

**A STUDY TO COMPARE THE LIFESTYLE MODIFICATION STRATEGIES ADOPTED  
BY ADULTS FOR THE MANAGEMENT OF LIFESTYLE DISEASE BEFORE AND  
DURING COVID 19 PANDEMIC****Mekha Joy<sup>1</sup>, Merlin Kurian<sup>1</sup>, Neha Austin<sup>1</sup> and Deepak K. Nair<sup>2\*</sup>**<sup>1</sup>Final Year Bsc Nursing Students. M.O.S.C. College of Nursing, Kolenchery, Ernakulam, Kerala, India.<sup>2</sup>Assistant Professor, Dept. of Community Health Nursing, M.O.S.C. College of Nursing, Kolenchery, Ernakulam, Kerala, India.**\*Corresponding Author: Deepak K. Nair**

Assistant Professor, Dept. of Community Health Nursing, M.O.S.C. College of Nursing, Kolenchery, Ernakulam, Kerala, India.

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**ABSTRACT**

**Aim:** This descriptive study was conducted to compare the proportion of lifestyle diseases and the lifestyle modification strategies adopted by adults in the management of lifestyle diseases, for the promotion of health and control of lifestyle diseases. **Objectives:** To estimate the proportion of lifestyle diseases among adults and to compare the life style modification strategies adopted by adults for the management of lifestyle diseases before and during COVID -19 pandemic. **Methods:** Non-experimental descriptive survey was employed for the study. Data were collected from a purposive sample of 118 permanent residents of selected Gramapanchayat in Ernakulam district, Kerala. The study participants were asked to complete a structured Socio Demographic variable, a self structured checklist to assess the proportion of lifestyle disease and adoption of lifestyle modification strategies. The data were analyzed using R software. **Result:** Significant difference ( $p= 0.002$ ) was observed in the dietary pattern, physical activity and smoking habit.

**KEYWORD:-** Lifestyle modification strategies, Lifestyle disease, COVID 19 pandemic.**INTRODUCTION**

Coronavirus disease (COVID-19), which originated in the Wuhan province of China, was declared as a global pandemic by the World Health Organization (W.H.O) on March 11, 2020.<sup>[1]</sup> Since then it has spread beyond borders and affected the lifestyle behaviour of people. This pandemic not only adversely affected the physical health of individuals, but also brought forth significant changes in their lifestyle. COVID-19 is a global burden which continues to redefine daily lifestyle related habits in a significant manner as the pandemic progresses through its different phases. Public health recommendations and government measures taken to abate infection have indirectly impacted food availability, dietary quality, normal daily activities, access to recreational public settings, social activities, work and financial security.<sup>[1]</sup>

Maintaining a healthy nutrition status and level of certain exercise is crucial, especially in a period when the immune system might need to fight back. In fact, subjects with (severe) obesity ( $BMI \geq 30 \text{ kg/m}^2$ ) are one of the groups with a higher risk for COVID-19 complications.<sup>[2]</sup> Therefore, losing weight may be one of the strategies to lower the risk of severe illness from

COVID-19. Worldwide, authorities and healthcare professional's recommendations on how to stay healthy during the COVID-19 pandemic, besides taking appropriate hygiene measures, are related to healthy lifestyle measures such as assuring sufficient sleep, eat plenty of fresh fruits and vegetables, reduce stress and social isolation and stay active.

The COVID-19 pandemic might motivate people to make healthier choices and adopt a healthier lifestyle. Conversely, COVID-19 control measures such as social distancing and compulsory home isolation can be expected to increase sedentary behaviour and might cause an unhealthy eating and sleeping pattern<sup>[3,4]</sup> For example, the interruption of the daily (work) routine caused by the staying at home (Which includes digital-education, working from home, and limitation of outdoors and in-gym physical activity) could result in boredom, which in turn is associated with a greater energy intake.<sup>[13]</sup> In addition, hearing or reading continuously about the COVID-19 pandemic and its possible impact from media can be stressful.<sup>[5,6]</sup> Stress leads individuals toward overeating, especially 'comfort foods' or inactivity.<sup>[7]</sup> For future actions it is important to determine the lifestyle changes taken during this

COVID-19 pandemic, and what support will be needed to (dis) continue this health behaviour in a post-COVID-19 era.<sup>[8,9]</sup> While strict preventive measures are necessary to protect public health, they may, however, radically change individuals' daily habits, including lifestyle-related behaviors. Staying and working at home can affect diet, food choice, and access to food and, thus, reduce possibilities and limit the practice of physical activity.<sup>[10]</sup>

These factors compound over time to radically change lifestyle-related behaviors, especially daily eating, activity and sleep behaviors that are known to be independent risk factors for metabolic complications such as obesity, diabetes, and cardiovascular disorders.<sup>[11]</sup>

The measures adopted during COVID-19 pandemic may strongly impact the lifestyle behaviors and physical and mental health of adults.<sup>[12]</sup>

### Problem statement

A study to compare the lifestyle modification strategies adopted by adults for the management of lifestyle diseases before and during COVID -19 pandemic in selected Grama panchayat of Ernakulam district.

### Objectives of the study

- 1) To estimate the proportion of lifestyle diseases among adults.
- 2) To compare the life style modification strategies adopted by adults for the management of lifestyle diseases before and during COVID -19 pandemic.

### MATERIAL AND METHODS

The data was collected for a period from 25/2/2022 to 22/3/2022. After obtaining ethical clearance from

institutional ethics committee of MOSC Medical College Hospital, administrative permission was obtained from Panchayat President of Aikkaranad Gramapanchayat, a pilot study was conducted among permanent residence of selected areas of Aikkaranad Gramapanchayat to assess the feasibility and practicability of the study. The study was conducted among 20 subjects who were selected by purposive sampling technique. The purpose of the study, self Structured checklist to assess the lifestyle diseases and the lifestyle modification strategies before and during COVID 19 pandemic, were explained and informed consent was taken from each subjects by using online survey mode "Google Form". The data collection was terminated after thanking each participant for their participation and cooperation. The data were analysed by R software.

### Description of the tool

Section A: Socio-demographic variables.

It consist of 5 questions for collecting demographic data such as age, gender, religion, education, and occupation.

Section B

Tool 1: Self structured checklist to assess the lifestyle diseases.

Self structured checklist consisted of 5 questions to assess the lifestyle diseases.

Tool 2: Self Structured checklist to assess the lifestyle modification strategies before and during COVID 19 pandemic.

Self Structured checklist consisted of 6 items such as dietary pattern, sleep pattern, physical activity, smoking, alcoholism and tobacco and it consisted of 20 sub questions. It consists of a series of statements on lifestyle modification strategies before and during COVID 19 pandemic. Each sub questions has 3 alternatives: Agree, disagree, not applicable.

### RESULTS

#### Description of subjects according to their socio demographic variables

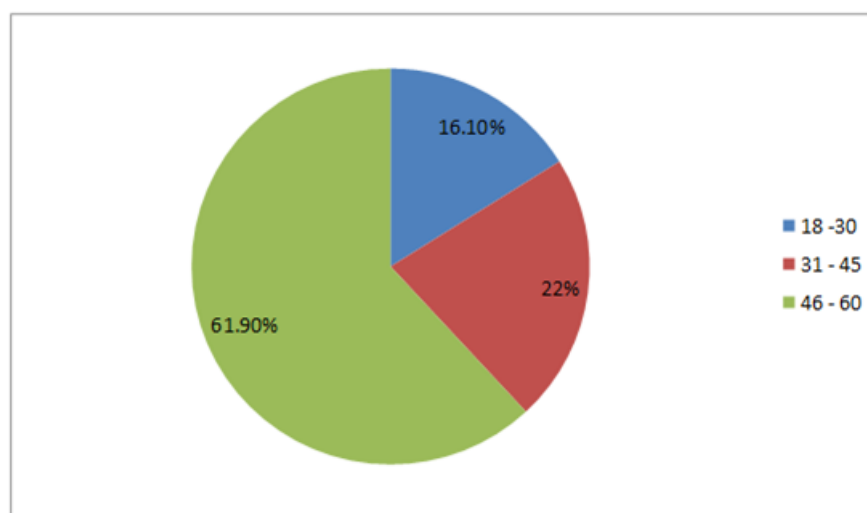
Frequency distribution and percentage of subjects based on demographic variables (n=118)

Sl. No	Sociodemographic variables	Frequency(f)	Percentage (%)
1	<b>Age</b>		
	18-30	19	16.1
	31-45	26	22
	46-60	73	61.9
2	<b>Gender</b>		
	Male	55	46.6
	Female	63	53.4
3	<b>Religion</b>		
	Christian	43	36.4
	Hindu	58	49.2
	Muslim	17	14.4
4	<b>Education</b>		
	Upto 10th standard	43	36.4
	Pre degree/plus two	29	24.6
	Degree	37	31.4
	Graduate and above	9	7.6
5	<b>Occupation</b>		
	Unemployed	13	11

Daily wager	36	30.5
Private job	42	35.6
Government job	11	9.3
Business	14	11.9
retired	2	1.7

The data given in the table 1 showed that majority of the subjects (61.9%) belonged to the age group of 46 to 60 years followed by (22%) were in the age group 31 to 45 and a small percentage (16.1%) belonged to the age group of 18 to 30 years. Most of the subjects (53.4%) were females and majority (49.2%) belonged to the Hindu religion. Majority of the subjects (36.4%) were below

10th standard, 31.4% were degree holders, 24.6% were predegree and remaining 7.6% were graduates. Majority of the subjects (35.6%) had private job, 30.5% were daily wagers, 11.9% were businessmen, 11% were unemployed, 9.3% were Government employee and 1.7% were retired.



**Figure 1: Pie chart showing percentage distribution of age of subjects. (n=118).**

As depicted in figure 1, 61.90% of subjects belonged to the age group 46 to 60 years, followed by 22% were in

the age group 31 to 45 years and a small percentage 16.1% belonged to the age group of 18 to 30 years.

#### **Description of subjects based on lifestyle disease and adoption of lifestyle modification strategies. (n= 118)**

##### **Frequency distribution and percentage of subjects based on lifestyle disease (n= 118)**

Sl. No	Lifestyle disease	Frequency (f)	Percentage (%)
1	Diabetes Mellitus		
	Yes	48	40.7
	No	70	59.3
2	Hypertension		
	Yes	67	56.8
	No	51	43.2
3	Coronary Artery Disease		
	Yes	14	11.9
	No	104	88.1
4	Obesity		
	Yes	1	0.8
	No	117	99.2
4	Cancer		
	Yes	3	2.5
	No	115	97.5
5	Thyroid Disease		
	Yes	20	16.9
	No	98	83.1

The data given in the table showed that 40.7% subjects had Diabetes Mellitus, 56.8% had Hypertension, 88.1%

had Coronary Artery Disease, 0.8% had obesity, 2.5% had Cancer and 16.9% had Thyroid Disease.

**Comparison of dietary modification before and during COVID 19 pandemic.**

Sl. No.	Item	Before		During	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	Fruits and vegetables	105	89	109	92
2	Nuts and cereals	103	87.30	112	94.90
3	Milk and milk products	62	52.50	95	80.50
4	Reduced oil and butter	52	44.10	65	56.10
5	Never reuse cooking oil	81	68.60	93	78.80
6	Never eat out	63	53.40	46	39
7	Decreased sweet food	45	38.10	57	48.30
8	Avoid preservatives	115	97.50	111	94.10
9	Reduced red meat	57	48.30	56	47.50

**Comparison of sleep pattern before and during COVID 19 pandemic.**

Sl. No.	Item	Before		During	
		Frequency (f)	Percentage (%)	Frequency (F)	Percentage (%)
10	No difficulty in falling asleep	88	75	88	75
11	7 hours of sleep daily	79	66.90	77	65.30
12	No difficulty in continuing sleep	79	66.90	80	67.80

**Comparison of physical activity before and during COVID 19 pandemic.**

Sl. No.	Item	Before		During	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
13	Regular exercise	46	39	66	56
14	No difficulty in doing exercise	39	33.10	67	56.80
15	Engage in household activities	77	65.30	81	68.60

**Comparison of smoking habit before and during COVID 19 pandemic.**

Sl. no	Item	Before		During	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
16	Habit of smoking	23	19.50	9	7.60
17	Reduced smoking	10	8.50	7	5.90

**Comparison of alcohol and other substance use before and during COVID 19 pandemic.**

Sl. no	Item	Before		During	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
18	Habit of alcoholism	16	13.60	11	9.30
19	Reduced alcohol consumption	10	8.50	4	3.40
20	Habit of tobacco chewing	7	5.90	5	4.20

**Comparison of lifestyle modification strategies before and during COVID 19 pandemic**

Sl. no	Item	Before		During		Paired sample t test	p.value
		Mean	SD	Mean	SD		
1	Dietary pattern	14.77	1.487	15.36	1.466	-3.227	0.002*
2	Sleep pattern	5.00	1.307	4.95	1.339	0.380	0.705
3	Physical activity	3.80	1.465	4.40	1.613	-3.167	0.002*
4	Smoking habit	0.69	1.382	0.43	1.066	3.178	0.002*
5	Alcohol and other substance use	0.67	1.346	0.51	1.115	1.660	1.100

\*p value &lt; 0.05

Table showed that there is a significant difference in the lifestyle modification strategies such as dietary pattern,

physical activity and smoking habit before and during COVID 19 pandemic.

## DISCUSSION

In this present study, 40.7% subjects had Diabetes Mellitus, 56.8% had Hypertension, 88.1% had Coronary Artery Disease, 0.8% had obesity, 2.5% had Cancer and 16.9% had Thyroid Disease.

This findings is in agreement with the study conducted among 200 university or college students.

In the present study, statistically significant difference was obtained in the adoption of lifestyle modification strategies such as dietary pattern, physical activity and smoking habit before and during COVID 19 pandemic. ( $p < 0.05$ )

Similar findings are reported by a study conducted among 995 subjects.

## CONCLUSION

The study was conducted to compare the lifestyle modification strategies adopted by adults for the management of lifestyle disease before and during COVID 19 pandemic among 118 permanent residents of Aikkarand Gramapanchayat of Ernakulam district. The data were collected using a self structured checklist. The collected data were analysed and interpreted using descriptive and inferential statistics.

The study findings revealed that there was a statistically significant difference in the lifestyle modification strategies such as dietary pattern, physical activity and smoking habit before and during COVID 19 pandemic ( $p < 0.05$ ).

## Implications of the study

Findings of the present study have several implications in the field of nursing practice, nursing education, nursing administration and nursing research.

## Nursing administration

It is important that health care organizations provides evidence based practice for the management of lifestyle diseases prevalent in the community. Nurse administrator can incorporate the findings of this study in prevention of lifestyle diseases and promotion of health in the community.

## Nursing education

Nurse educator can use the findings while teaching about the lifestyle modification strategies needed for adults for the management of lifestyle diseases.

## Nursing practice

The goal of community nurse is to provide direct care, educate individuals or public, advocate for health improvements and perform research in community health.

## Nursing research

Findings of the study can be used for future studies.

Standardized tools used for assessing the lifestyle modification strategies adopted by adults for the management of lifestyle diseases before and-during COVID 19 pandemic can be used for other related studies.

## Recommendations for future research

Based on the results of the study, following recommendations are made:

- The same study can be conducted by using a large sample to generalize the findings.
- Similar study can be conducted by using an experimental design.

## Ethics and Consent

Ethical permission was obtained from the IRB of M.O.S.C. Medical College Hospital and formal permission was obtained from concerned authority. Informed consent was obtained from the subjects. Confidentiality and anonymity was ensured using the subject coding system.

## Conflict of interest

The authors declare no conflict of interest.

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