A Study to Assess Effectiveness of Information Booklet on Knowledge Regarding Prevention and Management of Obesity Among Adults in Selected Urban Areas of Bhuj Kutch-Gujarat

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***Abstract*—Obesity is an escalating public health concern in India, contributing to rising cases of diabetes, hypertension, and cardiovascular diseases. Driven by unhealthy diets, sedentary lifestyles, and processed food consumption, the problem affects both urban and rural populations. The government has initiated programs like Fit India Movement, POSHAN Abhiyaan, and Eat Right India to foster healthy living. According to NFHS-5, obesity rates among adults and children are alarming. Combating obesity requires widespread awareness, community participation, and sustained behavioral change. OBJECTIVES: The objective of study is to assess effectiveness of information booklet on knowledge regarding prevention and management of obesity among the adults in selected urban areas. FINDINGS: Demographic variables are in study result show that pre-test assessment reveal that the majority of adult people had a moderately adequate knowledge regarding obesity, with 17 (28.33%) falling into this category. Additionally, 35 (58.33%) of the participants demonstrated adequate knowledge, while only 8 (13.33%) had inadequate knowledge after the educational intervention. CONCLUSION: This study was conducted to assess the level of knowledge regarding the effectiveness of BMI score. The pretest finding of the study suggested that there was a need for information booklet intervention. Post test result suggested that informational booklet was effective in increasing the knowledge of the samples. The pretest finding of the study has suggested to carry out the information booklet intervention and after carrying out the information booklet the post test result was much effective among the urban people, thus the information booklet on the prevention and management of obesity in urban people using demographic variables among the urban people working in selected urban areas of Bhuj Kutch was much effective.**

***Index Terms*—Assess, Knowledge, Obesity, Adults, Urban areas, Prevention, Management and Information Booklet.**

I. INTRODUCTION

"IT'S NOT JUST ABOUT LOSING THE WEIGHT; IT'S ABOUT LOSING THE LIFESTYLE AND MINDSET THAT GOT YOU THERE".

BACKGROUND OF STUDY

Obesity is a growing global public health issue and has reached epidemic proportions in both developed and developing countries, including India. It is defined as an abnormal or excessive accumulation of body fat that presents a health risk. According to the World Health Organization (WHO), obesity is one of the most common, yet neglected, public health problems

worldwide. It significantly increases the risk of various non-communicable diseases (NCDs) such as type 2 diabetes, hypertension, cardiovascular diseases, certain cancers, and musculoskeletal disorders.[1]

NEED OF THE STUDY

Obesity in India is a growing public health concern due to its link with various non-communicable diseases and its increasing prevalence across all age groups and regions. Studies are needed to understand the factors contributing to obesity, its prevalence in different populations, and to develop effective prevention and management strategies.

II. OBJECTIVE

- To assess the pre-test level of knowledge regarding the prevention and management of obesity among adults in urban people using demographic variables among the urban peoples.
- To develop and distribute an information booklet on the prevention and management of obesity.
- To assess the post-test level of knowledge after administration of the information booklet among adults.
- To find out the association of pre-test knowledge score with selected demographical variables.

HYPOTHESIS

H1: There will be a significant difference between the pre-test and post-test knowledge scores regarding prevention and management of obesity among adults after administration of the information booklet.

H2: There will be a significant association between pre-test knowledge scores and selected demographic variables (such as age, gender, education, occupation, BMI, etc).

III. RESEARCH METHODOLOGY

The methodology of the research study defined as the way data are gathered in order to the research question or analyze research problem, research methodology involves a systematic procedure by which the researcher start from the initial identification of the problem its final conclusion.

Research methodology provides a brief description of method adopted by investigation in the study. This chapter includes the research approach, research design, the setting of study, sample selection and its further deal with description of the tools, testing of tool, and procedure for data collection, data analysis and pilot study.

3.1 RESEARCH APPROACH

In this study the researcher has used quantitative research approach.

3.2 RESEARCH DESIGN

In this study the pre-experimental (one group pretest and post test) design is used to evaluate the effectiveness of informational booklet and this can be represented by:

Group	Pre-test	Intervention	Post-test
Pre-experimental	01	x	02

01 – pre-test to assess the level of knowledge regarding prevention and management of obesity among the selected population in selected urban area of Bhuj – kutch, Gujarat.

x- Information booklet.

02- Post test to assess the level of knowledge regarding prevention and management of obesity among the selected population in selected urban area of Bhuj – kutch , Gujarat.

3.3 VARIABLE OF THE STUDY

INDEPENDENT VARIABLE

In this study independent variable was information booklet regarding prevention and management of obesity among the adult people.

DEPENDENT VARIABLE

In this study dependent variable was the level of knowledge regarding prevention and management of obesity among the adult people.

3.4 SETTING OF THE STUDY

The study was conducted in two different settings for pilot study and main study. The pilot study was conducted at lotus colony. The main study was conducted at Pramukh swami nagar, Sagar city, Valdas nagar, Bhanushali nagar, Vyayam shala .

3.5 POPULATION

Population is the aggregation of cases which the research would like to make as generalization. It refers to group of individuals with some common characteristics and it is important to make distinction between the target population and accessible population.

TARGET POPULATION

In this study the target population were urban people in selected area of Pramukh swami nagar, Sagar city, Valdas nagar, Bhanushali nagar, Vyayam shala of Bhuj Kutch Gujarat.

ACCESSIBLE POPULATION

In this study the accessible population were those urban people who were available at the time of data collection in selected area of Bhuj Kutch Gujarat.

3.6 SAMPLE AND SAMPLE SIZE

SAMPLE:

In this study samples were those people of Pramukhswami nagar, Sagar city, Valdas nagar, Bhanushali nagar, Vyayam sala who had fullfilled the inclusion criteria selected for the study.

SAMPLE SIZE:

The sample size was 60 urban adult people.

3.7 SAMPLING CRITERIA

INCLUSION CRITERIA

- People who is willing to participate in study.
- People who is present at the time of data collection
- People who are living in selected area
- People with knowledge regarding obesity

EXCLUSION CRITERIA

- Who are not willing to participate in study.
- Who are not present at the time of data collection
- People who are not living in selected area
- People who have recived knowledge on the BMI score in the past 6 month.

3.8 DEVELOPMENT AND DESCRIPTION OF THE TOOL

The instruments used in this study were demographic variable and knowledge questionnaire.

METHODS OF DEVELOPMENT OF THE TOOL

A structured knowledge questionnaire was developed to assess the level of knowledge of urban people regarding prevention and management of obesity.

It consists of two sections:

SECTION – I: DEMOGRAPHIC VARIABLES

SECTION- II: KNOWLEDGE QUESTIONNAIRES

DESCRIPTION OF TOOL

SECTION I: Demogrphic variables

It deals with the demografhic varibles such as age, type of family , dietary pattern, education level, marital status, physical activity level.

SECTION- II: Information Questionnaires

It deals with the knowledge regarding the prevention and management of obesity in patient using demographic variables. It had 30 knowledge questionnaires. Each right answer was awarded by ‘1’ mark, for Total score was 30.

The samples were classified in three groups on the basis of their obtained scores:

1. Adequate knowledge : 21-30 marks> 76-100%
2. Moderately adequate knowledge : 11-20 marks >51-75%
3. Inadequate knowledge : 0-10 marks >50%

PLAN FOR DATA ANALYSIS

The data which was collected and arranged , tabulated and preapared in master chart and statistically analysied by statistical package.

TYPES OF STATISTICS	STATISTICAL TECHNIQUE	OBJECTIVES

Descriptive statistics	Frequency and percentage distribution	To assess the pre -test knowledge regarding prevention and management of obesity in selected urban areas of Bhuj-kutch.
Inferential statistics	(A) Paired t-test	To assess the information booklet on knowledge regarding prevention and management of obesity among the selected urban areas of Bhuj -kutch.
	(B) Chi-square test	To associate the knowledge with demographic variables regarding prevention and management of obesity in selected urban areas of Bhuj-Kutch. To analyze categorical data to determine if there is a statistically significant association or relationship between two or more variables.

IV. RESULT

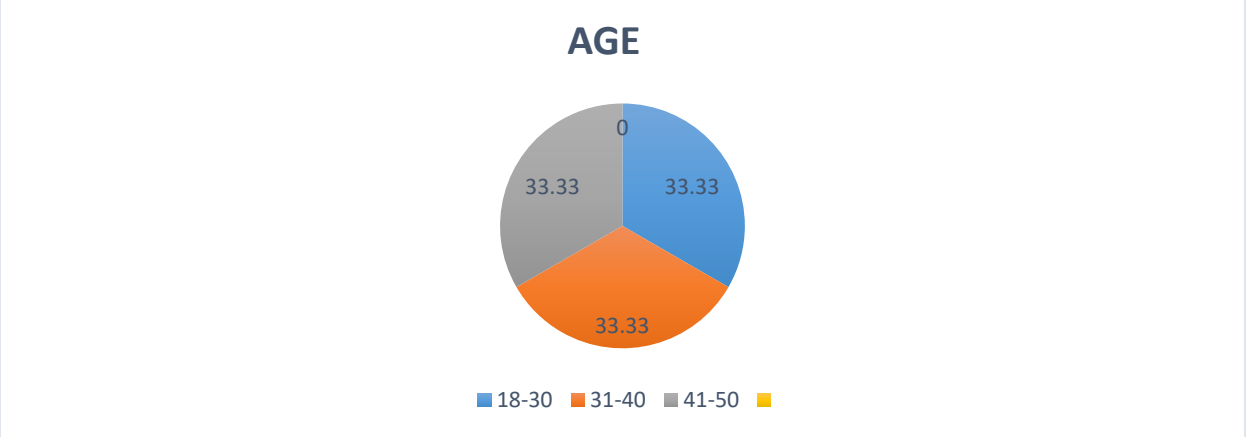

Figure 4.1: Frequency and percentage distribution according to age of the adult people.

Regarding age of adult people, 33.33% of adult people had 18-30 , 33.33% had 31-40, 33.33% had 41-50 as their age .

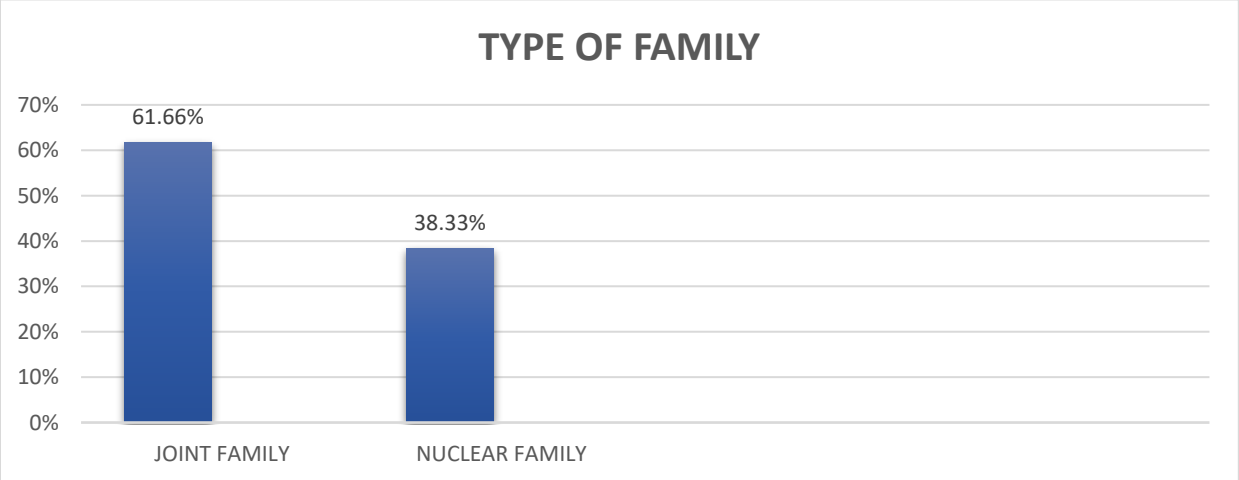

Figure 4.2: Frequency and percentage distribution according to type of family

Regarding type of family of adult people, 50% of adult people had jont family and 50% of adult people had nuclear family.

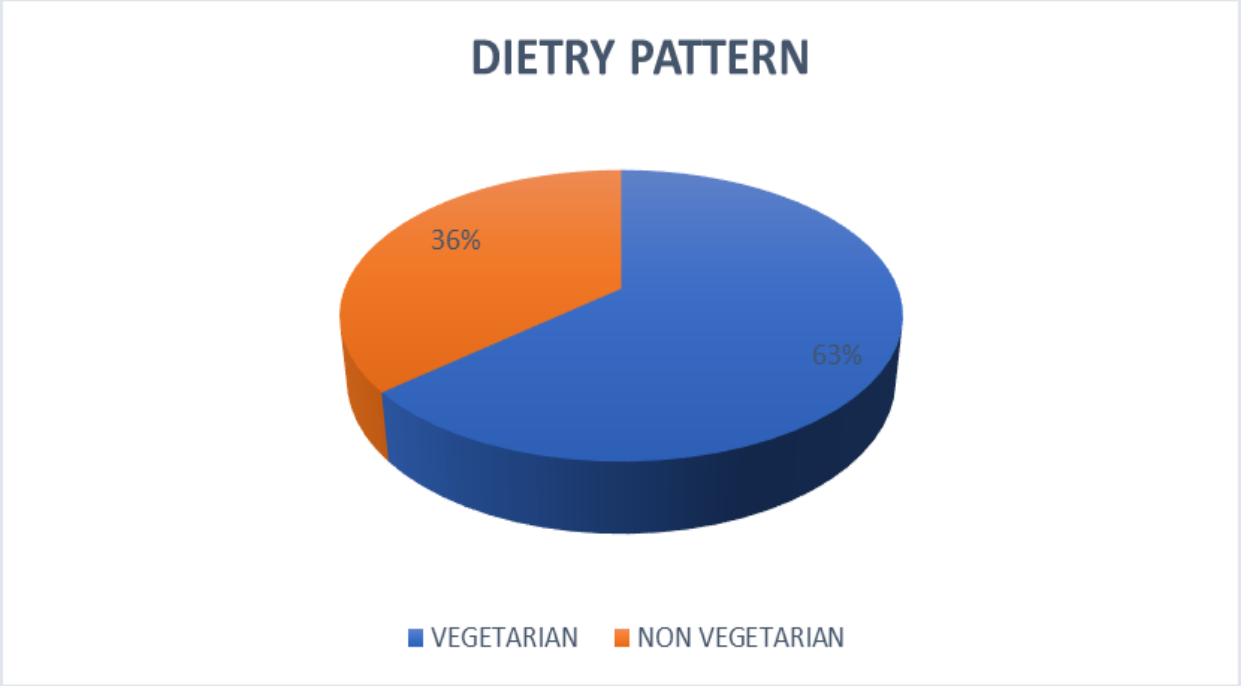

Figure 4.3: Frequency and percentage distribution according to dieatary pattern attended by adult people.

Regarding knowledge distribution related to demograflhic variables, 50% (30) of vegetarian people and 50% (30) non vegetarian people.

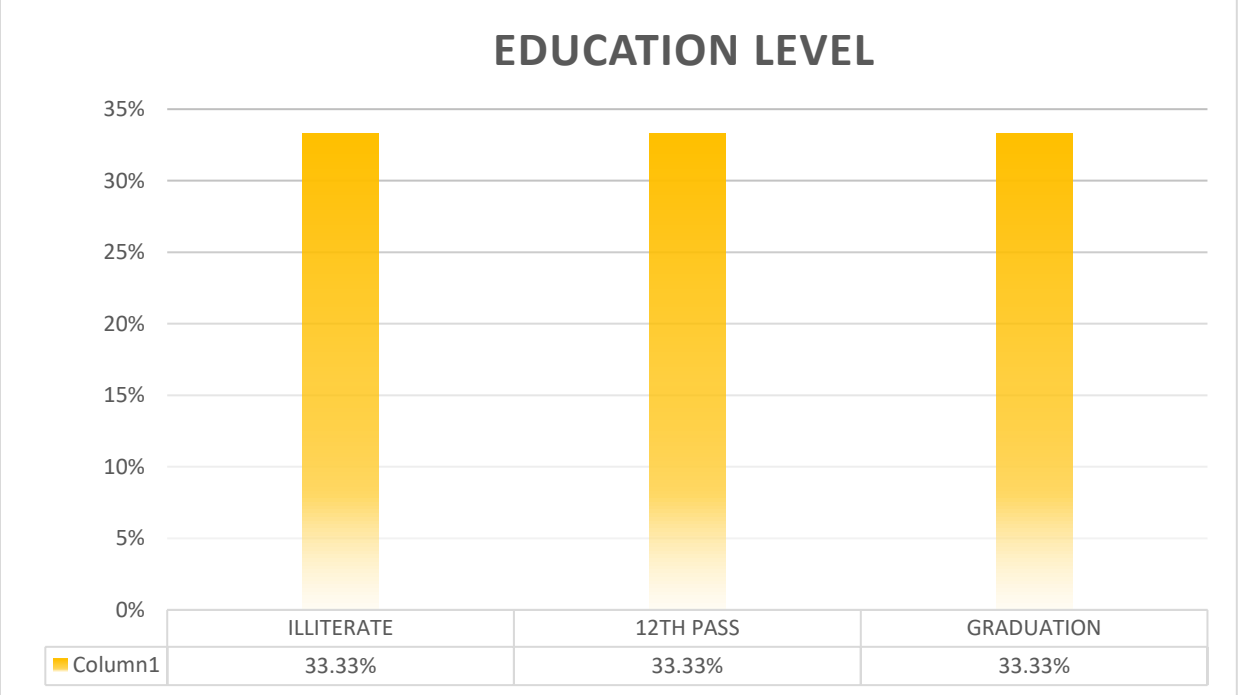

Figure 4.4: Frequency and distribution according to education level in selected urban area.

Regarding previous educational level in selected urban area, 33.33 % (20) illiterate, 33.33% (20) 12 th pass, 33.33%(20) graduation.

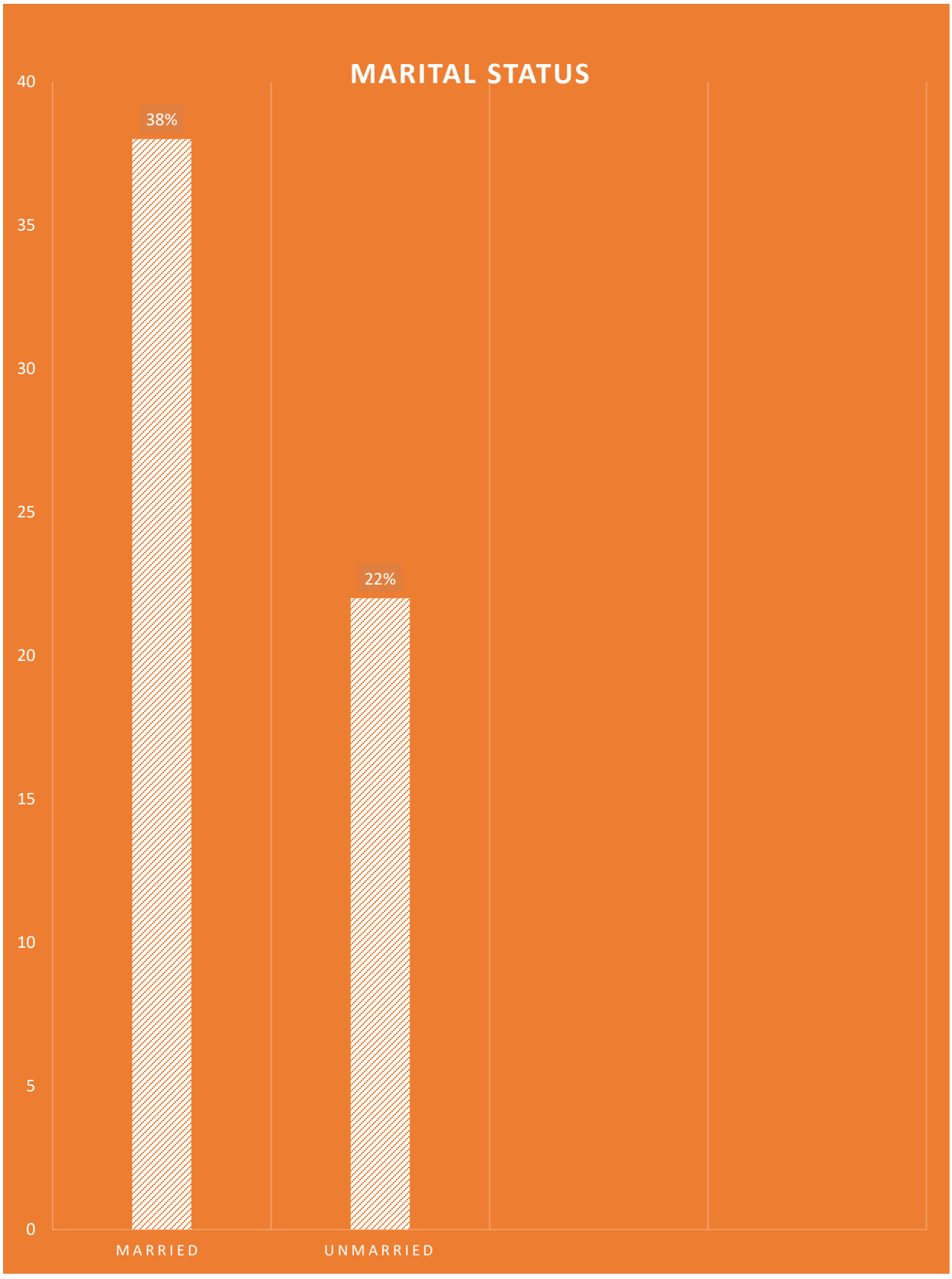

Figure 4.5 frequency and distribution according to martial status in selected urban area.

Regarding marrtial status related to demogrphic variables, 63.33% (38) of married people , 36.66% (22) of unmarried people .

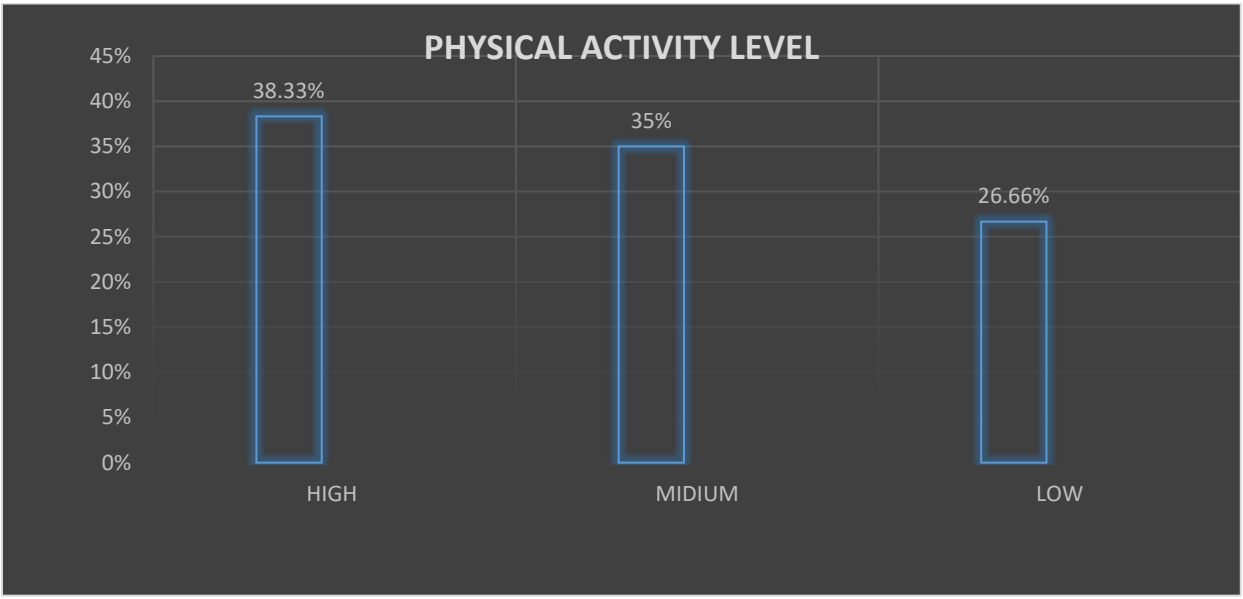

Figure 4.6 frequency and percentage distribution according physical activity level in selected urban area.

Regarding physical activity level related to demographic variables,38.33% (23) high ,35% (21) medium, and 26.66% (16) low in selected urban area.

SECTION-II

LEVEL OF KNOWLEDGE

Table 4.2: Frequency and distribution of pre –test and post-test level of knowledge regarding prevention and management of obesity among adult people in selected urban area of Bhuj-Kutch. [N=60]

SR NO.	LEVEL OF KNOWLEDGE	PRE-TEST		POST-TEST	
		Fr	%	Fr	%
1.	Adequate knowledge	8	13.33%	36	60%
2.	Moderately adequate knowledge	17	28.33%	19	31.66%
3.	Inadequate Knowledge	35	58.33%	5	8.33%

As per pre-trest knowledge score 58.33%(35) of adult people had inadequate knowledge, 28.33%(17) of adult people had moderately adequate knowledge, whereas 13.33%(8) of adult people had adequate knowledge.

Post test knowledge score reveals that 60% (36) of adult people had adequate knowledge , 31.66% (19) of adult people had moderately adequate knowledge , and only

8.33% (5) of adult people had inadequate knowledge.

The above data show that most of the adult gained adequate knowledge in the posttest score.

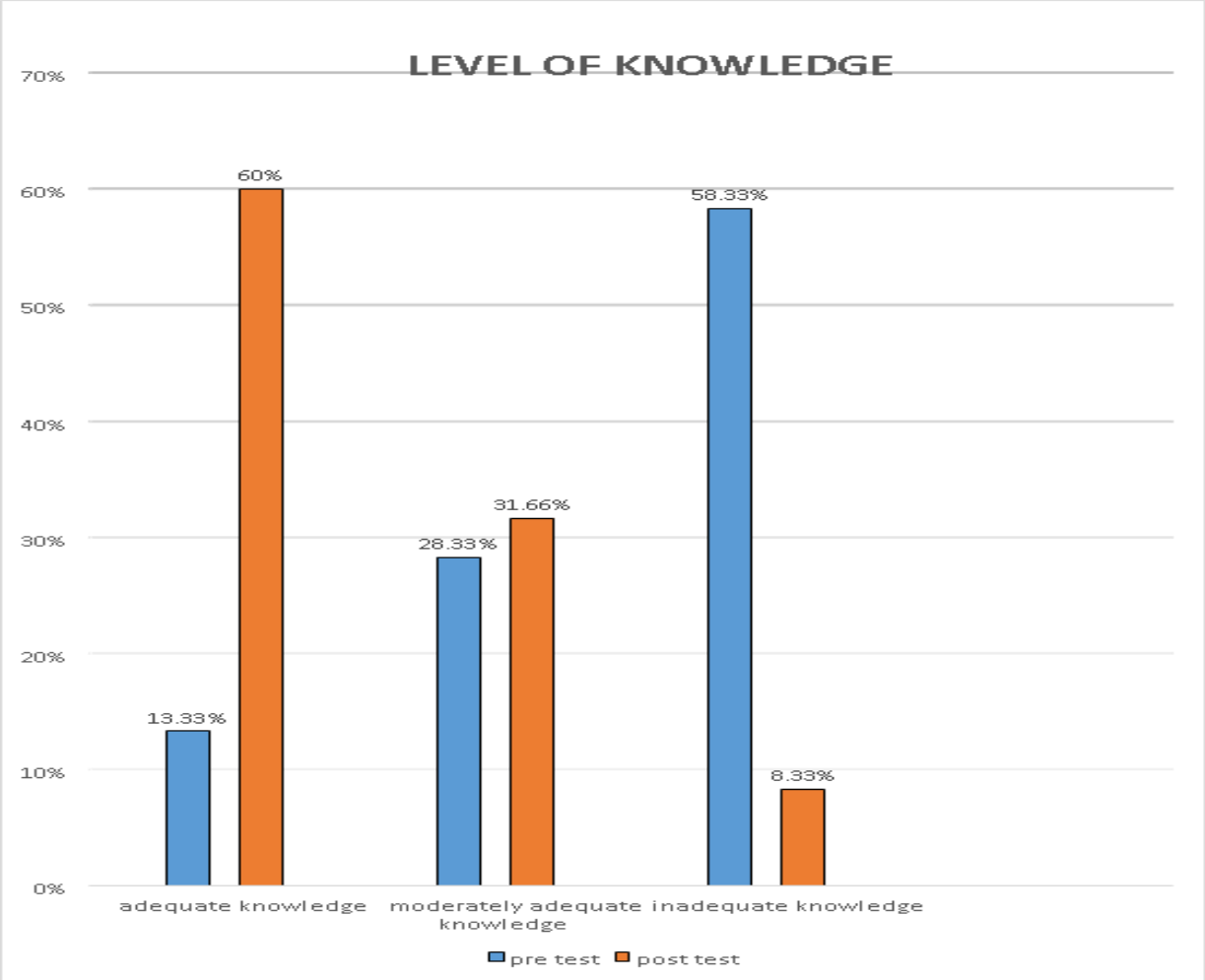

Figure 4.7 Frequency and percentage distribution of pre-test and post-test level of knowledge related to demographic variables of among adult people in selected urban area.

SECTION: III

Table 4.3 Association of the pre -test score knowledge with demographic variables.

Demographic variables	Inadequate knowledge		Moderately adequate knowledge		Adequate knowledge		Chi square
	Fr	%	Fr	%	Fr	%	
	Age						
18-28 YEAR	13	21.7%	1	1.7%	1	1.7%	χ^2= 17.21*s DF=6 P=12.592 P<0.05
29-38 YEAR	10	10.7%	3	5.0%	2	5.3%	
39-48 YEAR	6	10.0%	6	10.0%	3	3.0%	
ABOVE 49 YEAR	6	10.0%	7	11.7%	2	3.3%	
	Ty pe of family						
Joint family	12	20%	9	15%	2	3.33%	χ^2=

Nuclear family	23	38.33%	8	13.66%	6	10%	1.78 Ns DF=2 P=5.99 P<0.05
	Die try pa ttern						
Vegetarian	21	35%	11	18.33%	6	10%	χ^2= 0.68 Ns DF=2 P=5.99 P<0.05
Non Vegetarian	14	23.33%	6	10%	2	3.33%	
	Ed ucation level						
Illitrate	20	33.33%	0	0%	0	0%	χ^2= 24.03*s DF= 4 P=9.49 P<0.05
12^{th} pass	10	16.66%	7	11.66%	3	5%	
Graduation	5	8.33%	10	16.66%	5	8.33%	
	Ma rital s tatus						
Married	20	33.33%	13	21.66%	5	8.33%	χ^2= 11.52*S DF=2 P=5.99 P<0.05
Unmarried	15	25%	4	6.66%	3	5%	
	Physic al activity level						
Low	15	25%	5	8.33%	3	5%	χ^2= 10.62*s DF=4 P=9.49 P<0.05
Medium	11	18.33%	9	15%	1	1.66%	
High	9	15%	3	5%	4	6.66%	

(key : Significant at p<0.001 level***, Significant at p<0.01**, Significant at p<0.05*level, Ns- not significant, s-significant)

Regarding the age of adult people, the calculated chi square value is 17.21 and degree of freedom is 6 the table value of df = 6 is value p= 12.592 at p<0.05 level. the calculated chi square value is more than the table value. therefor, there is significant association between pre test level of knowledge regarding the prevetion of obesity in urban people using demographic variables among the urban people. Hence the researcher has accepted the research hypothesis and rejected the null hypothesis for this variable.

Regarding the type of family in selected area, the calucated chi sqare value is 1.78 and degree of freedom is 2. The table value for df= is 2 is p= 5.99 at p< 0.05level. the calculated chi square is a less than the table value. Therfor, yjere is no significant association between pre test level of knowledge regarding the prevention of obesity in urban people using demographic variable among the urban people. Hence the researcher has rejected the research hypothesis and aacepted the n8ull hypothesis for this variable.

Regarding the diettry pattern in selected area, the calucated chi sqare value is 0.68 and degree of freedom is 2. The table value for df= is 2 is p= 5.99 at p< 0.05level. the calculated chi square is a less than the table value. Therfor, yjere is no significant association between pre test level of knowledge

regarding the prevention of obesity in urban people using demographic variable among the urban people. Hence the researcher has rejected the research hypothesis and aacepted the n8ull hypothesis for this variable.

Regarding the education level of adult people, the calculated chi square value is 24.03 and degree of freedom is 4 the table value of df = 4 is value p= 9.49 at p<0.05 level. the calculated chi square value is more than the table value. therefor, there is signoificant association between pre test level of knowledge regarding the prevetion of obesity in urban people using demographic variables among the urban people. Hence the researcher has accepted the research hypothesis and rejected the null hypothesis for this variable.

Regarding the marital status of adult people, the calculated chi square value is 11.52 and degree of freedom is 2 the table value of df = 2 is value p= 5.99 at p<0.05 level. the calculated chi square value is more than the table value. therefor, there is signoificant association between pre test level of knowledge regarding the prevetion of obesity in urban people using demographic variables among the urban people. Hence the researcher has accepted the research hypothesis for this variable.

Regarding the physical activity of adult people, the calculated chi square value is 10.62 and degree of freedom is 4 the table value of df = 4 is value p= 9.49 at p<0.05 level. the calculated chi square value is more than the table value. there for, there is significant association between pre-test level of knowledge regarding the prevention of obesity in urban people using demographic variables among the urban people. Hence the researcher has accepted the research hypothesis and rejected the null hypothesis for this variable and rejected the null hypothesis for this variable.

SECTION-VI

TABLE4.4: Comparision of mean and standard deviation of pre-test and post-test level of informational booklet on knowledge regarding prevention and management of obesity.

Level of Knowledge	Mean	Mean difference	SD	"t" Value
Pre-test level of knowledge	11.85	6.33	4.72	t=7.46*s df=59 p=3.46 (p<0.001)
Post-test level of knowledge	18.18		6.57	

(Key: Significant at p<0.001 level***, significant at p<0.01**, significant at p<0.05 level*)

The mean score of pre-test level of knowledge is 11.85 and SD value is 4.72.The mean score of post-test level of knowledge is 18.18 and SD is 6.57.Mean difference is 6.33. The obtained t value 7.46 which is statistically significant at p<0.05 level (df =59, table value p = 2.00).

A paired t-test could analyze prevention and management of obesity by comparing pre-test and post-test for the adult people.

It shows that there is significant difference between the pre-test and post-test level of knowledge regarding the prevention of obesity in selected urban areas of Bhuj-Kutch, Gujarat.

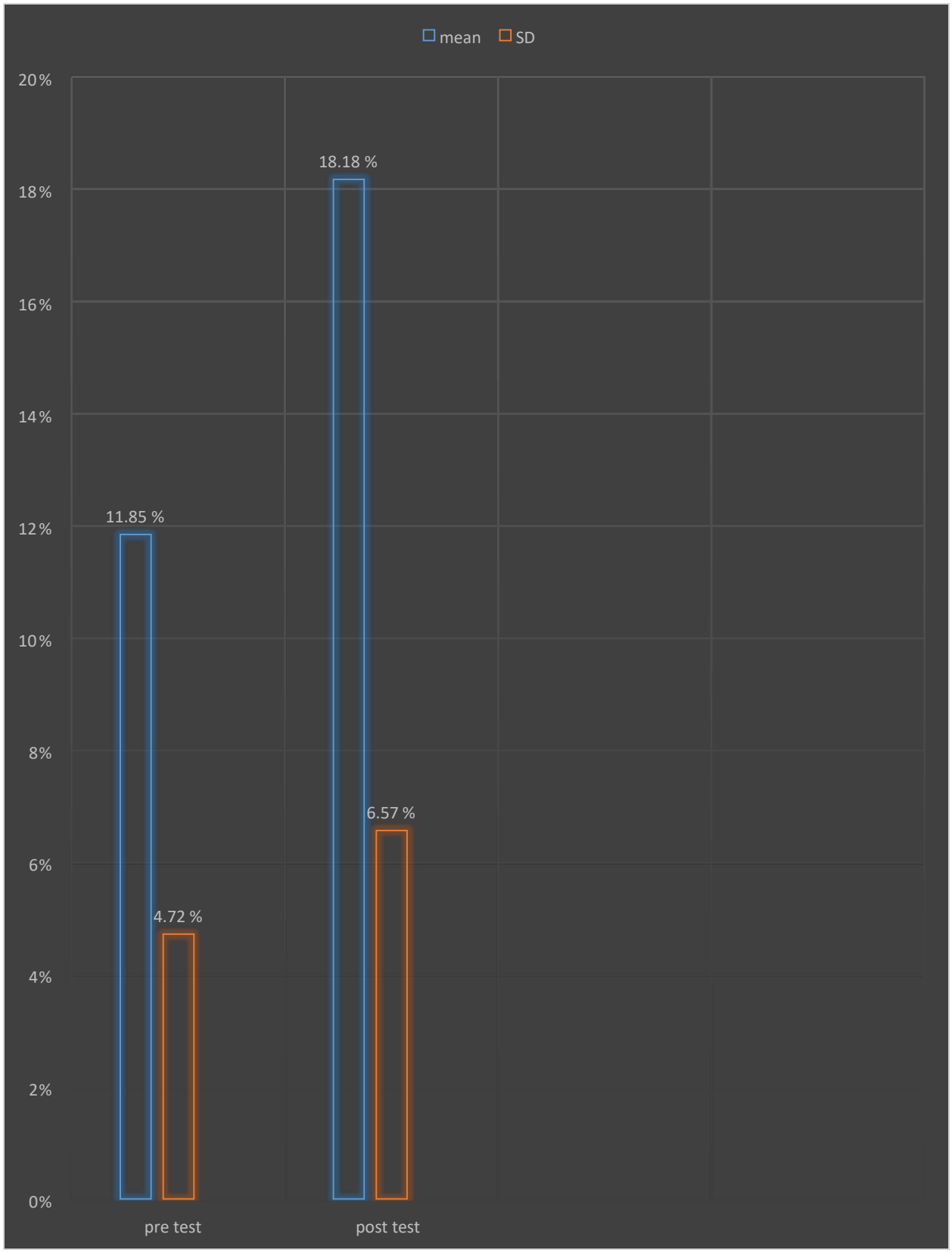

Figure 4.8 Comparision of mean and standard deviation of pre- test post –test level

V. DISCUSSION

The present study under taken a study to assess the informational booklet on knowledge regarding prevention and management of obesity among adults of selected urban areas new lotus colony, bhanushali nagar, vyayamshala, valdasnagar, sagar city, pramukh swami nagar Bhuj Kutch Gujarat. The data collected was adult peoples. The data collected by using informational booklet on knowledge regarding prevention and management of obesity in adults.

MAJOR FINDINGS OF THE STUDY:

Demographic variables:

Study results show that,

- 25.00% (15) of adults have 18-28 year age.
- 25.00% (15) of adults have 29-38 year age.
- 25.00% (15) of adults have 39-48 year age.
- 25.00% (15) of adults have above 49 year age.
- 61.66% (37) of adults have joint family.
- 38.33% (23) of adults have nuclear family.
- 63.33% (38) of adults have vegetarian.
- 36.66% (22) of adults have non-vegetarian.
- 33.33% (20) of adults have illiterate.
- 33.33% (20) of adults have 12th pass.
- 33.33% (20) of adults have graduated.
- 63.33% (38) of adults have married.
- 36.66% (22) of adults have unmarried.
- 38.33% (23) of adults have low physical activity.
- 35% (21) of adults have medium physical activity.
  - 26.66% (16) of adults have high physical activity.

Level of knowledge:

In study result show that pre-test assessment reveal that the majority of adult people had a moderately adequate knowledge regarding obesity, with 17% falling into this category. Additionally, 35% of the participants demonstrated adequate knowledge, while only 8% had inadequate knowledge after the educational intervention.

These results indicate that the knowledge regarding prevention and management of obesity among this adults improved, and the educational program had a positive impact on enhancing their knowledge. However, there remains a need for continued education and support, especially for the group that still showed inadequate understanding, to endure all adults are well-informed and prepared for the changes associated with obesity.

NURSING IMPLICATION:

The finding of the recommended the implication on nursing education, nursing administration and nursing research.

NURSING EDUCATION:

With the emergency health care trends nursing education must focus on innovations of theory is a vital need and it is important in nursing education, nursing curriculum. The assessment of knowledge regarding prevention and management of obesity. Therefore, the students know about obesity.

NURSING ADMINISTRATION:

Nursing Administration should take initiative step in creating policies or plan in providing education to selected urban areas. Adults peoples should be motivated and provided the time for development of education materials like information booklet. Provision should be made access of education material which are already developed.

NURSING RESEARCH:

The findings of the study contribute to the body of knowledge to the body of knowledge effectiveness regarding obesity among adults. In future the researcher can use the findings and the methodology as reference materials. It highlights the areas community-urban that requires futures exploration. Other researchers conducting

further studies in the same field can utilize the studies suggestions and recommendations.

FURTHER RECOMMENDATION:

A similar study can be done on a large sample and to generalize the findings to a large population of adults in urban areas. An experimental study can be done to assess the level of knowledge regarding prevention and management of obesity.A structured teaching program can be done to improve the level of knowledge among the adult people regarding obesity.Study the physiological impact of obesity.

VI. CONCLUSION

This study was conducted to assess the level of knowledge regarding the effectiveness of BMI score. the pretest finding of the study suggested that there was a need for information booklet intervention. Post test result suggested that informational booklet was effective in increasing the knowledge of the samples. The pretest finding of the study has suggested to carry out the information booklet intervention and after carrying out the information booklet the post test result was much effective among the urban people, thus the information booklet on the prevention and management of obesity in urban people using BMI score knowledge among the urban people working in selected urban areas of Bhuj Kutch was much effective.

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