RESEARCH PAPER

Efficacy of Video Assisted Teaching (VAT) on Knowledge regarding Prevention of Obesity and Hypertension among adults in Ariyankuppam at Puducherry.

Dr. Edna Sweenie J[1], Mrs. Muthamiz Priya. G[2] and Ms. Vishali C[3]

[1]Principal Cum Professor Vinayaka Mission's College of Nursing affiliated to Vinayaka Mission's Research Foundation, (Deemed to be University), Salem-636 008
[2,3]Nursing Tutor, Vinayaka Mission's College of Nursing affiliated to Vinayaka Mission's Research Foundation, (Deemed to be University), Salem-636 008
[1]drendna16@gmail.com, [2]muthamizhpriya@vmcnpdy.edu.in and [3]vishali@vmcnpdy.edu.in

Received: 14th June, 2026; Revised: 20th July 2026; Accepted: 20th August, 2026; Available Online: 05th September 2026

ABSTRACT

Background: Obesity is characterized by excessive accumulation of body fat and is a major global public health concern. It is an important risk factor for cardiovascular disease and is strongly associated with hypertension. Excess body weight can contribute to elevated blood pressure through various physiological and lifestyle-related mechanisms. Therefore, promoting healthy lifestyle behaviours is essential for the prevention of obesity and hypertension among adults.

Aim: The study aimed to assess the level of knowledge regarding the prevention of obesity and hypertension among adults before and after video –assisted teaching; to evaluate the effectiveness of video-assisted teaching on knowledge regarding the prevention of obesity and hypertension among adults aged 40-60 years in Ariyankuppam, Puducherry; and to determine the association between selected demographic variables and the level of knowledge regarding the prevention of obesity and hypertension.

Materials and methods: A quantitative research approach with a quasi-experimental research design was adopted. A total of 100 adults age 40-6- years from Ariyankuppam, Puducherry, were selected using a purposive sampling technique, with 50 participants each in the comparison and study group. Data were collected using structured questionnaire to assess knowledge regarding the prevention of obesity and hypertension, along with a demographic data questionnaire. Video-assisted teaching was provided to the study group regarding sleep patterns, dietary practices, physical activity, and healthy lifestyle practice.

Results: In the pre-test, 47(94%) participants in the comparison group and 49(98%) participants in the study group had inadequate knowledge, while 3(6%) and 1(2%) participants, respectively, had moderate knowledge. There was no statistically significant difference between the groups in pre-test knowledge (χ^2=1.042, p=0.307). In the post-test, 47(94%) participants in the comparison group had inadequate knowledge, whereas none of the participants in the study group had inadequate knowledge. Moderate knowledge was observed among 3(6%) participants in the comparison group and 4(8%) participants in the study group, while 46 (92%) participants in the study group had adequate knowledge. The post-test findings demonstrated a statistical significant difference in knowledge between the groups (p<0.001). The mean knowledge score in the study group increased from 8.16$\pm$3.672 in the pre-test to 29.30$\pm$0.789 in the post-test, with a reported t value of 40.668 (p=0.001). A statistically significant association was found between selected demographic variables, particularly height and occupation, and the level of knowledge (p<0.001). Regarding obesity status, 28% of participants in the study group and 18% in the comparison group were overweight. Regarding blood pressure status, 58% of participants in the study group and 72% in the comparison group had Stage1 hypertension, while Stage 2 hypertension was observed in 6% of participants in the study group and 4% in the comparison group.

Conclusion: The study concluded that video-assisted teaching was effective in improving knowledge regarding the prevention of obesity and hypertension among adults. Video-assisted teaching can therefore be considered as effective health-education strategy for improving awareness and promoting healthy lifestyle practice among adults.

Keywords: Knowledge, Prevention, Obesity, Hypertension, Adults, Video-Assisted Teaching.

How to cite this article: Sweenie JE, Priya GM, Vishali C., Efficacy of Video Assisted Teaching (VAT) on Knowledge regarding Prevention of Obesity and Hypertension among adults in Ariyankuppam at Puducherry. Int J Drug Deliv Technol. 2026; 16(87s): 892-899. DOI: 10.25258/ijddt.16.87s.91
Source of support: Nil.
Conflict of interest: None

INTRODUCTION

**Author for Correspondence: drendna16@gmail.com*

Obesity is a caused by an excess of bodily fat. Obesity is more than simply a cosmetic tissue. It is a medical condition that raises the risk of numerous other illnesses and health issues. Heart disease, diabetes, high blood pressure, high cholesterol, liver disease, sleep apnea, and some types of cancer are example of these. Some people struggle to lose weight for a variety of reasons.(1) Overweight and obesity have numerous risk factors. Some are individual factors including knowledge, skills, and behaviors. Others are in your environment, such as school, workplace, and community. Additionally, food industry tactics and marketing as well as social and cultural norms and values might also increase your risk.(2) Hypertension, occurs when the pressure in your blood vessels exceeds the normal rage (140/90 mmHg). It is a widespread condition but can pose significant health risks. Making lifestyle adjustments such as adopting a healthier diet, giving up tobacco, and increasing physical activities can assist in reducing blood pressure levels. However, some individuals may still require medication. The pressure in the blood vessels during the intervals between heartbeats is represented by the diastolic number. Hypertension is diagnosed if, when it is taken on two different days, the systolic blood pressure readings on both days is $\geq$140 mmHg and the diastolic blood pressure readings on both days is $\geq$90 mmHg. (3)

Approximately 1.9 billion people worldwide are overweight, and 650 million are obese, making obesity a rapidly growing global epidemic. In both industrialized and developing countries, it has grown to be a major public health concern. Due to urbanization, industrialization, and changes in lifestyle, overweight and obesity rates are also on the rise in India, the most developing nation. It is more common in women, rises with age, and is expected to quadruple by 2024. Compared to those of a healthy weight, those who are overweight or obese are more vulnerable to a number of clinical disorders, including type-2 diabetes, chronic renal disease, and cardiovascular disease, including hypertension. Numerous studies have shown a link between hypertension and being overweight or obese, underscoring the significance of tackling weight control. Hypertension is a worrying public health issue.(4)

Research on hypertension helps in identifying knowledge gaps and enhancing instruction to provide information on prevention, treatment, awareness, and lifestyle modification.(5) Adipose tissue secretes a variety of hormones and paracrine signals known as adipokines, which contribute to endothelial dysfunction at the cellular level. The compounds have a physiological function in vascular tone. Along with an increase in plasma renin activity, pro-inflammatory and vasoactive adipokines such angiotensinogen, angiotensin II, aldosterone, and resisting are secreted.(6)

OBJECTIVE OF THE RESEARCH STUDY

- To assess the level of knowledge regarding prevention of obesity and hypertension before and after intervention among adults in Ariyankuppam at Puducherry.
- To evaluate the efficacy of video assisted teaching on knowledge regarding prevention of obesity and hypertension among adults in Ariyankuppam at Puducherry.
- To assess the association between demographic variables and level of knowledge regarding prevention of Obesity and Hypertension among adults in Ariyankuppam at Puducherry

METHODS

Design and setting

Descriptive research, Quasi Experimental Research design (pre-test and post-test design with control group). The study conducted in Ariyankuppam, at Puducherry.

Sample size and sampling

Sample size is consists of 100 adults with the age group of 40-60 years.

Data collection Tool

The tool was developed and standardized by the extensive review of literature. The tool consists of two sections.

Section A: The Demographic Data

The section consists of age in years, gender, residence, level of education, body weight, BMI, blood pressure, family and medical history.

Section B: Knowledge questions

The section consists of lifestyle, diet pattern, sleep, physical activity.

This section consists of a Knowledge questionnaire regarding prevention of obesity and hypertension, containing 30 multiple-choice questions.

Data collection procedure

The informed consent is obtained from the study participants. The data is collected by using structured knowledge questionnaire. The collected data is organized in the spreadsheet for further data analysis. The organized data is analyzed by descriptive and inferential statistics.

Data analysis

Data analysis technique is used to reduce, organize and give meaning to data computerized and analyzed using SPSS version 25. The collected data were coded and analyzed by using descriptive and inferential statistics. The data analysis of data was done by the following methods.

RESULT

The prevalence of the obesity among 100 sample is 4(8%) in comparative group and 2(4%) in study group, having the BMI of <18.5. In comparative group 37(74%) and 34(68%) in study group having the BMI value of 18.5-24.9. in comparison group 9(18%) and 14(28%) in study group were having BMI of 25-29.9.

The distribution of blood pressure is 2(4%) in comparison group and 5(10%) in study group were in the level of

110/70-120/80 mm/Hg, 36(72%) in comparison group and 29(58%) in study group were in level of 130/80-140/80mm/Hg, 10 (20.0%) in comparison group and 13 (26.0%) in study group were in the level of 140/80-150/90 mm/hg. 2 (4.0%) in comparison group and 3 (6.0%) in study group were in the level of 150/90-160/100 mm/hg

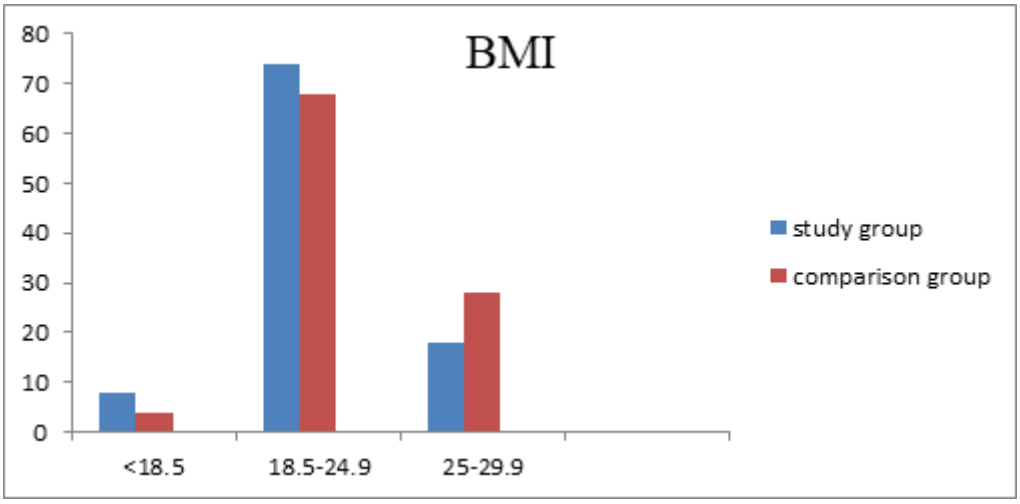


Figure 1.1.percentage distribution of BMI among adults

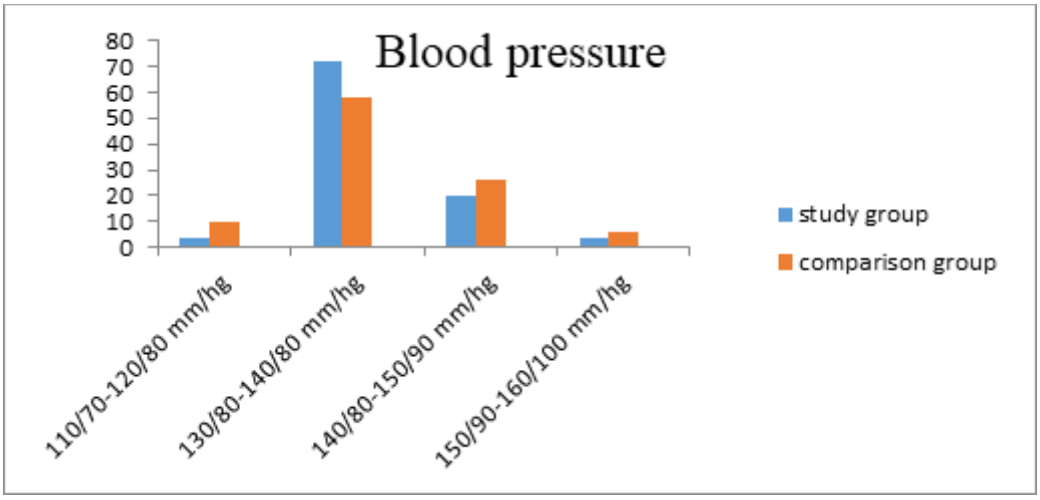


Figure 1.2 percentage distribution of blood pressure among adults

Table 1.1 comparison of pre-test and post-test level of knowledge on prevention of obesity and hypertension within the study and comparison group (n=100)

Observation	Group	Mean	Std. Deviation	Std. Error Mean	Independent t-test	p-value
Pre-test	Comparison group	9.04	3.614	0.511	1.208	0.115
	Study group	8.16	3.672	0.519		
Post-test	Comparison group	28.90	1.403	0.198	1.757	0.041
	Study group	29.30	0.789	0.112		

* P>0.05- non significant (NS)

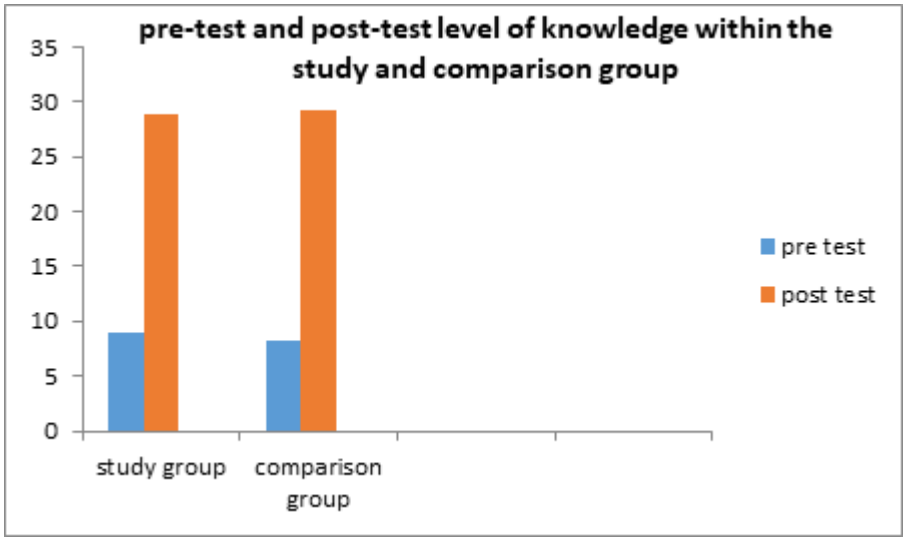


Figure 1.3 Mean score of level of knowledge on prevention of obesity and hypertension within the study and comparison group

Table 1.2 : Comparison of pre-test and post-test level of knowledgeon prevention of obesity and hypertension between the study and comparison group (n=100)

Group		Mean	Std. Deviation	Std. Error Mean	Independent t-test	df	p-value
Comparison group	Pre_test	9.04	3.614	0.511	36.383	49	<0.001 SS
	Post_test	28.90	1.403	0.198			
Study group	Pre_test	8.16	3.672	0.519	40.668	49	<0.001 SS
	Post_test	29.30	0.789	0.112			

***P<0.001- highly statistically significant (HSS)

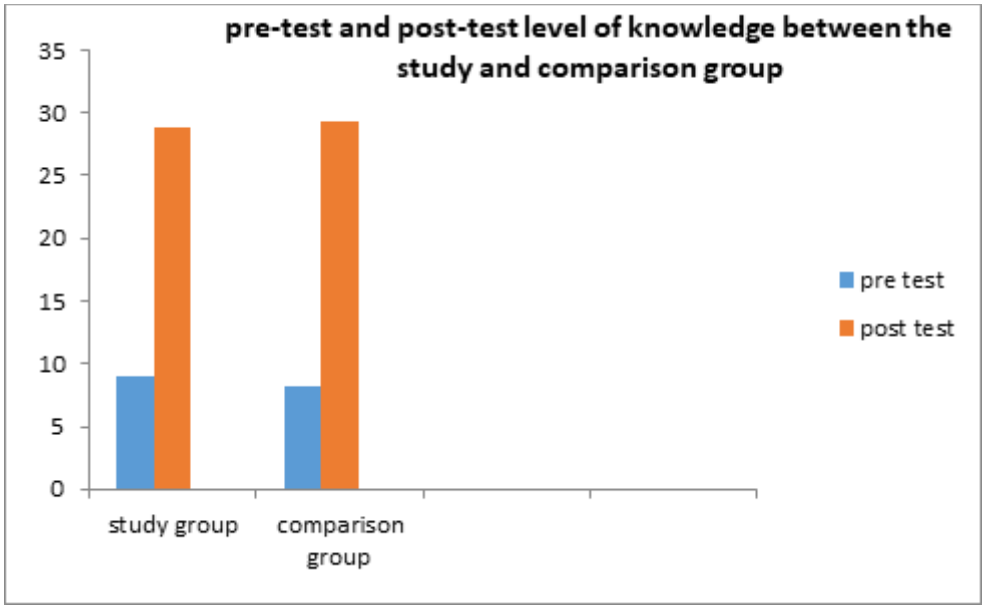


Figure 1.4 Mean score of level of knowledge on prevention of obesity and hypertension between the study and comparison group

Table 1.3 Frequency and percentage distribution of pre -test assessment on Knowledgeon prevention of obesity and hypertensionamong adults. (n=100)

Observation	Group				Chi-Square	p-value
	Comparison group		Study group			
	N	%	N	%		

Pre knowledge	Inadequate knowledge	47	94.0%	49	98.0%	1.042	0.307
	Moderate Knowledge	3	6.0%	1	2.0%		

* P>0.05- non significant (NS)

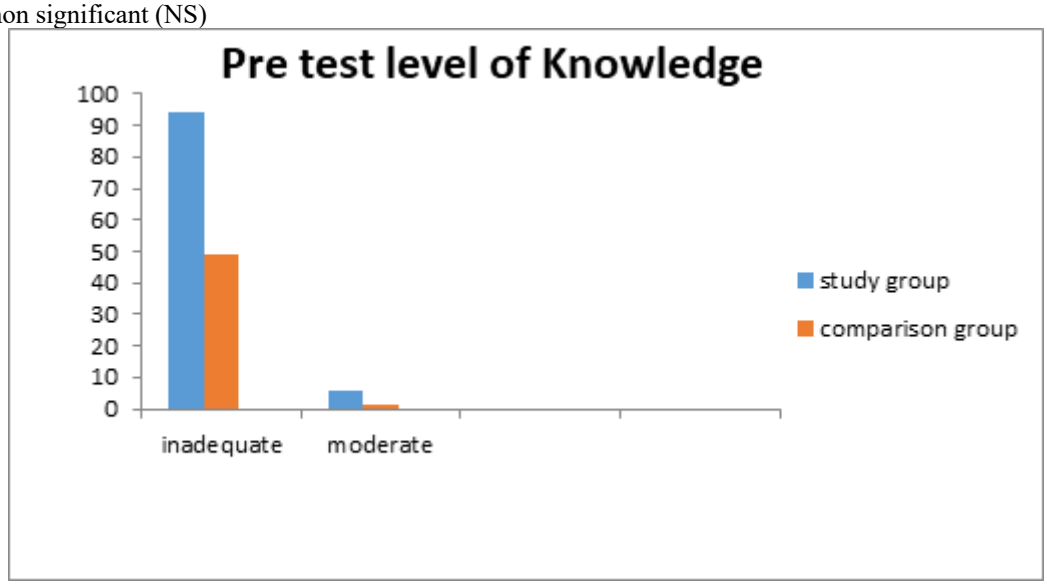


Figure 1.5 percentage distribution of level of knowledge on prevention of obesity and hypertension among adults in study and comparison group during pre-test

Table 1.4 Frequency and percentage distribution of pre -test assessment on Knowledgeon prevention of obesity and hypertensionamong adults. (n=100)

Observation		Group				Chi-Square	p-value
		Comparison group		Study group			
		N	%	N	%		
Post knowledge	Inadequate knowledge	47	94.0%	0	0.0%	0.0001	0.0001
	Moderate Knowledge	3	6.0%	4	8.0%		
	Adequate Knowledge	0	0.0%	46	92.0%		

***P<0.001- highly statistically significant (HSS)

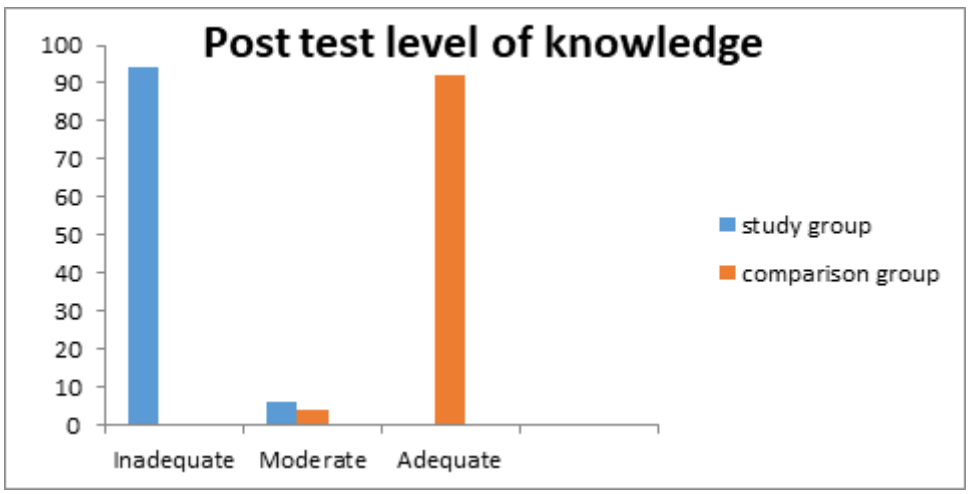


Figure 1.6 percentage distribution of level of knowledge on prevention of obesity and hypertension among adults in study and comparison group during post-test

Table 1.5 Association of selected demographic variable with level of knowledge on prevention of obesity and hypertension among adults (n=100)

S.No	Demographic Variable	Comparison group		Study group		Chi-Square	p-value
		n	%	n	%		
1.	**Age (in years)**						
	a. 45-50 years	13	60.0	28	56.0	0.240	0.887 N.S
	b. 51-55 years	17	34.0	18	36.0		
	c. 56-60 years	3	6.0	4	8.0		
2.	**Gender**						
	a. Male	8	16.0	5	10.0	0.796	0.372 N.S
	b. Female	42	84.0	45	90.0		
3.	**Residence**						
	a. Rural	50	100	50	100	0.0	0.0
4.	**Education Level**						
	c. No formal	13	26.0	12	24.0	0.070	0.995 N.S
	d. Primary	16	32.0	17	34.0		
	e. Secondary	13	26.0	13	26.0		
	f. Graduate	8	16.0	8	16.0		
5.	**Occupation**						
	a. Labor work	36	72.0	21	42.0	9.180	0.002 **S.S***
	b. House wife	14	28.0	29	58.0		
6.	**Waist circumference (cm):**						
	a. 75-85 cm	12	24.0	8	16.0	4.870	0.182 N.S
	b. 86-95 cm	29	58.0	28	56.0		
	c. 96-105 cm	9	18.0	10	20.0		
	d. 106-115 cm	0	0.0	4	8.0		
7.	**Weight……kg**						
	a. 50-65 kg	4	8.0	2	4.0	1.880	0.391 N.S
	b. 66-80 kg	37	74.0	34	68.0		
	c. 81-95 kg	9	18.0	14	28.0		
8.	**Height…….cm**						
	a. 140-150 cm	37	74.0	29	58.0	2.852	0.091 **S.S***
	b. 151-160 cm	13	26.0	21	42.0		
9.	**BMI……**						
	a. <18.5	4	8.0	2	4.0	1.880	0.391 N.S
	b. 18.5-24.9	37	74.0	34	68.0		
	c. 25-29.9	9	18.0	14	28.0		
10.	**Blood Pressure value ……mmHg**						
	a. 110/70-120/80 mm/hg	2	4.0	5	10.0	2.631	0.452 N.S
	b. 130/80-140/80 mm/hg	36	72.0	29	58.0		
	c. 140/80-150/90 mm/hg	10	20.0	13	26.0		
	g. 150/90-160/100 mm/hg	2	4.0	3	6.0		

***P<0.001- highly statistically significant, **p<0.01- statistically significant, *p<0.05- significant, p>0.05-non significant (NS)

DISCUSSION

The present study was conducted to assess the level of knowledge regarding the prevention of obesity and hypertension among adults and to determine the association between selected demographic variables and the pre-test level of knowledge. A total of 100 adults participated in the study, with 50 subjects allocated to the study group and 50 subjects to the comparison group. The findings obtained during the pre-test and post-test assessments are discussed below.

The baseline findings related to body mass index (BMI) showed that, in the comparison group, 4(8%) participants had a BMI of less than 18.5 kg/m^2, indicating that they were underweight, whereas 2(4%) participants in the study group were in the same category. The majority of participants had a BMI within the normal range of 18.5-24.9 kg/m^2, accounting for 37(74%) participants in the comparison group and 34(68%) participants in the study group. Furthermore, 9(18%) participants in the comparison group and 14(28%) participants in the study group had a BMI between 25.0 and 29.9 kg/m^2, indicating that they were

overweight. These findings demonstrate the presence of overweight individuals in both groups and highlight the importance of preventive education concerning obesity and its associated health risks.

Regarding blood pressure, 2(4%) participants in the comparison group and 5(10%) participants in the study group had blood pressure readings within the range of 110/70-120/8- mmHg. A substantial proportion of participants, 36(72%) in the comparison group and 29(58%) in the study group, had blood pressure readings in the range of 130/80-140/80 mmHg. In addition, 10(20%) participants in the comparison group and 13(26%) participants in the study group had readings between 140/80 and 150/90 mmHg, while 2(4%) participants in the comparison group and 3(6%) participants in the study group had readings between 150/90 and 160/100 mmHg. The findings indicate that a considerable proportion of participants had elevated blood pressure readings, emphasizing the need for awareness and preventive measures related to hypertension.

The pre-test assessment of knowledge revealed that the majority of participants in bothe group had an inadequate level of knowledge regarding the prevention of obesity and hypertension. Among the 50 participants in the study group, 49(98%) had an inadequate level of knowledge, while only 1(2%) participants had a moderate level of knowledge. Similarly, in the comparison group 47(94%) participants had an inadequate level of knowledge and 3(6%) had a moderate level of knowledge. No participants in either group demonstrated an adequate level of knowledge during the pre-test. These findings suggest that the participants had limited baseline knowledge regarding the prevention of obesity and hypertension and therefore indicate a clear need for structured health education.

The post-test findings demonstrated a statistical significant difference in knowledge between the groups ($p<0.001$). The mean knowledge score in the study group increased from 8.16 ± 3.672 in the pre-test to 29.30 ± 0.789 in the post-test, with a reported t value of 40.668 ($p=0.001$). A statistically significant association was found between selected demographic variables, particularly height and occupation, and the level of knowledge ($p<0.001$). Regarding obesity status, 28% of participants in the study group and 18% in the comparison group were overweight. Regarding blood pressure status, 58% of participants in the study group and 72% in the comparison group had Stage1 hypertension, while Stage 2 hypertension was observed in 6% of participants in the study group and 4% in the comparison group.

Overall, the findings of the present study demonstrate that the participants initially had inadequate knowledge regarding the prevention of obesity and hypertension. The substantial improvement in knowledge observed among the study-group participants after the intervention indicates that a structured educational approach can be effective in improving awareness and knowledge related to healthy lifestyle practices and prevention of obesity and hypertension. The findings therefore support the importance of providing regular, accessible, and structured health education to adults to promote preventive health practices and reduce the risk of obesity and hypertension.

SUMMARY

A employed a descriptive research design and a quasi-experimental pre-test and post-test design with comparison group to assess the effectiveness of a video-assisted teaching programme on the prevention of obesity and hypertension among adults. The study was conducted in Ariyankuppam, Puducherry. A total of 100 adults were included, with 50 participants assigned to the study group and 50 to the comparison group. Demographic data were collected using interview schedule. The level of knowledge regarding the prevention of obesity and hypertension was assessed in both the groups using a structured knowledge questionnaire. Following the pre-test assessment, a video-assisted teaching programme on prevention of obesity and hypertension was administered to the study group, while the comparison group received no such intervention. A post-test was conducted after 7 days using the same knowledge questionnaire. The collected data were computerized and analyzed using SPSS version 25.0. Both descriptive statistics, including frequency, percentage, mean and standard deviation, and inferential statistics were used to analyse the data and determine the effectiveness of the intervention and the association between selected demographic variables and the level of knowledge.

CONCLUSION

The present study was conducted to evaluate the Efficacy of Video Assisted Teaching (VAT) on Knowledge regarding Prevention of Obesity and Hypertension among adults in Ariyankuppam at Puducherry. The findings demonstrated that the participants in the study group showed a marked improvement in their level of knowledge following the intervention compared with the comparison group. The substantial increase in post-test knowledge indicates that the Video-assisted teaching programme was effect5ive in enhancing participants understanding of the risk factors, preventive measures, and healthy lifestyle practices related to obesity and hypertension.

The study findings suggest that structured and easily accessible health education interventions such as video-assisted teaching can be an effective strategy for improving knowledge and promoting awareness regarding the prevention of obesity and hypertension among adults. Improved knowledge may facilitate the adoption of appropriate lifestyle practices, including healthy dietary habits, regular physical activity, weight management, and monitoring of blood pressure. Therefore, video-assisted teaching can be considered a useful educational approach for promoting preventive health practices and supporting the maintenance of a healthier lifestyle among adults.

Overall, the study concludes that the video-assisted teaching programme was effective in improving knowledge regarding the prevention of obesity and hypertension

among adults and may serve as a valuable health-education strategy for community-based preventive programme.

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