Prevalence of Lifestyle Diseases Among the Regular Eatery Consumers in Malappuram District

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Abstract—"Lifestyle diseases" termed primarily arises from the abnormal lifestyle of a person. An alarming number of diseases fall under this category. is one associated with the way a person or group of people lives. This group of diseases acts like a viscous cycle as one disease is interlinked with the other in the sense that one of them can perpetuate the other. The prevalence of lifestyle diseases is high and alarmingly increasing in Malappuram district of Kerala. So, the study aimed to find the prevalence of lifestyle disease related risk factors among the regular eaters of food from food outlets. The cross-sectional study was conducted in Manjeri municipality of Malappuram district. In this study the prevalence of life style diseases like diabetes, hypertension and cancer among regular eaters of food from food outlets was assessed. A questionnaire was made to elicit the demographic profile, health profile and other risk factors associated with lifestyle. The specific scores were given to responses of various questions, and data was analysed using SPSS software package. A total 200 subjects participated in the study. Among the selected samples, 69% of subjects had the incidence of lifestyle diseases. Among them majority belonged to the category of 40–49-years. 67% of them liked fast foods and remaining 33% subjects was not preferring fast food as an option Diabetes was the most prevalent lifestyle disease among the selected sample (49%of the samples) with 39% of the subjects affected with hypertension and 22.5% subjects with cancer. In terms of age category 20.6% of samples, below 30 years consumed hotel food regularly. Visited food outlets once in a week, 33.5% of sample visited twice in a week, 28.5%of subjects visited thrice in a week, 21.5% subjects visited more than three times in a week. The frequency of visits to the food outlets is strongly associated with the occurrence of the lifestyle diseases. Thus, it can be concluded that eating food away from home from food outlets would lead to the development of lifestyle diseases.

Index Terms— Food outlets, Lifestyle diseases, Prevalence, Regular eatery consumers.

I. INTRODUCTION

Lifestyle is a way used by people, groups and nations and is formed in specific geographical, economic, political, cultural and religious text. Lifestyle is referred to the characteristics of inhabitants of a region in special time and place. It includes day to day behaviours and functions of individuals in job, activities, fun and diet. In recent decades, life style as an important factor of health is more interested by researchers. According to WHO, 60% of related factors to individual health and quality of life are correlated to lifestyle. Millions of people follow an unhealthy lifestyle. Hence, they encounter illness, disability and even death *(Farhud, D.D; 2015)*.

Globally, chronic diseases account for about 41 million deaths each year, equivalent to 71% of all deaths *(World Health Organization, 2021)*.A report, jointly prepared by the World Health Organization (WHO) and the World Economic Forum, says India will incur an accumulated loss of $236.6 billion by 2015 on account of unhealthy lifestyles and faulty diet *(Sharma, M., & Majumdar, P.K ; 2009)*.

Kerala is the Indian state which is going through the epidemiological transition; it has the lowest prevalence of communicable diseases and has the highest prevalence of the non-communicable diseases (NCD). Kerala is the diabetic capital for India and even reports high cardiovascular mortality. Kerala also has the highest prevalence of overweight and obese women in the reproductive age group in India. Huge development has occurred in the study area in last few years and is going on. Overall improvement in socioeconomic status of people in area has resulted in changes in life style of people; increasing risk of life style diseases *(Mutalik A V, Pawar A T; 2018)*.

A study conducted in Malappuram district concluded that the social gradient in the prevalence of multi morbidity from lifestyle diseases was evident with higher prevalence in individuals with low educational attainment. Multi morbidity seriously impairs quality of life and increases treatment burden to the affected individuals *(Ismail S, Stanley A and Jeemon P; 2022)*.

Most of the life style diseases share common preventable risk factors such as tobacco, high alcohol consumption, anxiety, sedentary life style and obesity. Clustering of these risk factors significantly increases the risk of morbidity and mortality. All these risk factors are modifiable and early identification and management of risk factors can help to prevent and control non-communicable diseases.We should adopt a healthy life style in the families from an early age to combat these diseases with a proper balanced diet, regular exercise and physical activity, stress control and by giving due respect to biological clock *(Park K; 2015)*.

Diabetes has emerged as a major health challenge of the present centuary. The number of people with diabetes, especially Type 2 diabetes, is escalating exponentially around the world. The global prevalence of type 2 diabetes is 9.3% and in India, it stands 8.9 % (Report of International Diabetic Federation, 2019). High prevalence of diabetes was observed in Malappuram District. Central obesity and hypertension were the major risk factors to be modified in the study population through sustainable and effective lifestyle changes *(N.V. Fatimathu Zuhara, Dr. A. Thahira Banu, & Najma Chokli; 2019)*.In a review study conducted in Malappuram District on the prevalence of Diabetes Mellitus revealed a higher proportion of about 77% of the population in the District affected with Diabetes Mellitus *(Subha P P & Roy Scaria; 2020)*.

The burden of hypertension is progressively on a rise worldwide, with India contributing to a major part of this burden. The global burden of disease study reported that systolic blood pressure is associated with the highest burden among all risk factors, accounting for 10.2 million deaths and 208 million disability adjusted life years (DALYs) *(Saju MD, Allagh KP, Scaria L, Joseph S, Thiyagarajan JA; 2020)*. Hypertension is an important risk factor for chronic disease burden in India and a preventable contributor to death, disease, and disability. Nearly 10.8% of all deaths in India are attributed to hypertension. A cross-sectional survey was conducted among 540 adult participants in Malappuram District, Kerala, reported that, the most common pairs of coexisting chronic conditions reported in the study were hypertension and diabetes in males (66.7%) and females (70.8%) *(Ismail S, Stanley A and Jeemon P; 2022)*.

Cancer one of the most important causes of death worldwide and is the reason for death in economically developing and developed countries and the second most regular illness after cardiovascular disease *(Chelakkadan, Muhas & Naseef, Punnoth & Kuruniyan, Mohamed ; 2020)*.There are 913 male and 974 female cancer patients per million in Kerala. With a prevalence of 1.1%, there are more than 100,000 cancer patients in the prevalence annually in the state.The estimated incidence of cancer cases in Kerala for 2014 was 31,400 and the mortality associated with it was 13,816 *(Dinesh TA, Nair P, Abhijath V, Jha V, Aarthy K; 2020)*.

Incidence of lifestyle diseases is high in Kerala. As reported by department health and family welfare Kerala 27% of adult males and 19 % of adult females are diabetic and Kerala can be considered as the diabetic capital of India. Quality of diet is one of the major causes of lifestyle diseases. Hence the present study was designed to assess the prevalence of lifestyle diseases of regular eatery consumers from food outlets, in Malappuram district and to assess the incidence of diabetes, hypertension and cancer among regular eaters of food from food outlets.

II. MATERIALS AND METHODS

A cross-sectional study was conducted among the 200 participants in the Manjeri municipality of Malappuram district, Kerala. The selected municipality contains 32 wards. These wards contain 117 shops each shop contains an average of 47 bakery, and 70 hotels.Each ward of Manjeri municipality was considered as a cluster and each ward was selected randomly. The selected ward consists of 70 hotels and 47 bakery and hence 200 individuals were selected randomly. From the selected individuals, all the adult with the age of 20 year or above were include in the study until 200 sample were obtained. Non-residents, people who were cognitively impaired and bedridden, were excluded from the study.

A personal survey through an interview schedule was performed to study participants using convenient sampling. Participants were interviewed by using the pre-designed, pre-tested and structured questionnaire which included socio-demographic profile, dietary patterns, incidence of lifestyle diseases, family history, lifestyle, food habits, types of food outlet etc. of the selected samples. Behavioural aspect like self-reported smoking and alcohol use were obtained. Health statuses were documented based on self-reports of diabetes, hypertension, and cancer diseases.

III. RESULTS AND DISCUSSION

The analytic sample comprised 200 participants reported with prevalence of lifestyle diseases. Results are presented by the prevalence of lifestyle diseases, the type of lifestyle diseases affected with which is having a correlation with the frequency of visit of these participants to consume food from food outlets.

While assessing the prevalence of lifestyle diseases among regular eatery consumers, 69% of subjects had the prevalence of lifestyle diseases and the rest 31% of the participants none of the disease was identified (Figure 1).
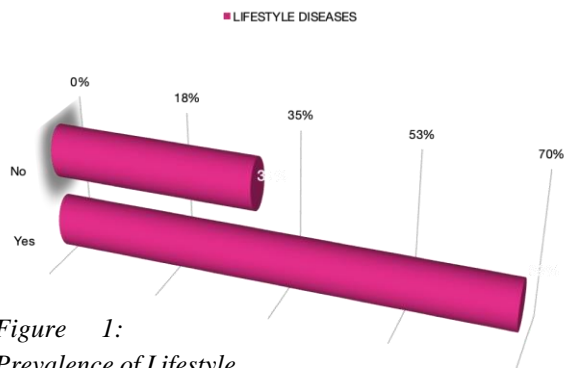

Figure 1: Prevalence of Lifestyle Diseases

Non-communicable diseases (NCDs) are increased day by day in low middle-income countries (LMIC) because of changing of lifestyle with increasing urbanisation, economic development and globalisation. Unhealthy dietary patterns also have negative environmental impacts on climate change *(Anand SS, Hawkes C, De Souza RJ, Mente A, Deghan M, Nugent R, et al; 2015).*

Life Style Diseases		Number (N=200)	Percentage (%) (N=200)
Diabetes	Yes	98	49
	No	102	51
HyperTension	Yes	78	39
	No	122	61
Cancer	Yes	45	22.5
	No	155	77.5

The below *Table 1* describes the types of lifestyle diseases prevalent among the selected samples in the study. As per the table, Diabetes was the most prevalent lifestyle disease among the selected sample. Around 49% of the total samples were prevalent with diabetes and 39% of the subjects with hypertension followed by 22.5% subjects with cancer.

Table 1: Type of Life Style Diseases prevalent among the selected samples

Numerous studies have concluded that the poor nutritional value, the excessive salt content and the degree of saturated fats and trans fatty acid associated with fast food products likely perpetuate the prevalence of hypercholesterolemia, hypertension, type II diabetes mellitus, obesity and cardiovascular disease.

There is a relation between different type of cancer and Fast Food consumption also. One of the major causes of Gastro-intestinal Carcinoma is fast food consumption and it can be 25% due to high fat and fried food (Hossain, Mohammad Monir & Islam, Md. Z ; 2020).

The results of the study was interpreted in terms of the age groups, where age group wise categorisation of the consumption of food from eateries outside home

which comprised of those opted for hotels and bakeries.

The below *Table 2* gives the information on the consumption of food from the eateries outside home by the participants categorised in different age groups. In the age group of below 30 years it was seen that 20.6% of the sample consumed hotel food and 16.2% of the them consume bakery food stuffs regularly.

Age			Outlets		Total percentage (%)
			Hotel	Bakery	
	Below 30	Count	26	12	38
		% within outlets	20.6%	16.2%	19.0%
	30-39	Count	31	17	48
		% Within outlets	24.6%	23.0%	24.0%
	40-49	Count	33	26	59
		% within outlets	26.2%	35.1%	29.5%
	50-59	Count	26	13	39
		% within outlets	20.6%	17.6%	19.5%
	60 & above	Count	10	6	16
		% within outlets	7.9%	8.1%	8.0%
Total		Count	126	74	200
		% within outlets	100.0%	100.0%	100.0%

Table 2: Age Group Wise Categorisation of the selected samples

In the age group of 30-39 years, 24.6% of the sample consumed hotel food and 23% of sample consumed bakery foods regularly. In terms of the age group 40-49 years ,26.2% of the sample consumed hotels foods and 35.1% of the sample consumed bakery foods.In

the category of 50-59 years around 20.6% of sample consumed hotels foods and 17.6% of the sample consumed bakery foods regularly. Lastly of the age group above 60 years, 7.6% of sample consumed hotel foods and 8.1% consumed bakery foods regularly. Majority (29.5%) of the sample under the age of 40-49, they consumed food from eateries outside regularly.

Frequency of visit to Food outlet		Number		Percentage (%)	Chi-square value	P value
		Hotel	Bakery			
Once in a while	Yes	42	27	34.5	.205a	0.651
	No	84	47	65.5		
Often	Yes	21	8	14.5	1.289 a	0.256
	No	105	66	85.5		
Always	Yes	42	22	32	.278a	0.598
	No	84	52	68		
Weekly	yes	17	9	13	.073a	0.787
	No	109	65	87		
Monthly	Yes	25	11	18	.782a	0.376
	No	101	63	82		

Table 3: Frequently Visited Food Outlets

The study addressed the association between the frequency of visits made by the participants to the various food outlets and the prevalence of lifestyle diseases which is depicted in the Table 3. The data was analysed by Chi- square test.Subjects who visited hotels and bakery once in a while was around 34.5% (p = 0.651) which was of the highest percentage compared to that of 14.5% (p = 0.256) of the subjects visited outlets quiet often, 32% (p = 0.598) of the participants who visited food outlets almost every day, 13% (p = 0.787) of the participants who visited food outlets weekly and 18% (p = 0.376) who visited once in a month to food outlets.

Frequency of out-of-home eating has been linked with higher body weight as well as diets high in fat and energy and low in micronutrient content; a diet pattern

described as containing increased empty calories through overconsumption of solid fats and added sugars, which has been hypothesized to displace important micronutrient intakes *(Ziauddeen N, Almiron-Roig E, Penney TL, Nicholson S, Kirk SFL, Page P ; 2017).*

IV. CONCLUSION

The rapid growth of the eateries outside home has become a public health concerns considering its negative health consequences including lifestyle diseases and the related risks. The results showed a direct relationship between food habits practised in the outlets and the development of lifestyle diseases. 40–49-year aged people were majority conception of food from food outlet. Most of them are enjoy the taste of the food outlets.

The general public should be advocated about the associated ill health effects of regular eating from outside food outlets. To promote healthy lifestyle, we need to ensure availability of variety of healthy foods in eateries and food outlets which will give better options for general public.

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