure 4) most of the female participants were engaged with home maker whereas male participants were involved in different occupations like service holders, day labor, business, farmers, teacher etc. before their retirement.

Figure 4: Distribution of Female & Male by occupation (n=22)

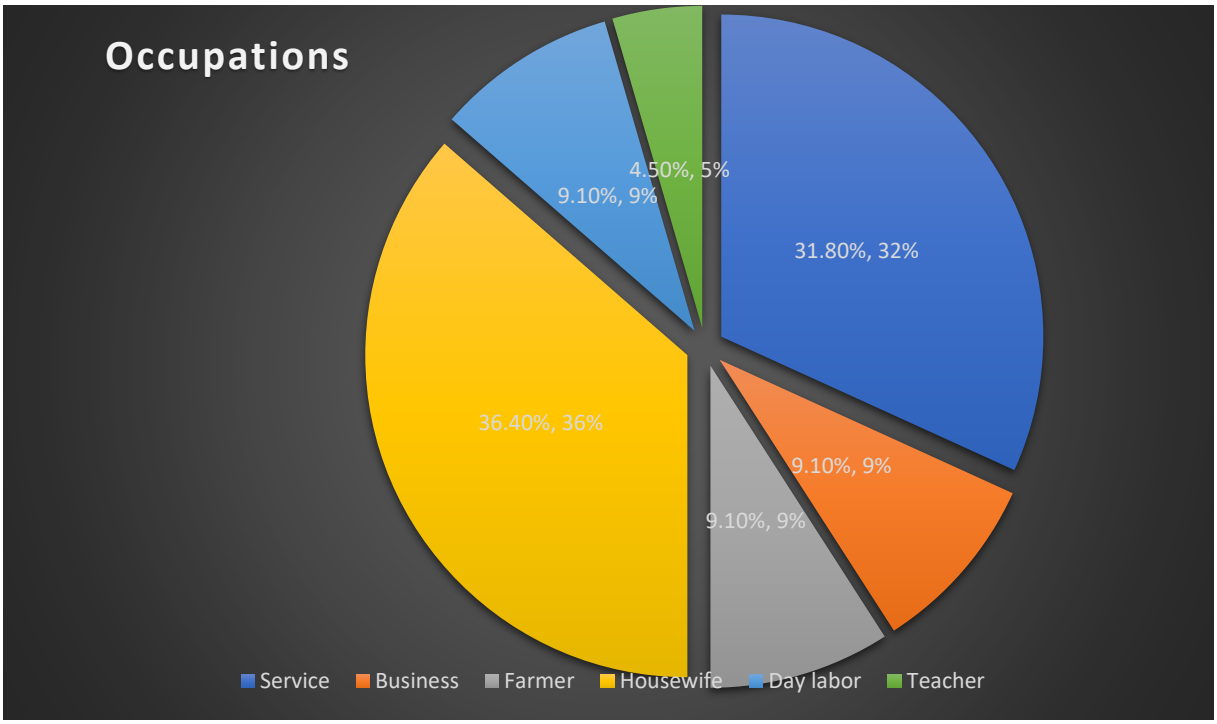


Figure 5: Distribution of elderly by number of family members (n=22)

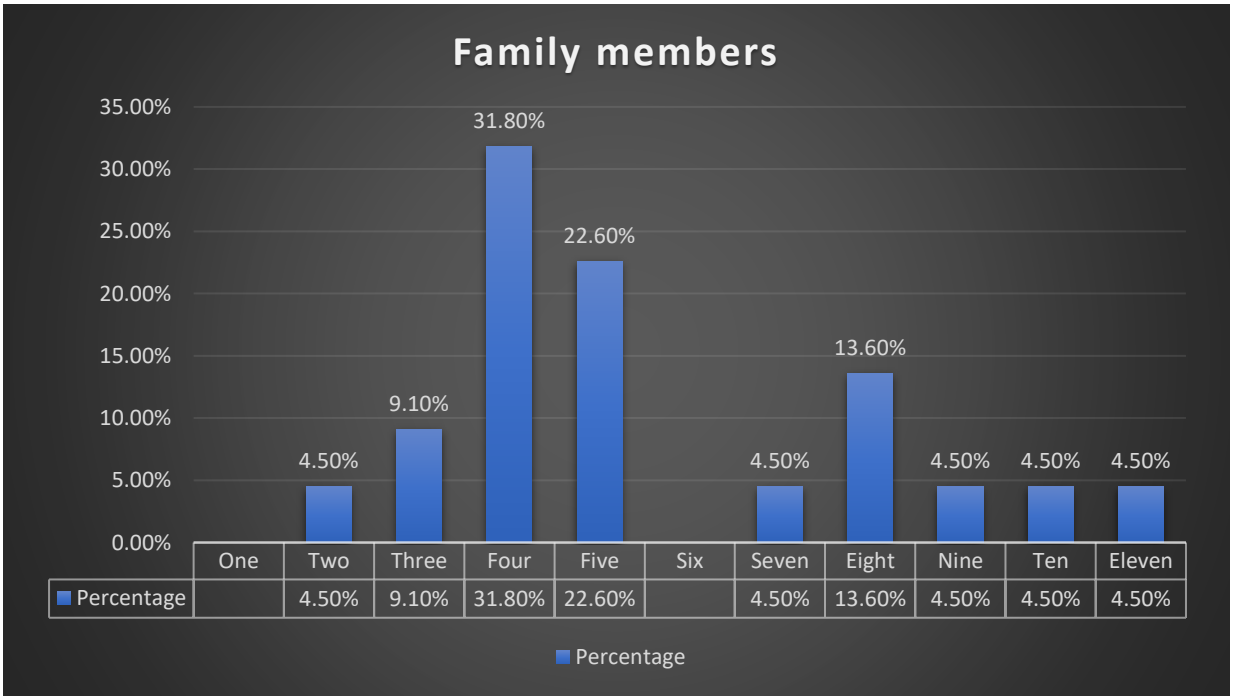
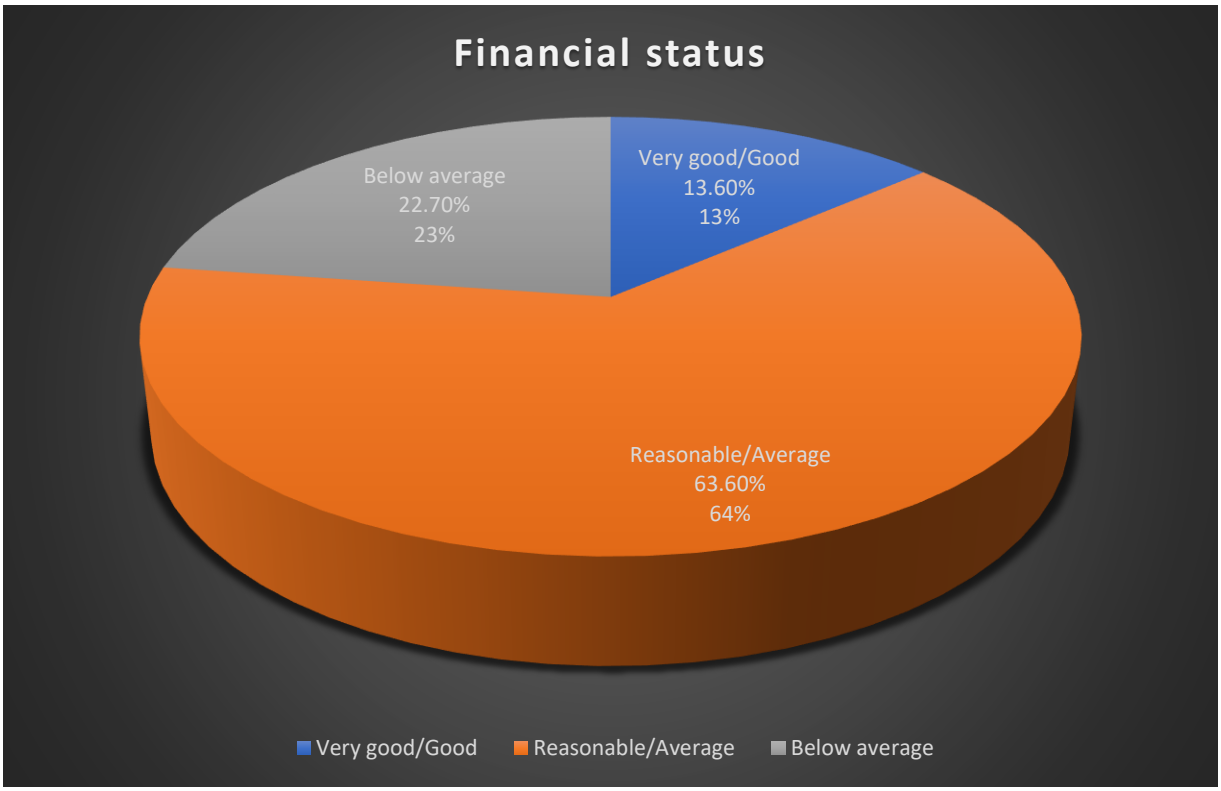


Figure 5 shows that 7 (31.8%) elderly were staying with 4 family members where as 5(22.7%) staying with 5 family members, 3(13.6%) staying with 8 family members, 2(9.1%) were staying with 3 family members. There were 5 other participants who used to live with 2, 7, 9, 10 & 11 family members individually and respectively.

Figure 6: Distribution of elderly by their financial status(n=22)



The analysis shows that the majority 63.3% elderly financial condition had average followed by 22.7% had poor, 13.6% financial status had good.

4.2 KNOWLEDGE AND BEHAVIOR/PRACTICE OF THE ELDERLY

At the British Dental Foundation, we understand the importance of the healthy mouth. A smile can be a great asset and because this is so important, it makes sense to give our teeth the best care with a simple yet effective oral hygiene routine. From brushing the first tooth, to the first trip to the dentist, a child's oral health plays a key part of their early year's wellbeing and improve quality of life later. It is very important that keep up a good oral hygiene routine to keep our teeth and gum healthy at home. Gum disease is the largest cause of the tooth loss in adults and it is a preventable condition and can be treated and kept under control with regular cleaning. It is easy to get our mouth clean and healthy. A simple routine of brushing for two minutes, twice a day with fluoride toothpaste and cleaning between the teeth, good eating habits, having sugary food and drinks less often and regular dental check-ups can help prevent most dental problems. Although most people brush regularly, many don't clean between their teeth and some people don't have regular dental check-ups. A few small changes in our daily routine can make a big difference in the long run. Daily dental care is up to us, and the main weapons are the toothbrush and interdental cleaning (cleaning between the teeth).

Figure 7: Percentage distribution of elderly by their knowledge about dental diseases

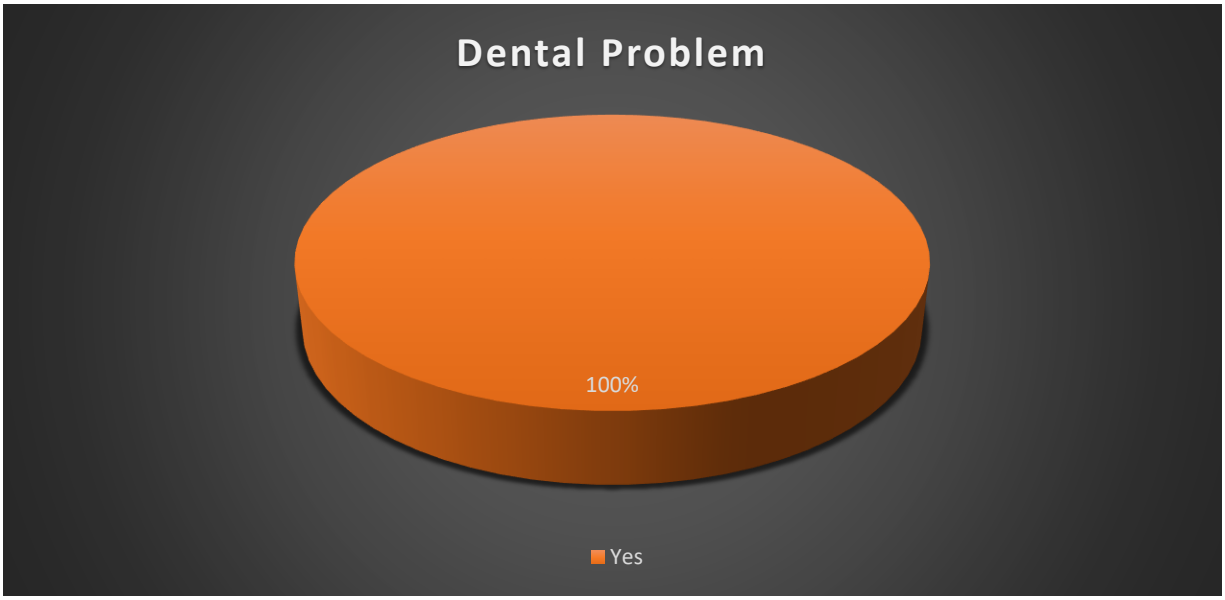


Figure 7 show the distribution of elderly by their knowledge out of 22 all elderly 100% were dental problem.

In this study, all the elderly (n=22) mention that they clean their teeth regularly.

Table 2 percentage distribution of elderly cleaning teeth and how do they clean (n=22)

Background Characteristic	Frequency	Percent	Valid Percent	Cumulative Percent
Clean teeth regularly				
Yes	18	81.8	81.8	81.8
No	4	18.2	18.2	18.2
How do they clean				
Clean his/herself	22	100.0	100.0	100.0
With supervision	0	0	0	0
Total	22	100.00	100.00	

Figure 8 show that 9(45%) elderly clean their teeth once in a day and 6(30%) elderly clean their teeth twice a day. 5(25%) clean his teeth more than twice in a day. They mention after every meal they brush their teeth.

Figure 8: Percentage distribution of the time of cleaning the teeth in a day (n=22)

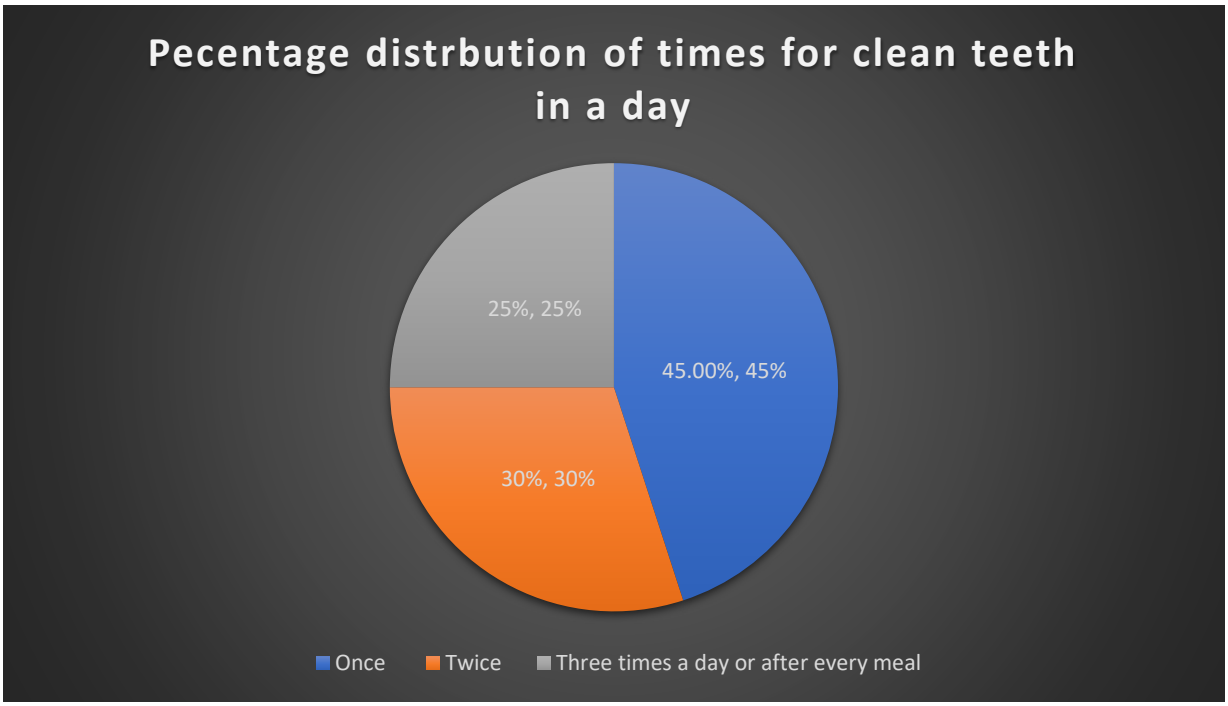


Figure 9: Percentage distribution of elderly by level of knowledge about cleaning time of their teeth(n=22)

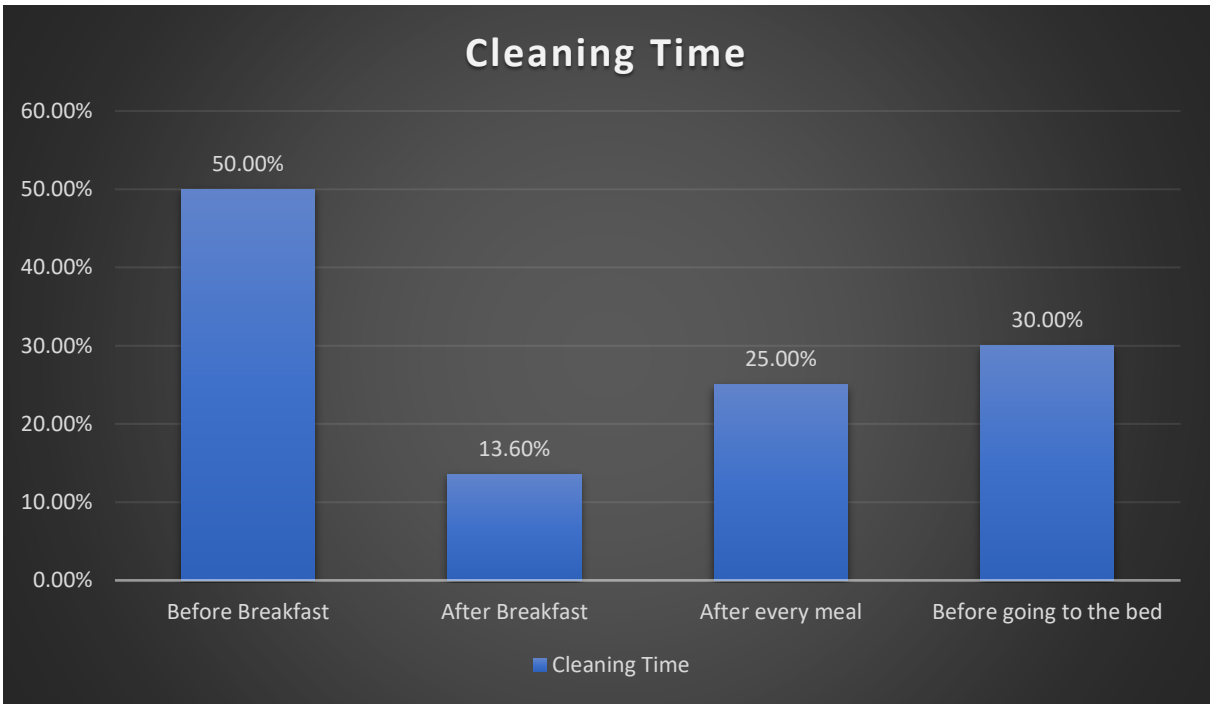


Figure 9 reveals that the distribution of elderly by their level of knowledge about cleaning time of their teeth. This analysis of level of knowledge of elderly shows that 50%elderly clean their teeth before breakfast followed by 30% elderly clean their teeth before going to bed, 25% elderly people clean their teeth after every meal and only 3 elderly clean their teeth after breakfast.

Figure 10: Percentage distribution of elderly by level of knowledge about things they use to clean their teeth(n=22)

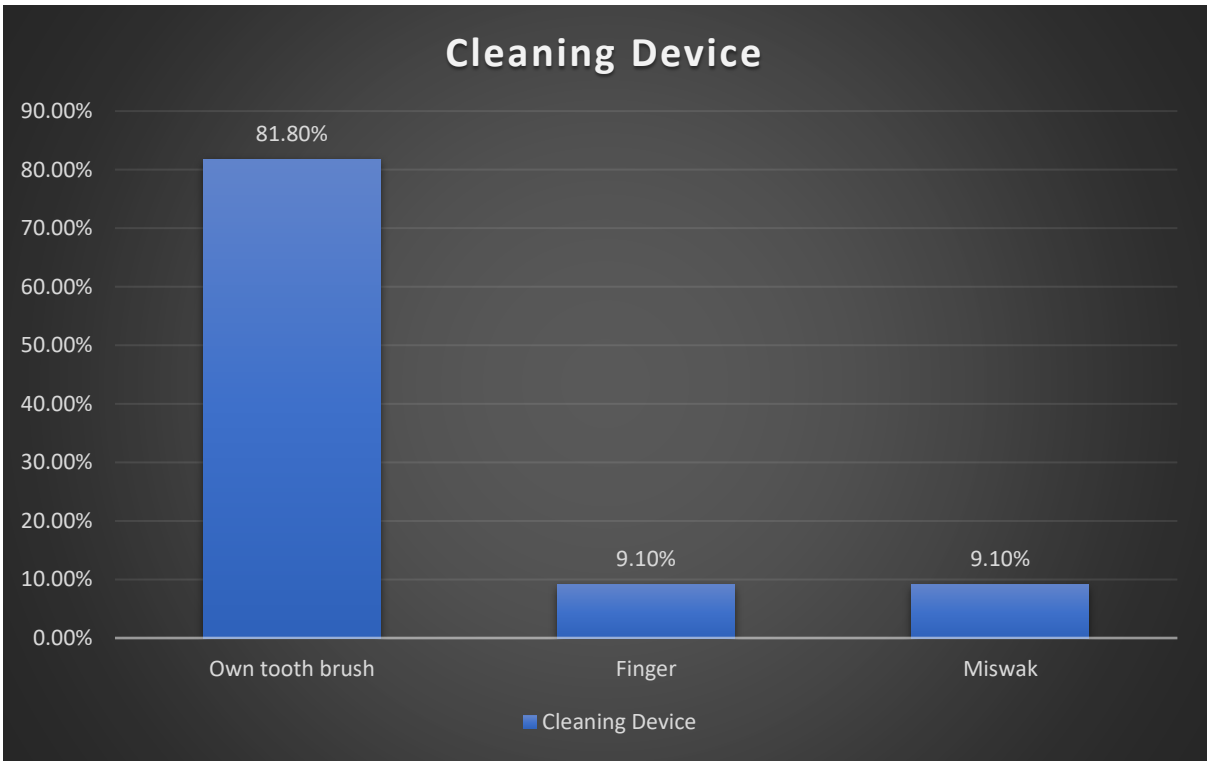


Figure 10 revels that the distribution of elderly by level of knowledge about things which they use to clean their teeth. This analysis shows that most of the elderly, 81.8% elderly clean their teeth by tooth brush followed by only 9.1% elderly clean their teeth by Miswak (Miswak means a piece of wooden stick) and fingers.

Figure 11: Percentage distribution of elderly by their knowledge about fluoride contains toothpaste they use to clean their teeth(n=22)

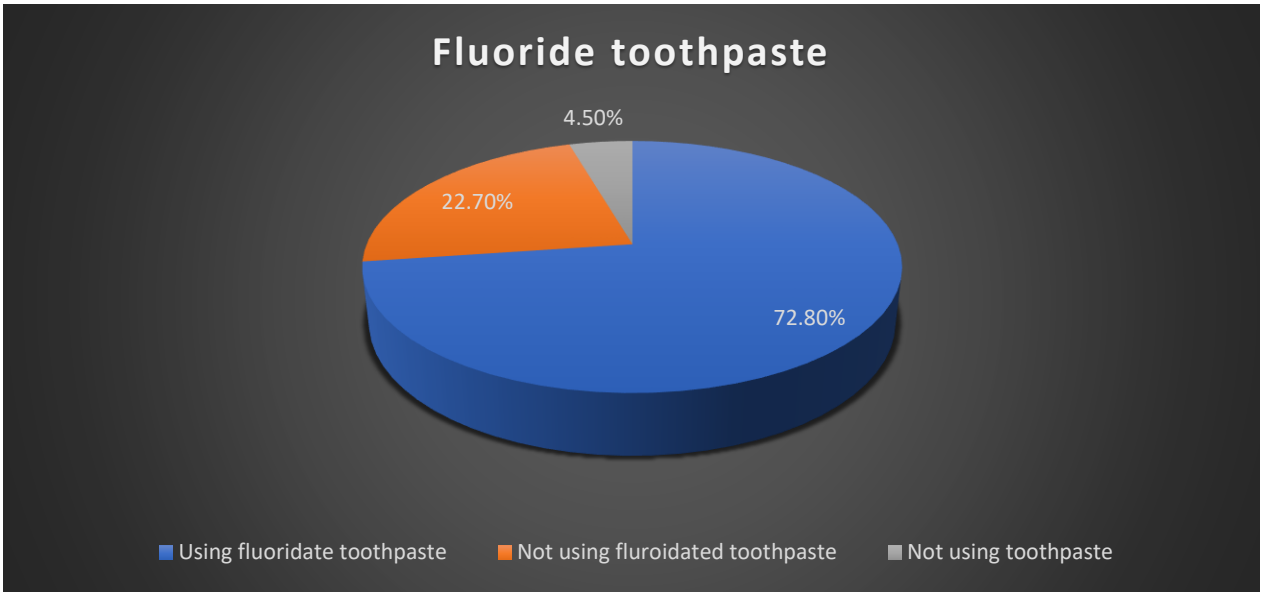


Figure 11 illustrates that 76.2% old people use fluoridated toothpaste while brushing followed by 22.7% elderly were not using toothpaste with contains fluoride for cleaning their teeth.

Figure 12: Distribution of elderly by level of knowledge about using dental floss/thread(n=22)

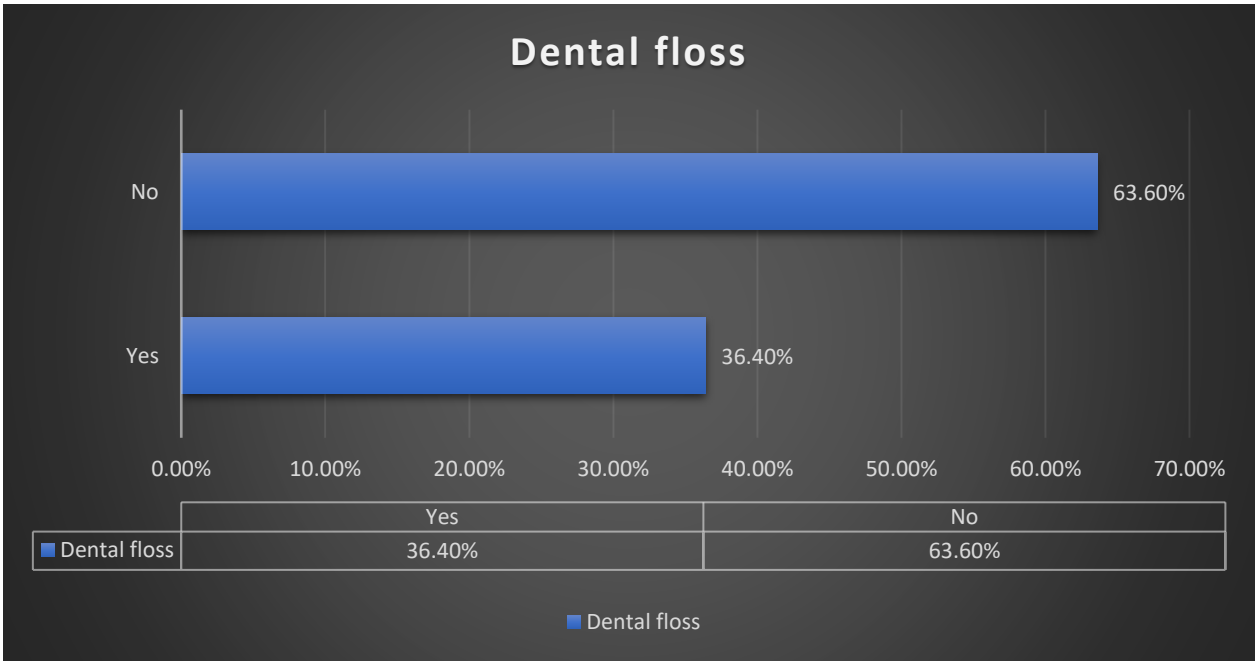


Figure 12 illustrates that 36.40% elderly use dental floss/thread for cleaning their teeth while 63.60% elderly don't use dental floss/thread for cleaning their teeth.

Figure 13: Distribution of elderly by their knowledge about consumptions of tobacco and chewing particles (like paan, betel and nuts)

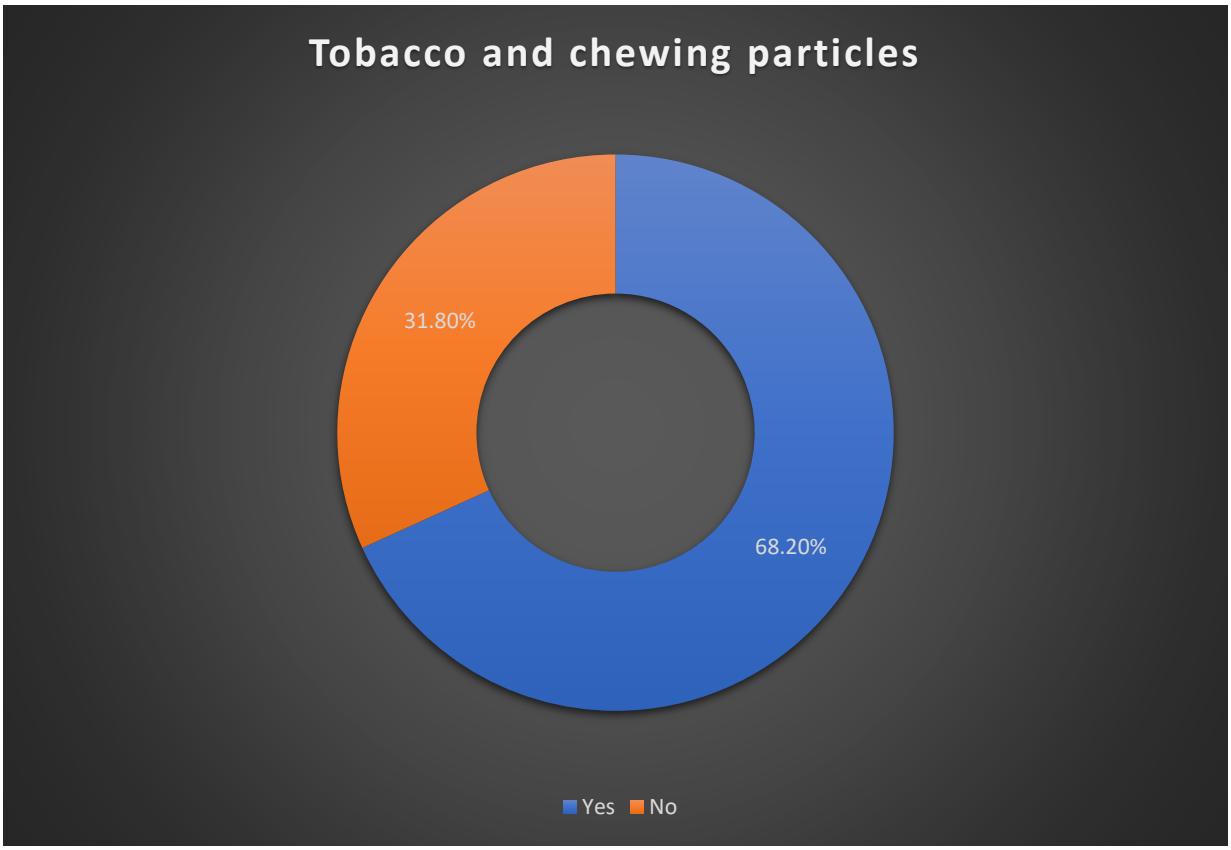


Figure 13 reveals that the percentage distribution of elderly by their knowledge about using tobacco and chewing particles (like Paan, Betel and Nuts). I found most of the elderly 15 (69.20%) taking chewing particles (specially paan and nuts) and tobacco (most of the male used tobacco than female) after every meal or sometimes any time in the day.7 (31.80%) elderly were not taking tobacco and chewing particles.

Table 3: Distribution of elderly by their knowledge about changing their brush (n=22).

Methods	Frequency	Percent	Valid Percent	Cumulative Percent
Every month	1	5.3	5.3	5.3
After every 2 months	5	26.3	26.3	26.3
After every 3-6 months	13	68.4	68.4	68.4
Total	19	100.0	100.0	

Table 3 illustrate that the distribution of elderly by their knowledge about when change their brush. This analysis shows that 68.4% elderly said that they change their brush after every 3-6 months followed by 26.3% said they change their brush after every 2 months and 5.3% mentioned that they change their brush every month. Only 3 elderly weren't used brush, they did miswak or finger to clean their teeth.

Figure 14: Percentage distribution of elderly by their knowledge about using how much toothpaste for brushing while they clean their teeth(n=22)

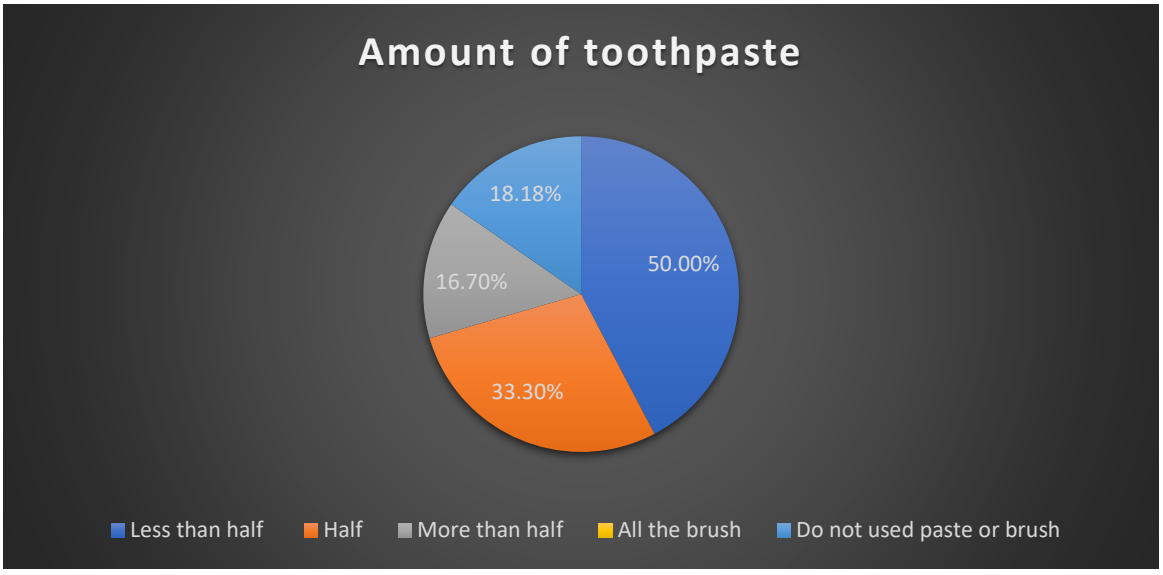


Figure 14 illustrates that 50% older people took toothpaste less than half on the brush for brushing their teeth while 33.30% elderly mentioned that they took toothpaste half on the brush for brushing their teeth respectively. Only 16.70% elderly took toothpaste more than half on their brush, but 18.18% elderly weren't used brush or paste, they mentioned that they clean their teeth with fingers or miswak.

Figure 15: Percentage distribution of elderly by their knowledge about dental plaque and/or calculus

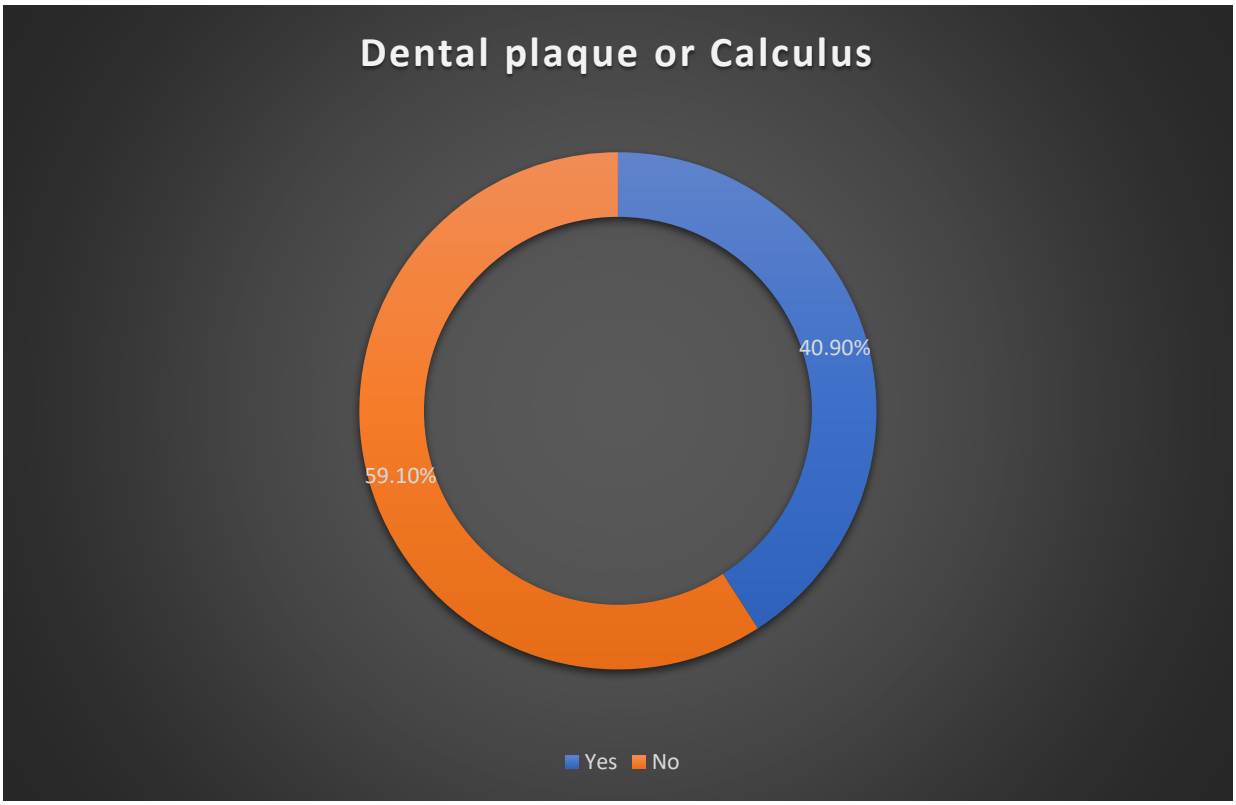


Figure 15 illustrate that the distribution of elderly by their knowledge about dental plaque or calculus. This analysis shows that 59.10% elderly said that they have no idea about plaque or calculus followed by 40.90% said they know about dental plaque and calculus.

Figure 16: Percentage distribution of elderly by their knowledge about tooth pain, what they think extraction is only possible treatment

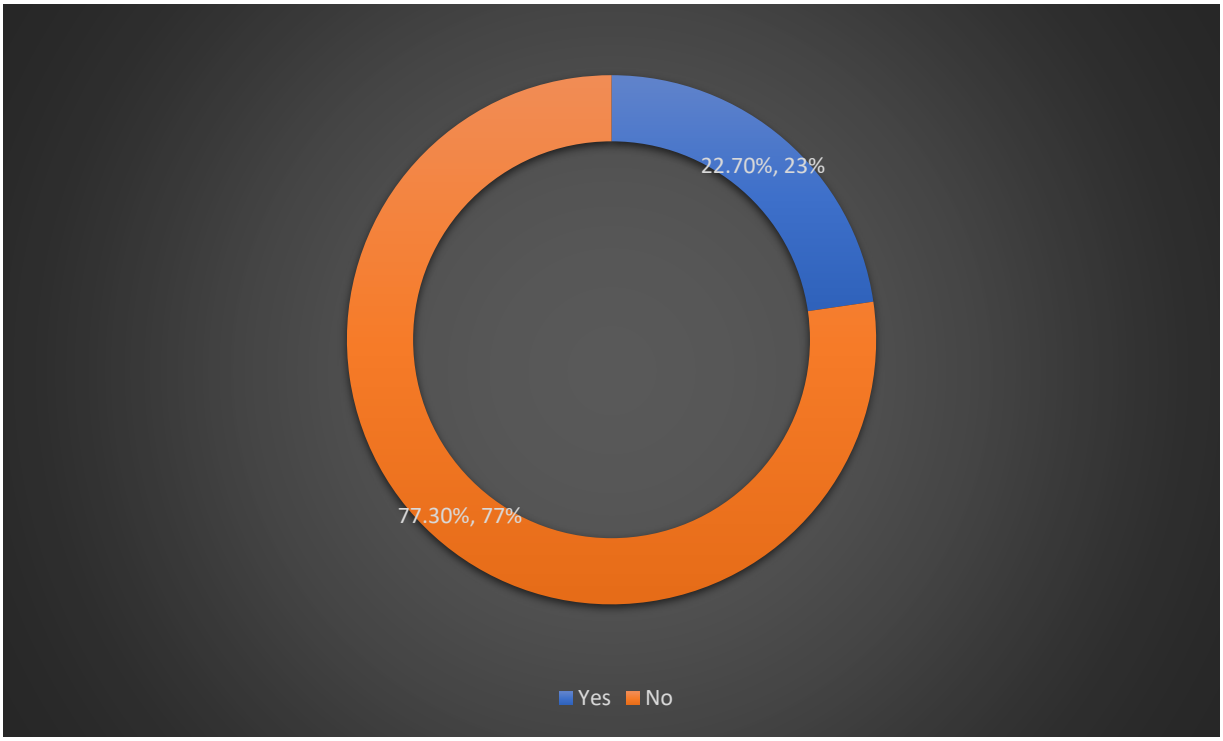


Figure 16 reveals that the percentage distribution of elderly by their knowledge about tooth pain what they think extraction is only possible treatment. I found that out of 22 elderly 17 elderly said no. The figure shows that only 22.70% elderly said yes.

4.3 INFORMATION RELATED TO ORAL HEALTH CONDITION (DIRECT OBSERVATION FINDINGS)

Figure 17: Percentage distribution of elderly by presence of bad odor problem

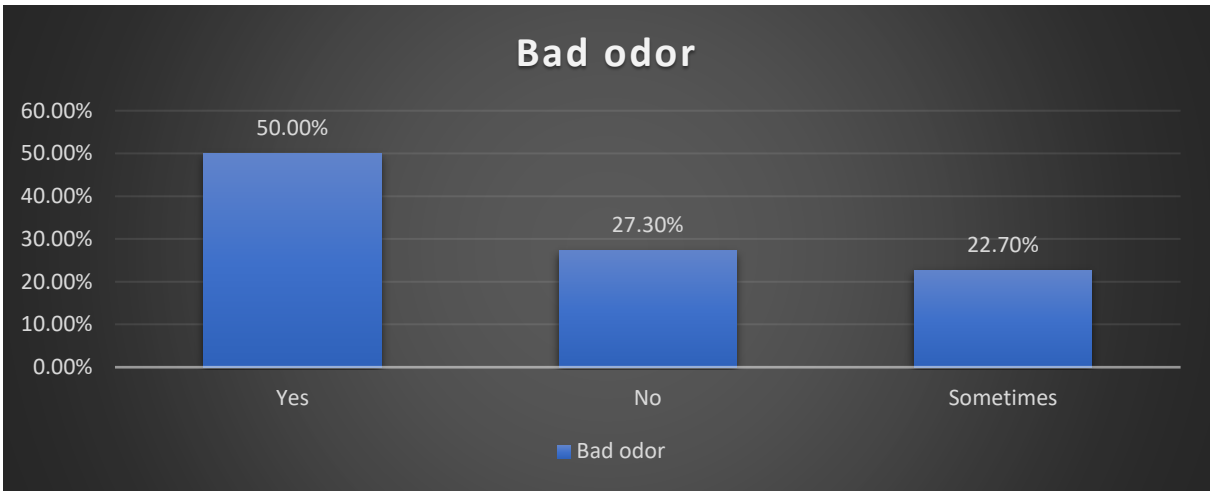


Figure 17 reveals that out of 22 elderly only 6 (27.30%) elderly have no bad odor problem. Total 11(50.00%) elderly have bad odor problem followed by 5 (22.70%) elderly have bad odor problem but they mentioned that sometimes they felt this problem.

Figure 18: Distribution of elderly by presence of dental caries (Decay)(n=22)

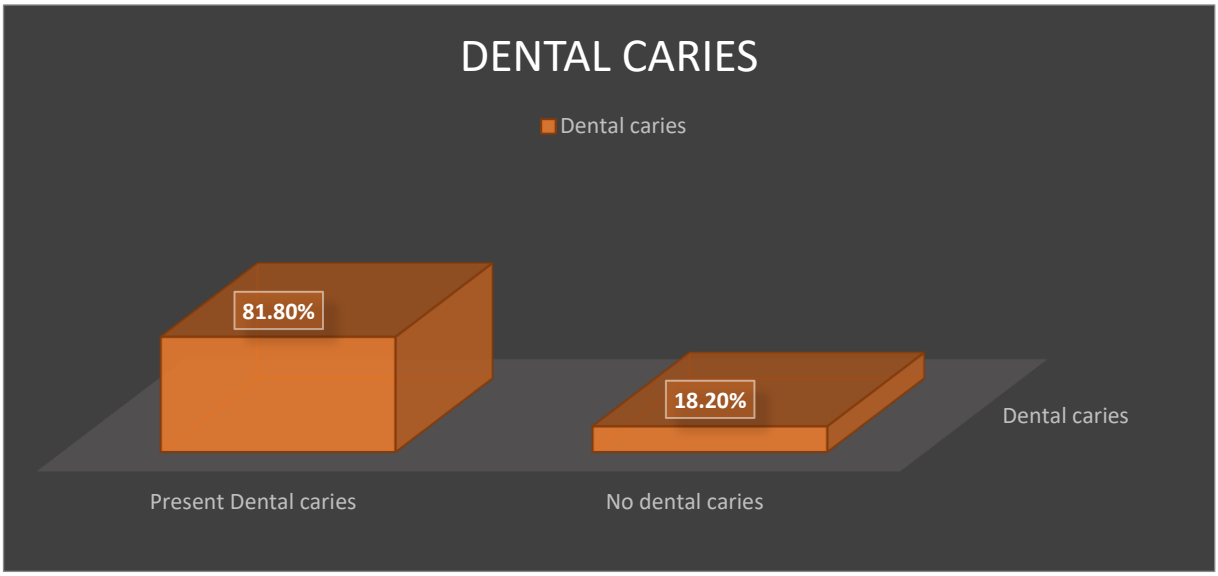


Figure 18 reveals that out of 22 elderly, 81.8% elderly have dental caries and only 18.20% elderly have no dental caries.

Figure 19: Distribution of elderly by presence of missing teeth

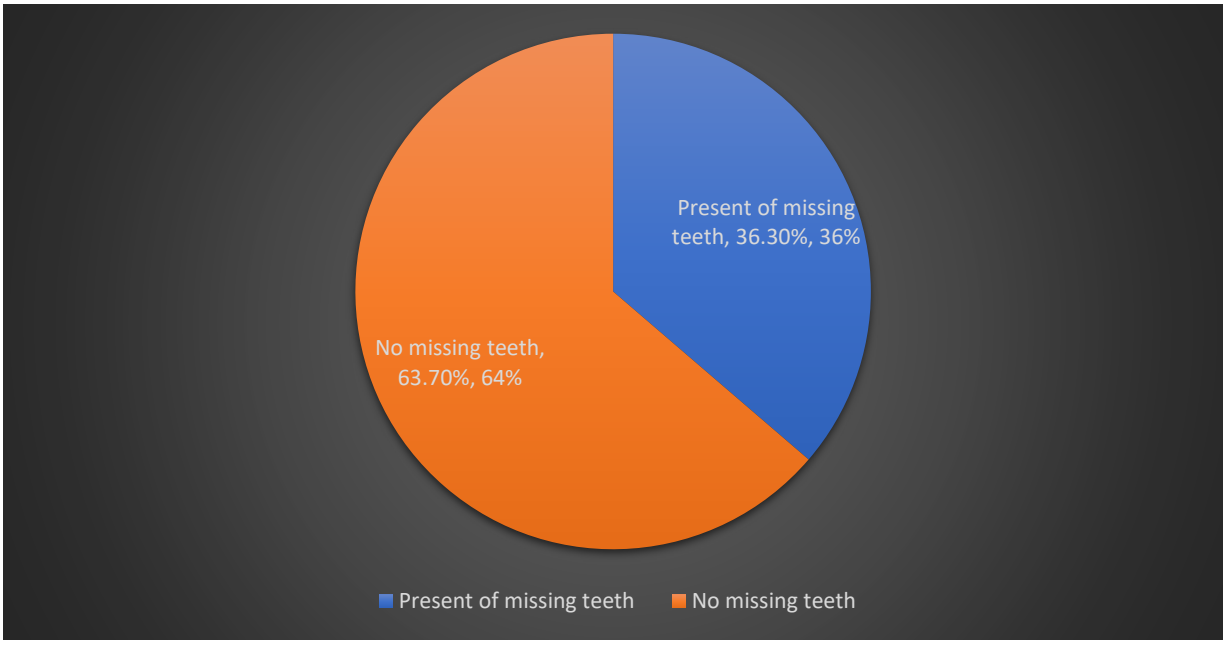


Figure 19 reveals that out of 22 elderly, 63.70% have no missing teeth and only 36.30% elderly have missing teeth.

Figure 20: Distribution of elderly by condition of gingiva

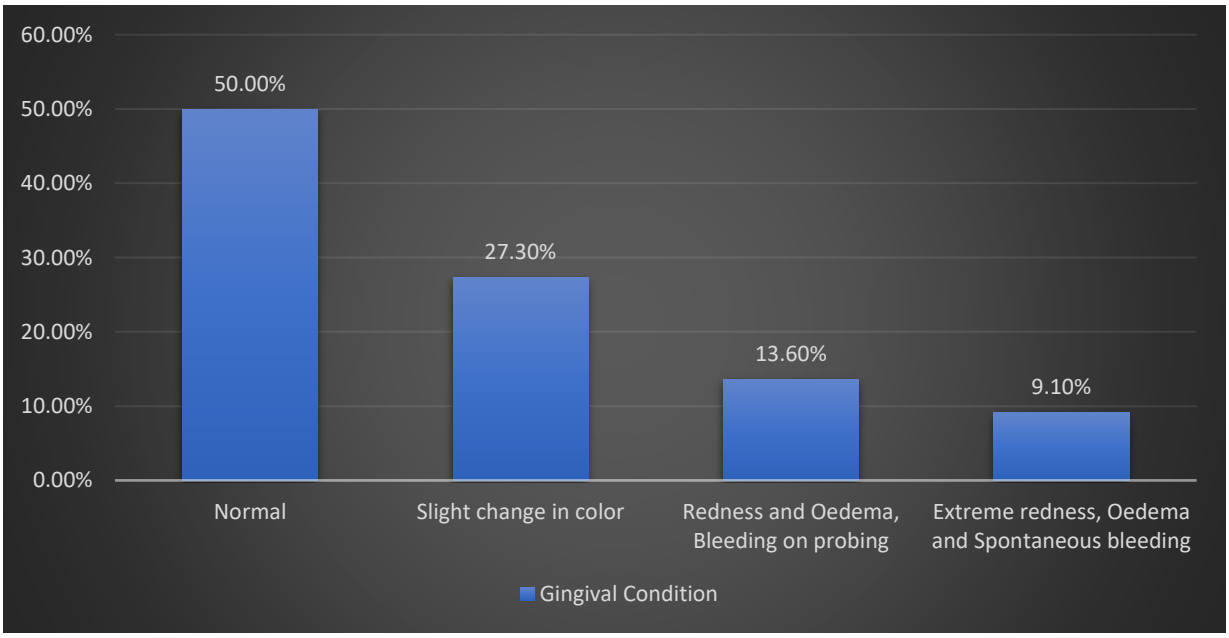


Figure 20 shows that out of 22 elderly, 50% elderly's gingival condition was normal while 27.30% elderly's gingiva was slightly in bad condition. But rest of elderly's gingiva condition was very bad.

Figure 21: Distribution of elderly by condition of DMFT (n=22)

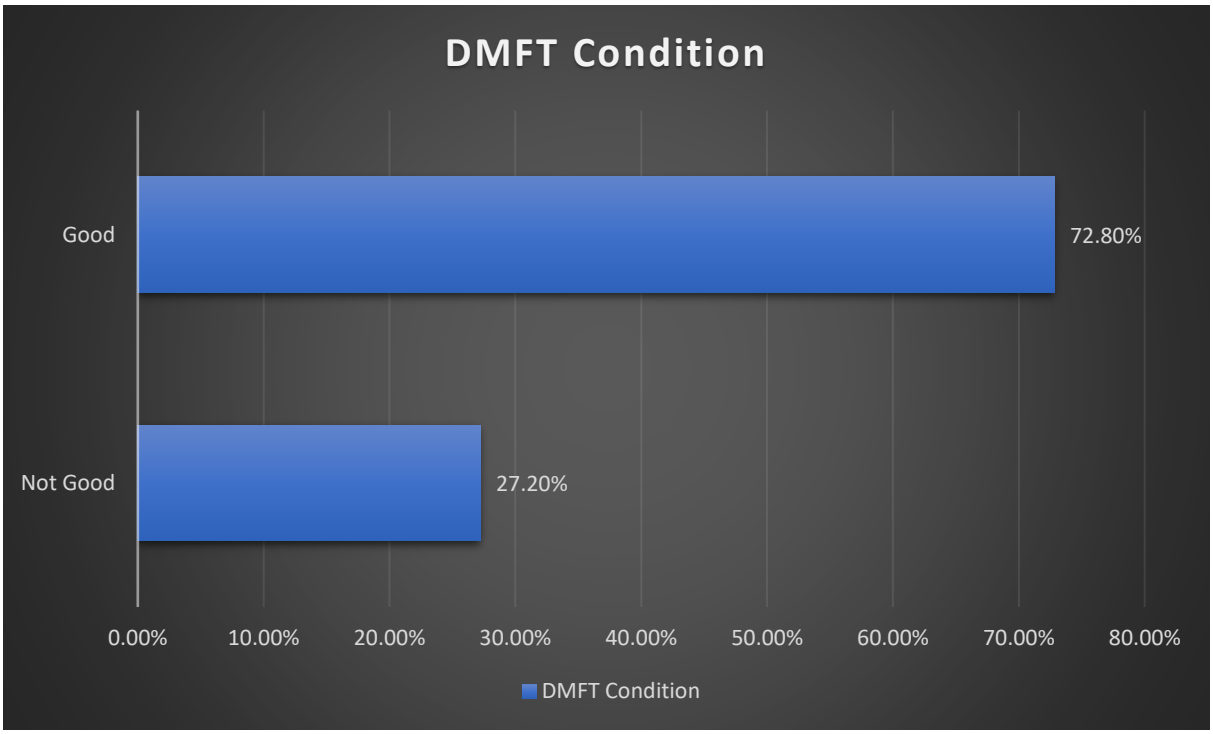


Figure 21 reveals the condition of DMFT means the combination of dental caries, missing teeth and filled in teeth. This analysis shows that out of 22 elderly, 72.80% elderly DMFT condition are good and 27.20% elderly DMFT condition are not good.

4.4 INFORMATION RELATED TO DENTAL TREATMENT COST

Figure 22: Distribution of elderly by the purpose of dental chamber/hospital visit

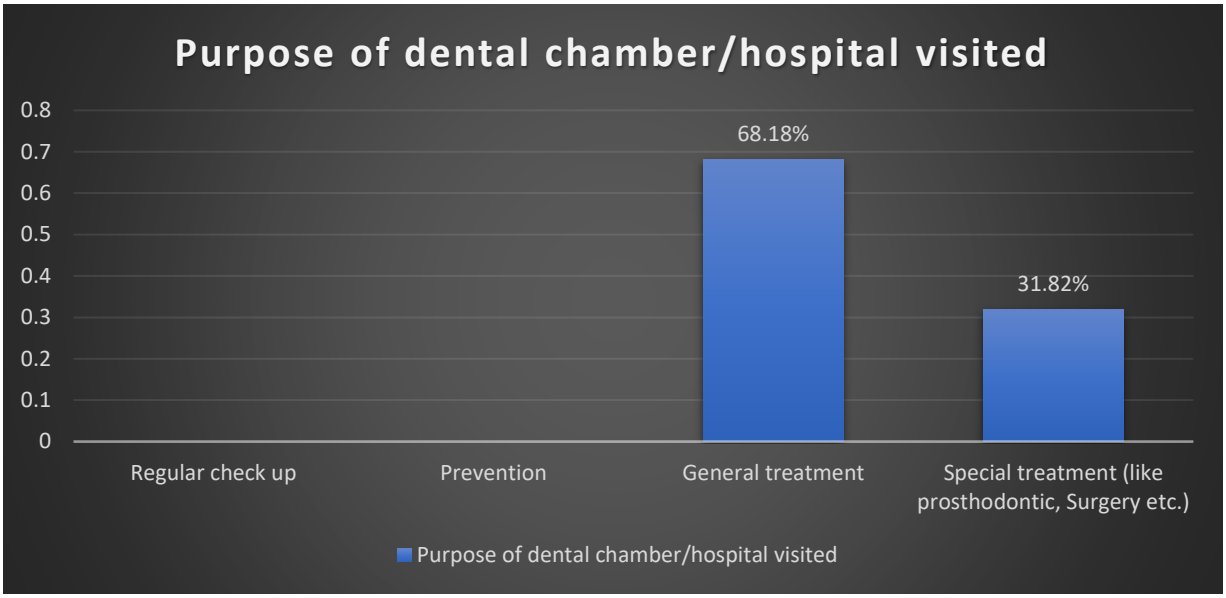


Figure 22 reveals that out of 22 elderly, 68.18% visited dental chamber or hospital only when they felt any tooth pain or sensitivity and 31.82% elderly visited dental chamber or hospital for prosthodontic treatment or the repairment of their old prosthesis.

Figure 23: Distribution of elderly by their knowledge about dental treatment cost

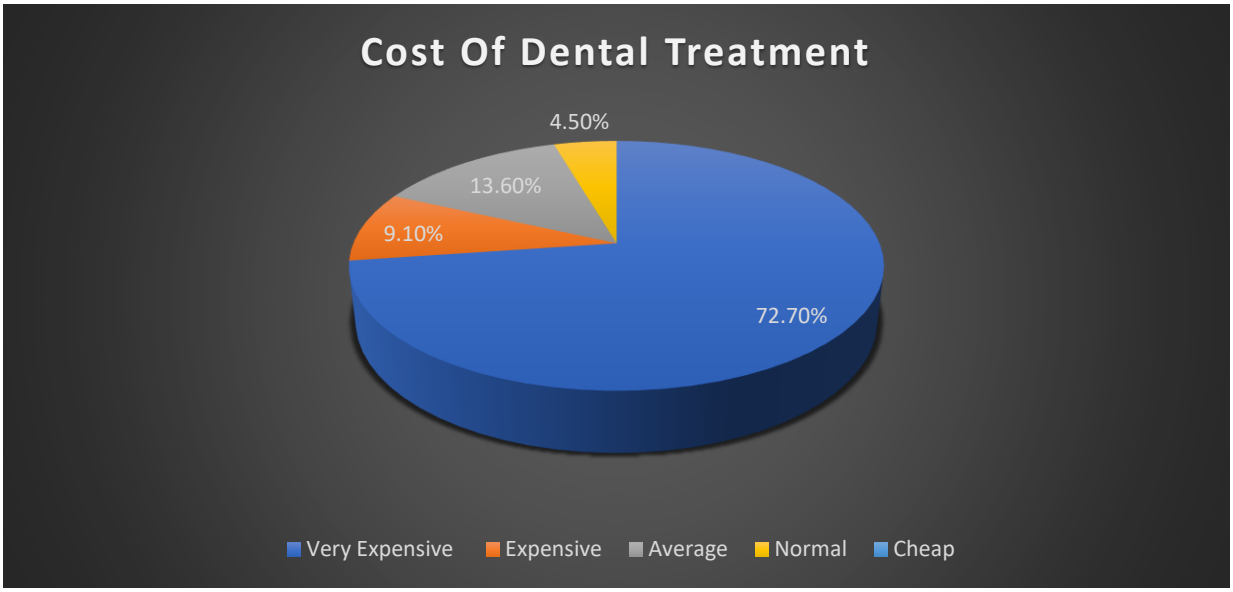


Figure 23 reveals that most of the elderly think the dental treatment cost is very high which is increasing day by day.

The analysis shows that the majority 72.70% elderly said that dental treatment cost is very expensive followed by 13.60% elderly said average and other had mixed opinions.

4.5 ASSOCIATION BETWEEN VARIABLES

Table 4: Relation between use of dental floss/thread for cleaning teeth and presence of dental caries

Characteristics	Dental Caries		Odds ratio	95% confidence interval	Sig. (2-tailed)
	Yes	No			
Use of dental floss/thread for cleaning teeth					
Yes	8	0	1.400	1.005 – 1.950	0.104
No	10	4			

Compared to the respondents who used dental floss/thread for cleaning their teeth, respondents who did not use dental floss are 1.40 times more likely to have poor knowledge on dental caries prevention which is statistically insignificant at 5% level of significance (95% CI: 1.0,1.9; p = 0.104).

Table 5: Relation between consumption of tobacco and chewing particles and presence of dental caries

Characteristics	Dental Caries		Odds ratio	95% confidence interval	Sig. (2-tailed)
	Yes	No			
Consumption of Tobacco and Chewing particles					
Yes	11	4	0.733	0.540 - 0.995	0.144
No	7	0			

Relationship between consumption of tobacco and chewing particles and dental caries shows that 68% elderly consuming tobacco and chewing particles and 81.8% elderly have dental caries whereas this relationship found statistically insignificant (95% CI: 0.54, 0.99; p=0.144) at 5%level of significance.

Table 6: Relationship between financial status and dental chamber/ hospital visit

Variables	**N**	**Correlation**	**Sig. (2-tailed)**
Financial status and Dental chamber/ hospital visit	22	-034	0.879

The relationship between financial status and dental chamber/ hospital visit shows that, the financial condition of 63.6% elderly people was average and 22.7% was poor. 68.18% elderly visited a dental chamber or hospital only when they had pain but none of them ever visited for a regular dental checkup. However, this relationship found statistically insignificant (p=0.879).

5 DISCUSSION AND CONCLUSION

Oral cleanliness is the act of keeping the mouth and teeth clean to forestall dental issues, most generally, dental pits, gum disease, and terrible breath. There are likewise oral pathologic conditions in which great oral cleanliness is required for recuperating and recovery of the oral tissues. These conditions included gum disease, periodontitis, and dental injury, for example, subluxation, oral growths, and following intelligence tooth extraction.

"While the eyes might be the window to the spirit, our mouth is a window to our body's wellbeing". The condition of your oral wellbeing can offer bunches of signs about your general wellbeing. Oral wellbeing might be characterized as a standard of the soundness of the oral and related tissues which empowers a person to eat, talk and associate without dynamic malady, distress or shame and which adds to general prosperity. Most oral maladies, as most perpetual pathologies when all is said in done, are specifically identified with the way of life. The oral ailment can be viewed as a general medical issue because of its high predominance and noteworthy social effect. The ceaseless oral infection ordinarily prompts tooth misfortune, and at times has physical, enthusiastic and monetary effects. These effects lead thus to lessened welfare and personal satisfaction. To limit these negative effects of constant oral infection, there is, therefore, an unmistakable need to lessen hurtful oral wellbeing propensities. Such a decrease can be accomplished through suitable wellbeing training programs.

To see the oral hygiene and oral health condition among high going elderly in Agargaon, Dhaka city a study was conducted among a total 22 selected elderly from probin nibash. Among the elderly of this current study 22 elderly taken from probin nibash. Out of 22 elderly, majority 99% were Muslim where only 1% was Hindu and most of the elderly, 81.8% elderly, clean their teeth by tooth brush only 9.1% elderly clean their teeth by Miswak and Finger.95% elderly use tooth paste but 76.2% elderly have no idea, is their toothpaste with or without fluoride followed by 23.8% elderly use toothpaste with fluoride for cleaning their teeth. Tanwir, Altamash, Gustafsson reported

that 80% of the population affected by dental caries and in 78% of adult. Out of the 994 participants belonging to the 35-45 age groups, 70% used tooth brush to clean their teeth. Most of the patients of that age group either use finger (27%) for the teeth cleaning only few used a miswak. Dali, M. and Laleet, R, found that study out of 1259 participants, 62.3% used tooth brush and tooth paste, 14.93 % used brush and tooth powder, 2.3% used finger and tooth paste 9.1% use finger and toot powder and 18.3% used miswak. In this study out of 22 elderly, 50% elderly's gingiva was normal condition while 27.30% elderly's gingiva was slightly in bad condition. But rest of the elderly's gingival condition was very bad which is similar to the study of P Shaju Jacob which was 17.5 % of 35-44years old and 21.4% in 65-74 years old (2004). We found in this survey that poor oral hygiene are the contributory factors of dental & periodontal Disease.

Out of 22 elderly, 100% elderly had suffered from dental problems and 68.18% elderly visited dental chamber or hospital only they felt any tooth pain or sensitivity and 31.82% elderly visited dental chamber or hospital only for special case (for example edentulous or prosthodontic treatment) which is like the study of Dali, M. and Laleet, R. they found 31.5% respondents revealed that they had experienced some type of dental problem but only 17.1% visited dental chamber or hospital and toothache was the main factor to visit the dental chamber or hospital.

In this study out of 22 elderly, 72.70% of the participant said that dental treatment is very expensive for them. According to Bangladesh Bureau of Statistic, the monthly household income was reported at 15,945.00 BDT and per capita reached 601.94 USD. According to the world bank collection, health expenditure per capita in Bangladesh was reported at 493 USD.

Study showed that dental diseases like caries and periodontitis are multifactorial. Ignorance, food habit, brushing technique, inadequate practice of oral hygiene are the main contributory factors for dental diseases. And as dental diseases are multifactorial, so single technique would not be enough for prevention. Proper dental treatment facilities are not available all over the country. So, simple preventive measure should be taken to maintaining good oral health as for example, maintenance of proper

brushing techniques and use of tooth brush and paste and brushing the teeth twice daily. And eating of less sticky food and avoidance of sugar containing food as far as possible and ringing of the mouth properly after taking sweet food is beneficial for patient. Vitamin 'C' containing sour foods and calcium containing foods are also helpful for the prevention of dental diseases.

Oral disease is a chronic disease and a major public health problem globally. Very few studies are available regarding the dental and oral health in elderly in Bangladesh. This is a descriptive cross-sectional study involving 22 participants, old people's home aged 55-77. The present study shows that an expansion in knowledge hazard factors for oral disease is important in oral wellbeing efforts that aim to promote healthy propensities; however, the adequacy of these campaigns will be constrained on the off chance that we don't consider key determinants of mentality and of the putting into routine with regards to these sound propensities (financial status, family and social environment, educational level, etc.) in the populace in which we are endeavoring to change behavior. During conducting this study, it was found that the respondents' family monthly income was average- low. The study also recommends that elderly would be the appropriate target group to receive the first organizes intervention leading towards improving the oral health status and reducing prevalence of oral diseases through increasing their attitude.

6 RECOMMENDATIONS

I. Health education program should be arranged regarding dental health problems specially to improve their personal oral and dental hygiene knowledge and practice.

II. Knowledge and attitude change are pre-requisite for behavioral change. Thus, for a good oral and health, the people need to be aware and knowledgeable.

III. Targeting the old generation specially the elderly in the society would help both directly and through their practices in the family.

IV. The massage should be disseminated using multiple media (radio, TV, print media, popular theater, folk songs etc.) to discourage people from harmful practices.

V. To minimize these negative impacts of chronic oral disease, there is thus a clear need to reduce harmful oral health habits. Such a reduction can be achieved through appropriate health education programs.

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8 APPENDIX

QUESTIONNAIRE

(English Language)

An analysis of oral health problems in a sample of Asian countries: a case study in the elderly population in an old people's home in Dhaka city, Bangladesh.

Identification	
District	
Upazilla:	
No. of question's sheet	
Date of interviwe	• Day: • Month: • Year:
Name of the interviewer :	

Informed Consent for Interview

(Verbal)

Written consent from interviewer:

(Greeting to all). I am Dr. Zinat Afsar, post graduate MPH student of Hamburg University of Applied Sciences of Germany, located in Hamburg. As a part of my course curriculum I have to conduct a research project. I am conducting a survey, which aims to assess the knowledge, attitudes and practices of elderly people to keep their teeth clean. Your opinion is very important to me. You have been selected for the interview from a sample of elderly of this Dhaka city. The interview will take around 20-30 minutes of your time. If you agree to participate, I will ask you some questions about your experience and opinion related to oral hygiene and keeping teeth clean.

I, the undersigned, certify that I have signed on this document willingly to participate in the said research work myself.

Participant

Name:

Signature:

Date:

Investigator Statement:

I, the undersigned, have explained to the respondent in a language that he/she understands the purposes and procedures of the interview and at the risks and benefits involved in the study. I also give him/her my contact number, in case he/she have any further questions. I confirm that the respondent voluntarily agreed to give an interview.

Investigator signature Date

SECTION 1: IDENTIFICATION

NO	QUESTION AND FILTERS	CODING CATEGORIES		SKIP
1	What is your name	Write name…….		
2	How old are you	By year…….	☐☐	
3	Gender	Male……1 Female……2	☐	
4	What is your religion	Islam……1 Hindu……...2 Christian……3 Buddhist……4 Other……...5	☐	

SECTION 2: BACKGROUND

NO	QUESTION AND FILTERS	CODING CATEGORIES		SKIP
5	What is your academic qualification	Illiterate……...1 Primary……2 S.S.C……3 H.S.C……4 Honors/Masters……5	☐	
6	What is your occupation?	Service……1 Business……2 Day labor……3 Farmer……4 Housewife……5 Teacher……6	☐	
7	How many members are there in your family?	Numbers of the member…….	☐	
8	Financial status	Very good or good……1 Reasonable/ average……2 Below average……3	☐	

SECTION 3: ORAL AND DENTAL HEALTH RELATED KNOWLEDGE

NO	QUESTION AND FILTERS	CODING CATEGORIES		SKIP
9	Do you think that you have dental diseases?	Yes……1 No……2 Don't know……3	☐	
10	Do you brush your teeth daily?	Yes……1 No……2	☐	
11	What device you used to clean your teeth?	Own tooth brush…...1 Partner/Family tooth brush……2 Fingers……3 Miswak……4 Other……5	☐	
12	How many times and when?	Once a day (Before breakfast) …….1 Twice a day (After breakfast & before going to bed) ……2 Three times a day or after every meal……3	☐	
13	How much toothpaste do you apply to a toothbrush?	Less than half……1 Half……2 More than half……3 All the brush……4	☐	
14	Do you use toothpaste that contains fluoride?	Yes……1 No……2 Don't know……3	☐	
15	How frequently you change your brush?	Every month ……1 After every 2 months……2 After every 3-6 months……3	☐	
16	Do you use dental floss/thread for tooth cleaning?	Yes……1 No……2	☐	
17	If your tooth is very painful do you think that the extraction is the only possible treatment?	Yes……1 No……2 Don't know……3	☐	

18	Do you know, what is Dental Plaque and Calculus?	Yes……1 No…….2		
19	Do you think that, tobacco and chewing particles (like paan, betel nut) are cause of periodontitis?	Yes……1 No…….2 Don't know……3	☐	

SECTION 4: ORAL HEALTH DISEASES RELATED INFORMATION (DIRECT OBSERVATION)

NO	QUESTION AND FILTERS	CODING CATEGORIES		SKIP
20	Is there present any decay teeth?	Yes……...1 No……..2	☐	
21	Is there present any missing (by extraction) teeth	Yes……...1 No……..2	☐	
22	What is the present condition of the participants gum?	Normal…….1 Slight change in color but no bleeding on probing…….2 Redness and oedema, bleeding on probing……...3 Marked redness and oedema, tendency to spontaneous bleeding on probing…….4	☐	
23	Do you feel that you have bad odor problem in your mouth?	Yes……1 No…….2 Don't know……3	☐	

SECTION 5: ORAL HEALTH PROBLEM/DISEASES AND DENTAL TREATMENT COST RELATED KNOWLEDGE

NO	QUESTION AND FILTERS	CODING CATEGORIES		SKIP
24	What was the purpose of your dental chamber/hospital visit?	Regular checkup……...1 Prevention……2 General Treatment…….3	☐	

		Special treatment (Prosthodontics eg.)……4		
25	What is your opinion about dental treatment cost?	Very expensive……1 Expensive……2 Average……3 Normal……4 Cheap……..5	☐	

THE END.