



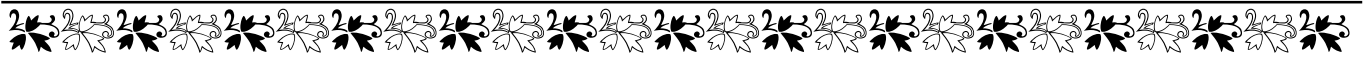
## Effect of VAT on Cad Risk Factors with Regard to Hypertensive Safety Bundle Care Therapy (HSBCT) among the Adults with Hypertension



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**ABSTRACT: Background:** Coronary artery disease (CAD) is the most common cause of mortality among adults in the United States. While common, it is preventable. CAD and its risk causes can be screened, identified, and treated early. Education and counselling can also help mitigate risk. This study assessed the effect of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among the adults with hypertension. **Objectives:** 1. To assess the pretest and post test level of the CAD risk factors among adults with hypertension in the experimental group and control group. 2. To evaluate the effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension in the experimental group compare to control group. 3. To associate the post test scores of effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension with their selected socio demographic variables. **Methods:** The individuals with hypertension in this cross-sectional study are from rural areas of Nellore district. A total of 300 adults with hypertension were randomly selected. Trained investigators administered a checklist on CAD risk factors tool to each participant during a face to face discussion and carried out data collection procedure in pretest after that video assisted teaching (VAT) on hypertensive safety bundle care therapy (HSBCT) on was shown to the experimental group and then post test was conducted for both experimental and control group adults with hypertension like Assessment I On 30 days, Assessment II On 60 days and Assessment III On 90 days. **Results:** The results shown that the effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension in the experimental group compare to control group. In experimental group pre test mean value is 22.68, SD value is 6.77 and post test mean value is 14.33, SD value is 6.75 and mean difference value is 8.35. The paired “t” test value is 17.121, P value is 0.001. Hence it is significant but in students independent “t” test value is 0.181, P value is 0.857 and mean difference value is 0.15, there is not significance. In control group pre test mean value is 22.83, SD value is 7.89 and post test mean value is 23.24, SD value is 7.82 and mean difference value is 0.41. The paired “t” test value is 1.597, P value is 0.112. Hence it is significance and also in students independent “t” test value is 10.924, P value is 0.0001 and mean difference value is 8.84 and it’s significant. **Conclusions:** The study result proved that the effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension in the experimental group was factual. So, this method of video teaching on hypertensive safety bundle care therapy (HSBCT) can be promoted by nurses in their day to day activities in hospital and community settings. **Keywords:** hypertensive safety bundle care therapy (HSBCT), CAD risk factors, hypertension, Adults.



## **INTRODUCTION:**

Cardiovascular diseases (CVDs) are the leading causes of mortality globally, with an estimated 17.9 million deaths reported due to cardiovascular diseases in 2016, representing 31% of all global mortality. Ischemic heart disease is still the primary leading cause of mortality in Malaysia; in 2017, it accounted for 13.9% of all deaths in Malaysia. A heart attack is defined as a obstruction in the arteries which supply the heart muscles with blood and oxygen, and it is normally characterized by chest pain, difficulty breathing, as well as pain in the neck and arms. Many risk factors commit to heart attacks, such as hypertension, diabetes, obesity, hypercholesteremia, physical inactivity, unhealthy diet, smoking, stress, as well as atrial fibrillation. Risk factors for cardiovascular disease play an important role in the development of ischemic heart disease. For that reason, knowledge and awareness of these risk factors for CVD play a significant role in preventing CVD and complications linked to this disease.

Numerous studies reported that a lack of awareness about disease risk factors and poor literacy rates in developing nations are accompanying with worse disease outcomes. Therefore, it was reported that CVD leads to high rates of hospital admissions and increasing rates of mortality. One of the most simple ways to decrease the CVD burden among the general public is to control modified risk factors (consumption of fatty foods, obesity, lack of working out, smoking, hypertension, diabetes, dyslipidemia, lack of exercise, stress). Knowledge of these modified risk factors can be needed to introduce behavioral change strategies or targets through intervention programs. However, the rarity of education towards managing the risk factors for CVD can lead the public to fail to realize the signs and symptoms of CVD. The level of knowledge of the risk factors for heart attack

in the general population is not given sufficient attention.

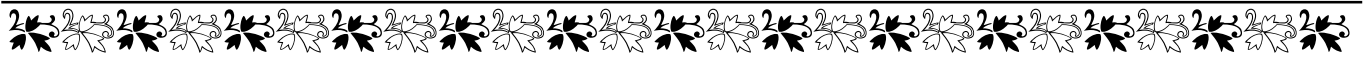
Besides, there are a limited number of studies accompanied among patients as well as students in these areas. In a study involving South Asian family participants, they were less likely to accept lifestyle management and had lower awareness of a balanced diet or food content (fiber, sugar, salt). The purpose of the current study is to evaluate the effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension.

## **Materials and Methods**

This study was carried out in rural areas of Nellore district, the target population of this study consisted of all adults with hypertension who met the inclusion criteria like who are between 20-60 years, who are available during the data collection time. The target population of this study consisted of 300 adults with hypertension. Sample size was calculated to estimate the evaluate the effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension, Nellore, considering a confidence level of 95%, sampling error of 3 percentage points, percentage of losses estimated at 10%. Based on these parameters, we obtained a sample size of 300 adults with hypertension. For association tests, considering an estimated prevalence of the outcome of 50%, 80% power and 95% confidence level, this sample size would allow detecting as statistically significant VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) ratio of up to 1.4 as a risk factor and up to 0.6 as protective factor for both genders.

## **TOOLS FOR DATA COLLECTION:**

The tool was divided in to 2 parts.



**Section-I:** It deals with demographic variables Age, Gender, Educational status, Occupation, Family Income, Marital status, Type of family, Dietary pattern, Use of anti hypertensive medication.

**Section-II:** It deals with the effect of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension.

**DATA COLLECTION PROCEDURE:**

This study was conducted in rural areas of Nellore district during 2016. This study comprises of both male and female adults between 20-60 years, adults who are not willing to participate and to give informed consent were excluded from the study. VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension. After obtaining permission from Institutional ethics committee formal permission was obtained from the Principal, and Medical officer, Mutukuru. The Study was conducted among rural adults of Mutukuru villages like Krishna Patnam, Malluru, Valluru and Bramhadevi villages, Nellore district, Andhra Pradesh State to conduct main study. Informed consent was obtained from hypertensive adults. The main study was conducted among 300 adults with hypertension. The samples were selected by using simple random sampling technique by computer generated random number method. 150samples were assigned to experimental group and 150 samples to control group. Pretest was done by using socio-demographic variables and checklist on CAD risk factors, was checked for both experimental and control groups. The intervention video assisted teaching on CAD risk factors was shown. Was used research assistants for the reinforcement of the activities among adults with hypertension for 3 months. Posttest was conducted like Assessment I On 30 days, Assessment II On 60 days and Assessment

III On 90 days. Data was tabulated, analyzed and interpreted according to the objectives and hypothesis of the study by using descriptive and inferential statistical methods like Frequency and percentage distribution, Mean, Median, Mode and Standard Deviation, paired t test, student t test, ANOVA and chi square.

**RESULTS AND DISCUSSION:**

A total of 300 adults with hypertension were participated in the study. The socio demographic variables shown that in relation to age 74 (49.3%) were between (40-45 years), 76 (50.7%) were between (45-50 year), in experimental group. In control group in relation to age 84(56.0%) were between (40-45 years), 66(44.0%) were between (45-50 years) and in relation to dietary habits in experimental group 69(46.0%) were vegetarian and 81(54.0%) were non-vegetarian. In control group 84(56.0%) were vegetarian and 66(44.0%) were non-vegetarian.

**SECTION I: Distribution on CAD risk factors among adults with hypertension in experimental and control groups.**

**Table 1: Frequency and percentage distribution of level of CAD risk factors among adults in the experimental and control group.**

**N = 300(150+150)**

Risk Factors	Experimental Group				Control Group			
	Pre Test		Post Test		Pre Test		Post Test	
	No.	%	No.	%	No.	%	No.	%
Normal	19	12.66	112	74.67	26	17.3	24	16.0
Mild Risk for CAD	109	72.67	37	24.66	98	65.3	98	65.3
Moderate Risk for CAD	22	14.67	1	0.67	26	17.3	28	18.7
Severe Risk for CAD	-	-	-	-	-	-	-	-
Chi-Square Test Value	$\chi^2=120.704, p=0.0001, S^{***} \chi^2=0.154, p=0.926, N.S$							

Table 1: Clarifies that the level of CAD risk factors among adults in the experimental and control group. In experimental group pre test value 19(12.66%) had



normal, 109(72.67%) had mild risk for CAD and 22(14.67%) had moderate risk for CAD and post test value 112(74.67%) had normal, 37(24.66%) had mild risk for CAD and 1(0.67%) had moderate risk for CAD. The  $X^2$  value is 120.704 and P value is 0.0001 and there is significance. In control group pre test value 26(17.3%) had normal, 98(65.3%) had mild risk for CAD and 26(17.3%) had moderate risk for CAD and post test value 24(16.0%) had normal, 98(65.3%) had mild risk for CAD and 28(18.7%) had moderate risk for CAD. The  $X^2$  value is 0.154, P value is 0.926 and there is not significance.

**Fig.no.1:** Percentage distribution of level of CAD risk factors among adults with hypertension in the experimental and control group.

### Risk for CAD

**Table 2:** Effectiveness of VAT on prevention of CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension in the experimental group compare to control group.

**N = 300(150+150)**

Risk Factors	Pre test		Post Test		Mean Difference	Paired 't' Test Value
	Mean	S.D	Mean	S.D		
Experimental Group	22.68	6.77	14.33	6.75	8.35	t = 17.121 p=0.0001 S***
Control Group	22.83	7.89	23.24	7.82	0.41	t = 1.597 p=0.112 N.S
Mean Difference Student Independent	0.15	8.84				
't' Test Value	t=0.181 p=0.857 N.S		t=10.924 p=0.0001 S***			

\*\*\*p<0.001, S – Significant, N.S – Not Significant

Table 2: Denotes that Effectiveness of VAT on prevention of CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension in the experimental group compare to control group. In experimental

group pre test mean value is 22.68, SD value is 6.77 and post test mean value is 14.33, SD value is 6.75 and mean difference value is 8.35. The paired 't' test value is 17.121, P value is 0.001. Hence it is significance but in students independent 't' test value is 0.181, P value is 0.857 and mean difference value is 0.15, there is not significance. In control group pre test mean value is 22.83, SD value is 7.89 and post test mean value is 23.24, SD value is 7.82 and mean difference value is 0.41. The paired 't' test value is 1.597, P value is 0.112. Hence it is significance and also in students independent 't' test value is 10.924, P value is 0.0001 and mean difference value is 8.84 and its significance.

**SECTION - II:** Correlation between post test scores of selected parameters of HSBCT with CAD risk factors among adults with hypertension in the experimental group.

**Table - 3:** Correlation between post test scores of selected parameters of HSBCT with CAD risk factors among adults with hypertension in the experimental group.

**n = 150**

Variables	Risk for CAD (Mean: 14.33, S.D: 6.74)		Karl Pearson's Correlation value
	Mean	S.D	
Systolic BP	127.33	10.22	r= 0.351 p=0.0001, S***
Diastolic BP	76.87	7.65	r= 0.332 p=0.0001, S***
DASH adherence (-)	8.07	1.01	r= -0.312 p=0.0001, S***
Physical activity (-)	1.90	0.30	r= -0.383 p=0.0001, S***
BMI	24.02	4.21	r= 0.307 p=0.0001, S***
WHR	0.85	0.04	r= 0.315 p=0.0001, S***
Stress	8.10	1.53	r= 0.416 p=0.0001, S***
Stress management (-)	7.15	0.90	r= -0.310 p=0.0001, S***
Medical adherence (-)	3.57	0.49	r= -0.402 p=0.0001, S***



\*\*\* $p < 0.001$ , S – Significant

**Table 3:** Illustrates that Correlation of post test scores of selected parameters of HSBCT with risk for CAD among adults with hypertension in the experimental group. In systolic BP mean value is 127.33, SD value is 10.22. The correlation value of “r” is 0.351, P value is 0.0001 and it is not significant. In diastolic BP mean value is 76.87, SD value is 7.65. The correlation value of “r” is -0.332, P value is 0.0001 and it is not significant. In dash adherence mean value is 8.07, SD value is 1.01. The correlation value of “r” is -0.312, P value is 0.0001. Hence it is significant. In physical activity mean value is 1.90, SD value is 0.30. The correlation value of “r” is -0.383, P value is 0.0001 and it is significant. In BMI mean value is 24.02, SD value is 4.21. The correlation value of “r” is -0.383, P value is 0.0001 and it is significant. In WHR mean value is 0.85, SD value is 0.04. The correlation value of “r” is 0.315, P value is 0.0001 and it is significant. In stress mean value is 8.10, SD value is 1.53. The correlation value of “r” is 0.416, P value is 0.0001 and it is significant. In stress management mean value is 7.15, SD value is 0.90. The correlation value of “r” is -0.310, P value is 0.0001 and it is significant. In medical adherence mean value is 3.57, SD value is 0.49. The correlation value of “r” is -0.402, P value is 0.0001. Hence it is significant.

### Discussion

This study aimed to effectiveness of VAT on CAD risk factors with regard to hypertensive safety bundle care therapy (HSBCT) among adults with hypertension. The pretest results shows higher levels of CAD risk factors in both experimental and control groups. But in post test there was increase in moderate CAD risk factors in the control group, these risk factors are decreased for the experimental group drastically which shows the effectiveness of the video assisted teaching. Early prevention as well as changes

in sedentary lifestyle behaviours endure the best approaches.

The control of adjustable risk factors for heart attack is important to prevent cardiovascular diseases. Yet, the results are comparable with previously directed studies in Asia. If the populace, mostly the youth, has a good perception of the risk factors for CVD, they will be capable of accepting primary preventive measures earlier in their lives. It could be assumed that smoking is the major cause of nearly one-third of the deaths by CVDs and was recognized as a risk factor for heart attack by the highest proportion of respondents in the US.<sup>24</sup> Similarly, it was the most significant risk factor identified by the participants in this research.

**Limitations:** This research study was however limited to minimal limitations. Initially, the researcher has difficulty in gathering all the participants in a single area due to post pandemic effect of Covid-19. Further studies are recommended, with a large sample size covering more towns and random samples with clinical trials.

**Conflict of Interest:** The authors confirm that they have no conflicts of interest for this study.

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