



Questionnaire Study on Impact of Diet and Lifestyle Trends in Oral Health among General Population

M.A.Eswaran(a), Yamini.V(b), Sandhya.D(C), Shyaame M(d), Srinath(e)

a) Professor, Department of prosthodontics, Thaimoogambigai dental college, DR.Mgr educational and research institute

b) CRI, Department of prosthodontics, Thaimoogambigai dental college, DR. Mgr educational and research institute

c) CRI, Department of prosthodontics, Thai moogambigai dental college, DR. Mgr educational and research institute

d) CRI, Department of prosthodontics, Thai moogambigai dental college, DR.Mgr educational and research institute

e) CRI, Department of prosthodontics, Thai moogambigai dental college, DR. mgr educational and research institute

Date of Submission: 20-11-2023

Date of Acceptance: 30-11-2023

ABSTRACT

Aim and objectives: To study on impact of diet and lifestyle trends in oral health among general population and create awareness regarding the same

Materials and methods: A cross-sectional questionnaire study was conducted among the general population. A questionnaire consisted of 22 open ended questions regarding the diet, personal and oral hygiene history. The questionnaire was circulated among participants as Google forms and responses were tabulated in spread sheets and evaluated for statistical analysis by IBM SPSS software. A comparative study was also done by Chi-square test to compare results between genders.

Results: 100 participants took part in the survey, males [41%] and females [59%], most of them being students [34%], followed by doctors [16%]. 53% of them were in the age group of 20-25 years. From the survey it was quite evident that diet habits and oral hygiene habits were satisfactory, but deleterious habits seemed to be prevalent among males

Conclusion: The current study implies that awareness on diet, oral hygiene should be given more importance and counselling to quit deleterious habits must be given for maintaining a healthy lifestyle

Keywords: Diet; Lifestyle; Oral Hygiene; Questionnaire Study; Oral Health

Nutbeam et al. in their study concluded that great oral hygiene habits is related to healthy diet, use of vitamins, and regular physical activity among adults.^{3,4} Lifestyle modification and changes in health-related behaviour would lower the unhealthy behaviour. Prochaska et al. said that with health-related behaviour change the unhealthy behaviour's such as excessive sugar in diet and smoking was reduced and there was an improvement in healthy behaviour's such as flossing and dental attendance. Several previously published reports have shown the relationship between various socio-demographic variables and oral health behaviour. Oral health effects and is affected by nutritional status and overall health status.⁵ Moreover, it has an impact on the quality of life and health outcomes of the patient. Numerous chronic disorders, including diabetes mellitus, cardiovascular disease, respiratory infections, and gastrointestinal pathologies are linked to poor dental health.

Furthermore, low birth weight and premature delivery have both been linked to poor oral health. On the other hand, healthy eating promotes the growth of strong teeth and gums and lowers the risk of several oral disorders. Deleterious habits like smoking, consumption of alcohol, chewing tobacco have a disastrous effect on one's health. Having these habits are potential to terminal diseases like cancer. Diet defines one's wellbeing and has a major role in defining oral health. Balanced diet balances life, the choice of meal and timing matters to daily lifestyle. Oral hygiene is a gate way to overall health. Healthy oral habits like brushing twice a day, flossing, using mouth-wash keeps away oral health problems keeps teeth and gingiva healthy and enhances a perfect smile.⁷ This study was done to study the

I. INTRODUCTION

Oral health is an essential part of general health and oral health should not be viewed separately. Unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene are all considered as risk factors for oral diseases.^{1,2}



impact of diet and lifestyle trends in oral health among general population in Tamil Nadu and create awareness on the same.

II. MATERIALS AND METHODS

A questionnaire study was conducted among random general population in Tamilnadu. A structured questionnaire was designed which included demographic details and 22 open-ended questions pertaining to diet history, personal habits and oral hygiene history. 100 people were included in the survey and informed consent was obtained from them. The study was conducted through Google forms by circulation in social media platforms. The data obtained was transferred to excel sheet, to analyse the data IBM SPSS was used. To compare proportions between groups Chi-Square test is applied, if any expected cell frequency is less than five then Fisher's exact test was used. Significance level is fixed as 5% ($\alpha = 0.05$).

INCLUSION CRITERIA

People with the age group of 17 to 60 years above who are willing to participate were included in this study.

EXCLUSION CRITERIA

Children with age group of below 17 years and people who not responded completely were excluded in this study.

III. RESULTS

Hundred participants participated in the study with females comprising of 59%. Youngest participant was 17 years of age and the eldest being 70 years of age with a mean age of 33 years. 53% of the participants were in the age group of 20-25 years. 57% of the participants were from Chennai. 34% of the participants were students followed by 16% were health care professionals. Diet history included 6 questions, it was analyzed that 73% of them had breakfast between 7am and 10am and 68% of the participants had 3 meals per day. 69% had lunch between 12pm to 2pm, 52% had dinner between 7 am and 9pm. 67% preferred having mixed diet. Coming to the personal habit history 75% of them did not have the habit of alcohol consumption, 85% did not have the habit of smoking. The participants who consume alcohol were occasional drinkers and smokers. 3% of them were daily smokers. 7% had the habit of tobacco chewing. In comparative analysis males had more deleterious habits than females, 43.7% of the males consumed alcohol when compared with 11% of females who consumed it. 31.7% of the males smoked cigarettes while only 2% of the females

were smokers. In oral hygiene history, 94% of them brushed using toothpaste and toothbrush. 53% brushed only once. 60% used medium bristles tooth brush. 66% brushed their teeth for 3 minutes. 36% used vertical-horizontal motions to brush their teeth. 36% had the habit of using toothpicks. Only 33% had the habit the habit of using mouthwash, only 5% used it regularly and 23% in diluted form. Comparative analysis by ChatGPT it was seen that both males and females brush their teeth twice a day. However, females tend to floss their teeth more frequently, doing it twice a day compared to once a day for males. Additionally, females use mouthwash on a daily basis, while males use it occasionally.

IV. DISCUSSION:

The main motive of this study was to determine the impact that influences dental health behaviours. We observed that lifestyles were significantly associated with dental behaviours. It was observed that students and health care professionals were more involved in our study, a significant number of females were homemakers.

Females enthusiastically participated in the survey. The majority of the population was on younger side 19-25 years of age. Your body restores its energy and nutrient reserves with breakfast. According to article reviewed by Dr. Nikita Toshi the best time to eat breakfast is between 7 am and 8am under no circumstances must be delayed beyond 10 AM.⁶ In our study 73% had breakfast in that time which was seen as a positive sign. The origin of the firm belief that eating three meals per day is the better healthy choice is a mix of cultural heritage and early epidemiological studies, 68% of them followed it in our study.

Studies have shown it is best to have dinner 2-3 hours before bed for digestion, our study showed majority of the participants having dinner between 7pm and 9 pm which was also seen as a healthy sign. The most significant risk factors for non-communicable illnesses, according to the 2002 World Health Report, are high blood pressure, high cholesterol, inadequate intake of fruits and vegetables, overweight and obesity, inactivity, and tobacco use. Oral diseases are thought to be influenced by a poor diet, tobacco use, dangerous alcohol consumption, and poor oral hygiene.¹⁰ According to Nutbeam et al., teenagers who practice good dental hygiene practices also consume a balanced diet, take vitamins, and engage in frequent physical exercise.

In our study very low number participants reported deleterious habits.⁴ Males seemed to have



this habit at higher rate than females in our study. It shows that males require tobacco cessation counselling and need to quit to alcohol for a better lifestyle. Tobacco and alcohol attribute to heart diseases, oral cancer etc. oral hygiene habits were seen to be satisfactory in our study with most of them using all the aids which include mouth-wash, floss, tooth brush and paste. Females had better oral

hygiene habits as it was also seen a similar study by Jagan Kumar Baskar doss et al which reported Better dental behaviour among females can be attributed to their enhanced aesthetic awareness asbehaviouramong females can be attributed to their enhanced aesthetic awareness as well as to their increasedsensitivity to discomfort and disease.

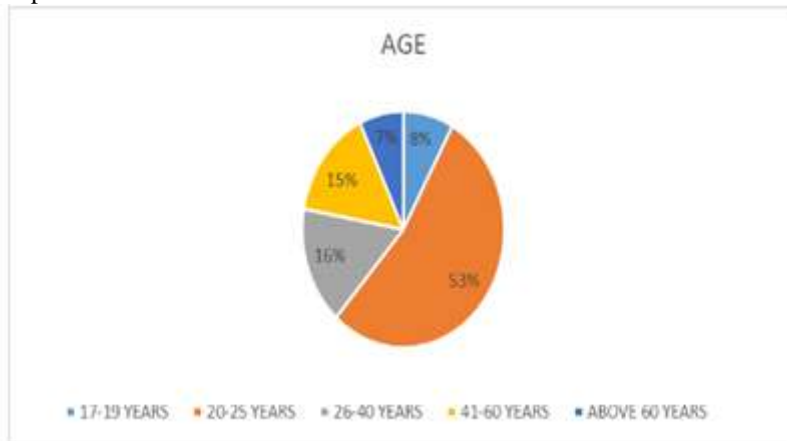


FIGURE:1

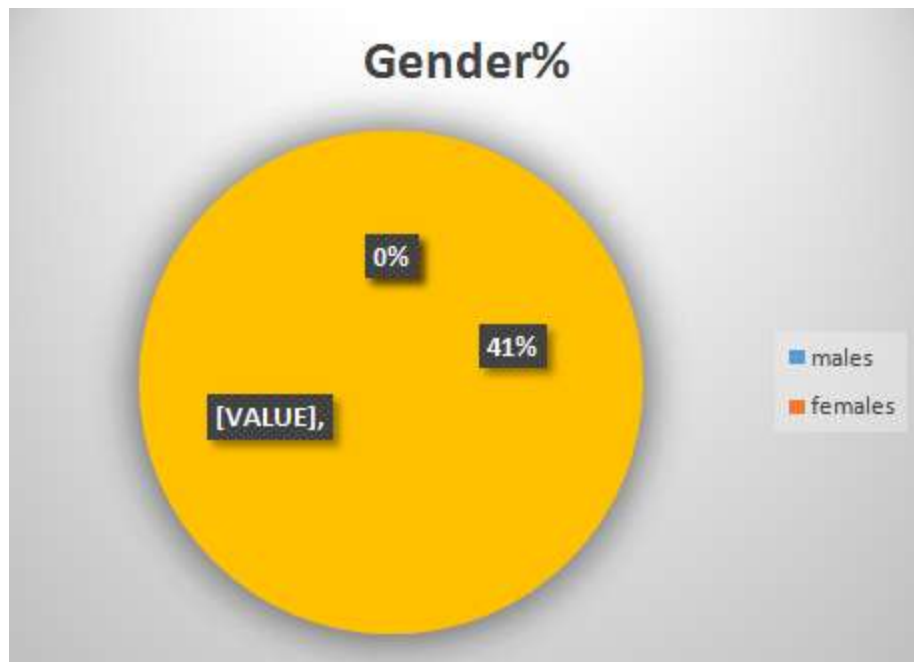


FIGURE:2

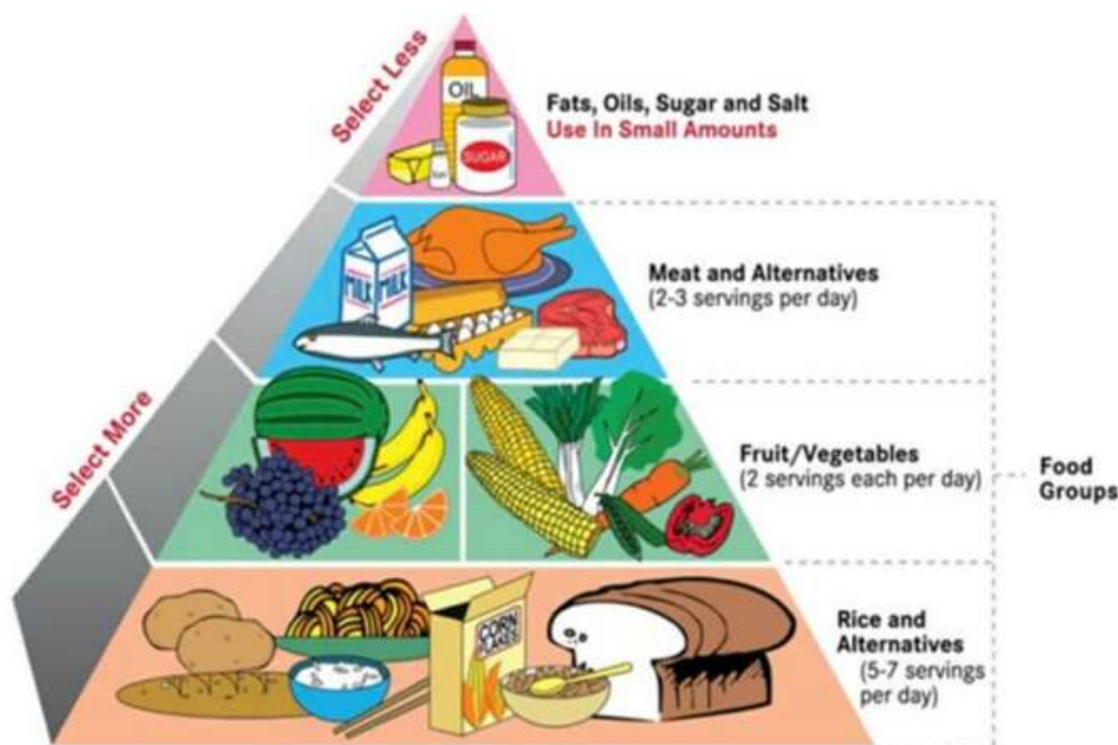


FIGURE:3

V. CONCLUSION

In our study showed that majority of them follow good dietary habits owing to their households and work. Very deflected and follow a sedentary diet pattern. Our study further concluded that deleterious habits seem to exist at a higher percentage in males, and counselling and awareness on effects and way of prevention must be addressed to that it can aid in a healthy lifestyle. Oral hygiene habits among the population studied were satisfactory, but better in females when compared to males. Dentists must further emphasize on oral hygiene aids for a good oral health.

REFERENCES

- [1]. Baskaradoss JK, Geevarghese A, Al-Mthen A, Al-Ghamdi H, Al-Haudayris R, Al-Obaidy S, Al-Saadi W. Influence of Lifestyle on Dental Health Behavior. *J Lifestyle Med.* 2019 Jul;9(2):119-124. doi: 10.15280/jlm.2019.9.2.119. Epub 2019 Jul 31. PMID: 31828030; PMCID: PMC6894442.
- [2]. Evans CA, Kleinman DV. The Surgeon General's report on America's oral health: opportunities for the dental profession. *J Am Dent Assoc.* 2000;131:1721-8. doi: 10.14219/jada.archive.2000.0118.
- [3]. Ezzati M, Lopez AD, Rodgers A, Vander Hoorn S, Murray CJ, Group CRAC. Selected major risk factors and global and regional burden of disease. *The Lancet.* 2002;360:1347-60. doi: 10.1016/S0140-6736(02)11403-6.
- [4]. Nutbeam D, Aar L, Catford J. Understanding childrens' health behaviour: the implications for health promotion for young people. *Soc Sci Med.* 1989;29:317-25. doi: 10.1016/0277-9536(89)90280-3.
- [5]. Badrasawi MMH, Hijeh NH, Amer RS, Allan RM, Altamimi M. Nutrition Awareness and Oral Health among Dental Patients in Palestine: A Cross-Sectional Study. *Int J Dent.* 2020 Feb 26;2020:3472753. doi: 10.1155/2020/3472753. PMID: 32184828; PMCID: PMC7061134.
- [6]. Arnadottir IB, Holbrook WP, Eggertsson H, Gudmundsdottir H, Jonsson SH, Gudlaugsson JO, Saemundsson SR, Eliasson ST, Agustsdottir H. Prevalence of dental erosion in children: a national survey. *Community Dent Oral Epidemiol.*
- [7]. Paoli A, Tinsley G, Bianco A, Moro T. The Influence of Meal Frequency and Timing on Health in Humans: The Role of Fasting. *Nutrients.* 2019 Mar



- 28;11(4):719. doi: 10.3390/nu11040719. PMID: 30925707; PMCID: PMC6520689.
- [8]. Kamoda T, Komatsuzaki A, Ono S, Tanaka S, Yokoi Y. Association between Drinking Habits and Oral Symptoms: A Cross-Sectional Study Based on Japanese National Statistical Data. *Int J Dent*. 2020 Dec 8;2020:8874587. doi: 10.1155/2020/8874587. PMID: 33488717; PMCID: PMC7787800.
- [9]. Sakki TK, Knuuttila ML, Vimpari SS, Kivela SL. Lifestyle, dental caries and number of teeth. *Community Dent Oral Epidemiol*. 1994;22:298–302. doi: 10.1111/j.1600-0528.1994.tb02055.x.
- [10]. Salari N, Darvishi N, Heydari M, Bokae S, Darvishi F, Mohammadi M. Global prevalence of cleft palate, cleft lip and cleft palate and lip: A comprehensive systematic review and meta-analysis. *J Stomatol Oral Maxillofac Surg*. 2021;S2468-7855(21)00118X. doi:10.1016/j.jormas.2021.05.008.
- [11]. Wu, Cz., Yuan, Yh., Liu, Hh. Et al. Epidemiologic relationship between periodontitis and type 2 diabetes mellitus. *BMC Oral Health* 20, 204 (2020)
- [12]. Isomaa R, Isomaa AL, Marttunen M, Kaltiala-Heino R, & Björkqvist K. The prevalence, incidence and development of eating disorders in Finnish adolescents: a two step 3 year follow-up study. *Eur Eat Disord Rev* 2009;17(3):199-207.
- [13]. American Psychiatric Association. *DSM-5 Development. Feeding and Eating Disorders*; 2013.
- [14]. Sakki TK, Knuuttila ML, Vimpari SS, Kivela SL. Lifestyle, dental caries and number of teeth. *Community Dent Oral Epidemiol*. 1994;22:298–302. doi: 10.1111/j.1600-0528.1994.tb02055.x.
- [15]. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Arlington:
- [16]. American Psychiatric Association. *Practice guideline for the treatment of patients with eating disorders (revision)*. *Am J Psychiatry* 2000; 157 (Suppl. 1): 1-39. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th Ed. DSM Library.

QUESTIONNAIRE

TABLE: 1

DIET HISTORY
1. At what time do you eat breakfast? Before 7am Between 7am to 10am After 10am No breakfast
2. How many meals do you eat per day? 1 2 3 4+
3. At what time do you eat lunch? Before 12pm Between 12pm to 2pm Post 2pm No lunch
4. At what time do you eat dinner? Before 7pm Between 7pm to 9pm Post 9pm No dinner
5. At what time do you eat dinner? Veg Non-veg Mixed
PERSONAL HABIT HISTORY
6. Do you have the habit of alcohol consumption?



YES NO
7.How often do you consume alcohol? DAILY WEEKLY MONTHLY NIL
8.Do you have the habit of smoking? YES NO
9.How often do you smoke? DAILY WEEKLY MONTHLY NIL
10.How many cigarettes do you smoke? Less than 1 pack per day More than 1 pack per day Less than 1 pack per week More than 1 pack per week Nil
11.Do you have the habit of chewing betel leaf/ tobacco? YES NO
ORAL HYGIENE HISTORY
12.Which among the following do you use for cleaning your teeth? Only tooth brush Tooth brush and tooth paste Only tooth powder Tooth brush and tooth powder
13.How many times do you brush your teeth in a day? Once Twice Thrice
14.What type of tooth brush bristles you use? Soft Medium Hard
15.How long do you brush your teeth? Less than a minute 3mins 5mins More than 5 minutes
16.In what method do you brush your front and back teeth? Vertical-horizontal Horizontal-vertical Circular Horizontal only Vertical only
17.Do you have the habit of using toothpicks? Yes No
18.How often do you use toothpicks? After every meal Occasionally Nil



19.Do you have the habit of using mouthwash? Yes No
20.How often do you use mouthwash? Regularly Occasionally Nil
21.How do you use your mouthwash? Concentrated form (without water) Diluted form (with water) Nil

TABLE:2

Student	34%
Housewife	10%
Business	6%
Driver	2%
Dentist/ doctor	16%
Software engineer	2%
Medical representative	1%
Retired officer	1%
Junior Administrative Officer	1%
Technician	1%
Plumber	1%
Mill worker	1%
Bank worker	1%
Data scientist	1%
Carpenter	1%
Electrician	1%
Engineer	3%
Sales	2%
Fisher man	1%
IT	6%
Nurse	2%
Musician	1%
Research Scholar	1%
Optometrist	1%
Educator	3%

TABLE:3

HABIT	MALES[N-41]	%	FEMALES[N-59]	%
SMOKING	13	31.7%	2	3%
ALCOHOL	18	43.9%	7	11%
BETAL NUT CHEWING	3	7%	4	6%