EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON KNOWLEDGE REGARDING HEALTH PROBLEMS DUE TO DECREASED PHYSICAL ACTIVITY AMONG SECONDARY SCHOOL CHILDREN IN A SELECTED SCHOOL IN TUMKUR, KARNATAKA, INDIA

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Abstract: **Child health is fundamental to adult health and wellbeing. Physical activity during childhood is one of the important aspects which promote better health. Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Health problems associated with decreased physical activity such as overweight / obesity, poor oral health, diabetes and other chronic physical and mental health problems among adolescence are increasing worldwide. In the present study data was collected on knowledge regarding health problems due to decreased physical activity among secondary school children in a selected school at Tumkur. A quasi experimental one group pre-test post-test design was used for this study. The study was carried out in selected school at Tumkur, Karnataka. The sample comprised of 100 school children studying in 8th, 9th and 10th standard in a selected school at Tumkur. The students were selected by stratified random sampling. The pre-test was followed by the implementation of video assisted teaching programme and post test was conducted after 7 days using the same structured questionnaire. The results were described by using descriptive and inferential statistical analysis. Results of the study revealed that the overall post- test mean knowledge score19.26 (64.2%.) were significantly higher than the overall mean pre-test knowledge scores 11.33 (37.77%) and the obtained 't' value 27.749 is greater than the table value at 0.05 level of significance. The findings of this study support that video assisted teaching was effective in improving the knowledge of the secondary school children regarding health problems due to decreased physical activity**.

Keywords: **Effectiveness, health problems, physical activity, knowledge, secondary school children.**

I. INTRODUCTION

Children's health encompasses the physical, mental, emotional and social wellbeing not merely the absence of disease or infirmity. Healthy children live in family, environment and community that provide them an opportunity to reach their fullest developmental potential. Child health is fundamental to adult health and well-being. When children's health is nurtured and supported and there is an absence of physical and mental abuse or other intentional childhood trauma, the stage is set up for good adulthood less likely to involve chronic health problems such as overweight / obesity, poor oral

health, diabetes and other chronic physical and mental health problems. Physical activity during childhood is one of the important aspects which promote better health.[1]

Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Physical activity includes exercise as well as other activities which involve bodily movement that are a part of playing, working, active transportation, house chores and recreational activities [2]. Physical activities promote healthy growth and development. It helps build a healthier body composition, stronger bones and muscles. It also improves the child's cardiovascular fitness. Physical activities help in the development of better motor skills and in concentration and thinking skills [3]. Despite of well-known effect of physical activity most adult and many children lead a relatively sedentary life style and are not active enough to achieve these health benefits. Data from National health interview in USA shows that more than one third of the young people do not regularly engage in vigorous physical activity. Physical activity declines dramatically over the course of adolescence [4]. The recommendation of physical activity for children is to participate at least 60 minutes each day. Global school health survey conducted by WHO in 2007 shows that physical activity level was significantly lower among female students than males. Around 25.3% male students are physically active for all seven days against13.8% of female students. The percentages of male and female students who participate in insufficient physical activities are 81.6% and 65.5% respectively [5].

Most of school children are not aware of the importance of physical activity for preventing these health problems. Health teaching should provide for the children regarding health problems of physical inactivity and benefits of physical activity. Studies shown that media based physical education intervention are more effective. Video assisted teaching consists of videos and images regarding health problem due to decreased physical activity. This will help the children for better understanding and this also promote their interest in teaching [6]

II. OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding health problems due to decreased physical activity among secondary school children in a selected school in Tumkur.

2. To evaluate the effectiveness of video assisted teaching on knowledge regarding health problems due to decreased physical activity among secondary school children.

3. To find out the association between pre-test level of knowledge and selected socio demographic variables.

III. MATERIALS AND METHODS

A. Design, Setting and Sampling Technique

The research approach adopted for this study was evaluative approach, where the research design was quasi – experimental; one group pre -test and post-test design. The samples were100 Children studying in 8th, 9thand 10th standards in selected school at, Tumkur, Karnataka. Stratified random sampling technique was used to select the sample. The independent variable was the video assisted teaching programme. The dependent variable was the knowledge score. The tool used for the study consists of 2 parts, Demographic data and structured questionnaire comprises of 30 questions.

B. Data Collection Procedure

The pilot study was conducted at Jain Public School, Oorkere, Tumkur, Karnataka after obtaining the permission from the principal of Jain Public School. The investigator selected 10 children by non-probability convenient sampling technique. The data collection was carried on Siddaganga high school, Tumkur, Karnataka. The investigator gave self-introduction, explained the purpose of the study and the subject's willingness to participate in the study was ascertained. The subjects were assured anonymity and confidentiality of information provided by them and a written informed consent was obtained. The pre-test was conducted, video assisted teaching programme was administered at the end of the pre-test and the post-test was carried out seven days later using the same tool as that of the pre-test

C. Data Analysis

The data were analysed by using descriptive and inferential statistics. Demographic data was analysed using frequency and percentage. Pre-test and post-test knowledge was analysed by computing mean, standard deviation. Paired 't' test was used to test the significant difference in the pre-test and post-test knowledge scores. Chi-square test was used to find the association between the pre-test level of knowledge with socio-demographic variables.

D. Ethical Consideration

The ethical clearance was obtained   from Sree Siddaganga Institute of Nursing Sciences and research centre, Tumkur for conducting the study. Permission taken from the principal of Siddaganga high school, Tumkur. Purpose of the study was explained and an informed consent was obtained from the samples

IV.   RESULTS

Section 1: Frequency and percentage distribution of the socio-demographic variables.

Majority of children 59 (59%) were males, 35(35%) children were from 8th standard, 35(35%) children were from 9th standard and 30(30%) children were from 10th standard. Regarding religion shows majority of children 93(93%) were Hindu. It was found that 53(53%) children were vegetarian and 47(47%) were having mixed diet. Majority of children 56(56%) were from joint family, majority of children's fathers 29 (29%) were graduate and 22(22%) were have high school education. Regarding education of mother's majority of children's mothers 32(32%) were have high school education and 27(27%) were graduate. 39(39%) of the children's fathers were government employee and 38(38%) were self-employed. Majority of children's mothers were 52(52%) house wife, majority of children's family were 40(40%) have monthly income above 15,000. It was found that majority of children 49(49%) were spending two hours a day for physical activity,34(34%) children were got information regarding health problems due to decreased physical activity through mass media and 33(33%) were got information from health personnel (Table I).

TABLE I: DISTRIBUTION OF DEMOGRAPHIC VARIABLES ACCORDING TO BASELINE CHARACTERISTICS (N=100)

Demographic variables		Frequency(f)	Percentage %
Gender	Male	59	59
	Female	41	41
Standard	VIII std	35	35
	IX std	35	35
	X std	30	30
Religion	Hindu	93	93
	Christian	1	1
	Muslim	5	5
	Others	1	1
Type of diet	Mixed	47	47
	vegetarian	53	53
Type of family	Nuclear	37	37
	Joint	56	56
	Extended	7	7
Educational status of the father	Illiterate	6	6
	Primary school	7	7
	Middle school	8	8
	High school	22	22
	Intermediate /PUC	8	8
	Graduate	29	29
	Post graduate	20	20
Educational status of the mother	Illiterate	5	5
	Primary school	4	4
	Middle school	5	5
	High school	32	32
	Intermediate /PUC	12	12
	Graduate	27	27
	Post graduate	15	15
Occupational status of the father	Government employee	39	39
	Private employee	22	22
	Self employed	38	38
	Unemployed	1	1

Occupational status of the mother	Government employee	18	18
	Private employee	15	15
	Self employed	15	15
	Unemployed	52	52
Monthly income of the family	Less than Rs 5000	7	7
	Rs 5000-10000	25	25
	Rs 10001-15000	28	28
	Above Rs 15000	40	40
Duration of time spending in physical activity	2 hours	49	49
	1 hour	22	22
	30 minutes	17	17
	15 minutes	7	7
	Not spending	5	5
Source of information	Mass media	34	34
	Health personal	33	33
	Formal education	18	18
	Self-reading	15	15

Section II: Analysis of pre-test knowledge regarding health problems due to decreased physical activity among secondary school children

71% secondary school children had moderately adequate knowledge, 29% had inadequate knowledge and no one had adequate knowledge regarding health problems due to decreased physical activity (Table II).

TABLE II: PERCENTAGE DISTRIBUTION OF SECONDARY SCHOOL CHILDREN BASED ON PRE-TEST LEVEL OF KNOWLEDGE REGARDING HEALTH PROBLEMS DUE TO DECREASED PHYSICAL ACTIVITY. n= 100

Level of knowledge	Frequency(f)	Percentage (%)
Adequate	0	0
Moderately adequate	71	71
Inadequate	29	29
Total	**100**	**100**

Section III: Analysis of post-test knowledge regarding health problems due to decreased physical activity among secondary school children

In post- test 59% had moderately adequate knowledge, 41% had adequate knowledge and no one had inadequate knowledge regarding health problems due to decreased physical activity (Table III).

TABLE III: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SECONDARY SCHOOL CHILDREN BASED ON POST-TEST   LEVEL OF KNOWLEDGE REGARDING HEALTH PROBLEMS DUE TO DECREASED PHYSICAL ACTIVITY N=100

Level of Knowledge	Frequency (f)	Percentage (%)
Adequate	41	41.0
Moderately adequate	59	59.0
Inadequate	0	0
Total	**100**	**100.0**

Section IV: Analysis of effectiveness of video assisted teaching programme on knowledge regarding health problems due to decreased physical activity

To find the significance difference between pre-test and post-test level of knowledge of secondary school children, the following research hypothesis was stated:

H_1- There will be significant difference between pre-test and post-test knowledge scores regarding health problems due to decreased physical activity among secondary school children

This hypothesis was tested using paired 't' test. Overall mean knowledge score of pre-tests was 11.33 and post-test was 19.26 and mean difference was 7.930 with standard deviation of 2.858. The obtained 't' value 27.749 is greater than the table value at 0.05 level of significance. Therefore, "t" value found to be significant. It shows that there is a significant difference between pre-test and post-test knowledge score of secondary school children regarding health problem due to decreased physical activity. Therefore, the research hypothesis (H_1) was accepted (Table IV).

TABLE IV: DETERMINATION OF OVERALL MEAN KNOWLEDGE SCORE BEFORE AND AFTER VIDEO ASSISTED TEACHING. N=100

Area of Knowledge	Pre-test		Post-test		Difference		Student's paired t-test	Inference
	Mean	SD	Mean	SD	Mean	SD		
Overall	11.33	3.201	19.26	2.452	7.930	2.858	t=27.749	*

p-0.000, df=99, *- Significant at 0.05 level of significance

Section V: Association between the pre-test levels of knowledge with selected socio-demographic variables.

To test the association between the pre-test levels of knowledge with selected socio-demographic variables, the following hypothesis formulated

H_2- There will be significant association between the pre-test levels of knowledge with selected socio-demographic variables.

Chi square value computed between the pre-test level of knowledge with selected socio-demographic variables. Variable gender (χ^2=4.801) was found to be significant at 0.05 level. Variables of standard (χ^2=1.778), religion (χ^2=1.069), type of diet(χ^2 = 1.095), type of family(χ^2 = 1.3)educational status of father (χ^2 =5.958),educational status of mother(χ^2 =6.162), occupation of father (χ^2=3.887),occupation of mother(χ^2=3.914),monthly income of family(χ^2= 6.834),number of hours spending in physical activity(χ^2 =1.129)and source of information regarding health problems due to decreased physical activity (χ^2 =0.654) were found to be not significant at 0.05 level. Thus, it can be interpreted that there is significant association between the pre-test level of knowledge with socio-demographic variables gender.   There is no significant association between the pre-test level of knowledge with standard, religion, type of family, educational status of father, educational status of mother, occupation of father, occupation of mother, monthly income of family, number of hours spending in physical activity and source of information regarding health problems due to decreased physical activity. So the H_2 hypothesis was accepted for gender and rejected for other sociodemographic variables. (Table V)

TABLE V: ASSOCIATION BETWEEN THE SELECTED DEMOGRAPHIC VARIABLES AND PRETEST LEVEL OF KNOWLEDGE (N=100)

Demographic variables		N	LEVEL OF KNOWLEDGE		CHI-SQUARE TEST
			Moderately adequate	Inadequate	
Gender	Male	59	37	22	**Chi-Square Test** = 4.801 df=1 p=0.028*
			62.70%	37.30%	
	Female	41	34	7	
			82.90%	17.10%	
Standard	VIII std	35	26	9	**Chi-Square Test** = 1.778 df=2 p=0.411 NS
			74.30%	25.70%	
	IX std	35	22	13	
			62.90%	37.10%	
	X std	30	23	7	
			76.70%	23.30%	
Religion	Hindu	93	65	28	**Chi-Square Test** = 1.069 df=3
			69.90%	30.10%	

	Christian	1	1	0	p=0.785
			100.00%	0.00%	NS
	Muslim	5	4	1	
			80.00%	20.00%	
	Others	1	1	0	
			100.00%	0.00%	
Type of diet	Mixed	47	31	16	**Chi-Square Test** = 1.095
			66.00%	34.00%	df=1
	vegetarian	53	40	13	p=0.295
			75.50%	24.50%	NS
Type of family	Nuclear	37	25	12	**Chi-Square Test** = 1.3
			67.60%	32.40%	df=2
	Joint	56	42	14	p=0.522
			75.00%	25.00%	NS
	Extended	7	4	3	
			57.10%	42.90%	
Educational status of the father	Illiterate	6	2	4	**Chi-Square Test** = 5.958
			33.30%	66.70%	df=6
	Primary school	7	5	2	p=0.428
			71.40%	28.60%	NS
	Middle school	8	6	2	
			75.00%	25.00%	
	High school	22	14	8	
			63.60%	36.40%	
	Intermediate /PUC	8	6	2	
			75.00%	25.00%	
	Graduate	29	22	7	
			75.90%	24.10%	
	Post graduate	20	16	4	
			80.00%	20.00%	
Educational status of the mother	Illiterate	5	2	3	**Chi-Square Test** = 6.162
			40.00%	60.00%	df=6
	Primary school	4	3	1	p=0.405
			75.00%	25.00%	NS
	Middle school	5	3	2	
			60.00%	40.00%	
	High school	32	26	6	
			81.20%	18.80%	
	Intermediate /PUC	12	10	2	
			83.30%	16.70%	
	Graduate	27	17	10	
			63.00%	37.00%	
	Post graduate	15	10	5	
			66.70%	33.30%	
Occupational status of the father	Government employee	39	27	12	**Chi-Square Test** = 3.887
			69.20%	30.80%	df=3
	Private employee	22	18	4	p=0.275
			81.80%	18.20%	NS
	Self employed	38	26	12	
			68.40%	31.60%	
	Unemployed	1	0	1	
			0.00%	100.00%	

Occupational status of the mother	Government employee	18	10 55.60%	8 44.40%	**Chi-Square Test** = 3.914 df=3 p=0.271 NS
	Private employee	15	11 73.30%	4 26.70%	
	Self employed	15	13 86.70%	2 13.30%	
	Unemployed	52	37 71.20%	15 28.80%	
Monthly income of the family	Less than Rs 5000	7	3 42.90%	4 57.10%	**Chi-Square Test** = 6.834 df=3 p=0.077 NS
	Rs 5000-10000	25	22 88.00%	3 12.00%	
	Rs 10001-15000	28	18 64.30%	10 35.70%	
	Above Rs 15000	40	28 70.00%	12 30.00%	
Number of hours spending in physical activity	2 hours	49	34 69.40%	15 30.60%	**Chi-Square Test** = 1.129 df=4 p=0.89 NS
	1 hour	22	16 72.70%	6 27.30%	
	30 minutes	17	12 70.60%	5 29.40%	
	15 minutes	7	6 85.70%	1 14.30%	
	Not spending	5	3 60.00%	2 40.00%	
Source of information	Mass media	34	23 67.60%	11 32.40%	**Chi-Square Test** = 0.654 df=3 p=0.885 NS
	Health personal	33	23 69.70%	10 30.30%	
	Formal education	18	14 77.80%	4 22.20%	
	Self-reading	15	11 73.30%	4 26.70%	

*- Significant at 0.05 level of significance, NS-not significant

V. DISCUSSION

Analysis of the data shows 59(59%) children were males and 41(41%) were females and 35(35%) children were from 8th standard, 35(35%) children were from 9th standard and 30(30%) children were from 10th standard. Majority of children 93(93%) were Hindus and 5(5%) were Muslims. Majority of children 53(53%) were vegetarians and 47(47%) were having mixed diet. Data shows that majority of children 56(56%) were from joint family and 37 (37%) were from nuclear family, majority of children's fathers 29(29%) were graduate and Majority of children's mothers 32(32%) were having high school education. Data shows that 39(39%) children's fathers were government employees and 38(38%) were self-employed, majority of children's mothers 52(52%) were house wives, Majority of children's family 40 (40%) were had monthly income above 15000 and majority of children 49(49%) were spending 2 hours a day for physical activity.

The first objective was to assess the knowledge regarding health problems due to decreased physical activity among secondary school children. The present study shows that 71% of children had moderately adequate knowledge in pre-test, 29% had inadequate knowledge and no one had adequate knowledge. Overall range of pre-test knowledge score is between 6-19, mean pre-test score is (11.33) with standard deviation of 3.201 and mean percentage score is 37.77%. Whereas the post-test score revealed that 59% of children had moderately adequate knowledge in the post test, 41% had adequate knowledge and no one had inadequate knowledge. Overall ranges of post-test knowledge score are 15-27, mean score is 19.26 with standard deviation of 2.452 and mean percentage is 64.2%. The result was supported by Sahota P et al [7].

The second objective of the study was to determine the effectiveness of video assisted teaching programme on knowledge regarding Health problems due to decreased physical activity. The overall mean knowledge score of pre-test was 11.33 and post-test was 19.26 with standard deviation of 2.452. The obtained 't' value 27.749 is greater than the table value at 0.05 level of significance. Therefore "t" value is found to be significant. It shows that there will be significant difference between pre-test and post-test knowledge score of secondary school children regarding Health problems due to decreased physical activity. The findings the study was supported by another studies [8].

The third objective of the study was to find out Association between the pre-test level of knowledge with selected socio-demographic variables. The chi-square value computed between the pre-test level of knowledge with selected socio-demographic variables. Variable gender (χ^2=4.801) was found to be significant at 0.05 level. Variables of standard (χ^2=1.778), religion (χ^2=1.069), type of diet(χ^2 = 1.095), type of family(χ^2 = 1.3)educational status of father (χ^2 =5.958),educational status of mother(χ^2 =6.162), occupation of father (χ^2=3.887),occupation of mother(χ^2 =3.914),monthly income of family(χ^2= 6.834),number of hours spending in physical activity(χ^2=1.129)and source of information regarding health problems due to decreased physical activity (χ^2 =0.654) were found to be not significant at 0.05 level. Thus, it can be interpreted that there is no significant association between the pre-test level of knowledge with socio-demographic variables except gender. The result was supported by study done by Segungmin Lee and Hong seok abn [9].

VI. CONCLUSION

The aim of the study was to assess the effectiveness of video assisted teaching on knowledge regarding Health problems due to decreased physical activity among secondary school children in a selected school in Tumkur. Study finding shows that there will be significant difference between pre-test and post-test knowledge score of secondary school children regarding Health problems due to decreased physical activity. Thus, study shows that video assisted teaching was effective in improving knowledge of secondary school children.

VII. RECOMMENDATIONS

1. A similar study can be done to assess the knowledge, attitude and practice of school children regarding physical activity.

2. The study can be replicated on larger samples for a better generalization.

3. The same study can be conducted among the secondary school children regarding Health problems due to decreased physical activity by using different teaching methods such as structure teaching programme

Implications:

In the light of the above findings the implications are drawn in the areas of nursing practice, nursing education, nursing administration, and nursing research

Nursing administration: Nursing is a major component of the health care delivery system, and nurses make up the longest employment group within the system. Nursing services are necessary for children seeking care of any type, including health promotion, diagnosis treatment and rehabilitation. Development of healthy habits in children is necessary for the development of healthy adulthood. So, the nurse needs to conduct education through the mass media on sedentary life style, causes, health problems due to decreased physical activity and promotion methods of physical activity. The nurse administrators should explore their potentials and encourage innovative ideas in the preparation of appropriate teaching material.

Nursing education: Nursing education should focus more attention on giving education to the school children. It is the nurse responsibility to educate the secondary school children regarding health problems due to decreased physical activity because adolescents are more vulnerable obesity and other problems due to decreased physical activity.

Nursing practice: The nurse has a key role in health care delivery system that emphasis as on the primary prevention of the disease. Only the nurse work will not help in prevention of disease, it is only possible when all health team members work together with the goal of prevention of disease in school children. Primary prevention also includes health promotions & one of the methods of health promotion is by education.

Nursing research: The study shows light on the area of secondary school children knowledge regarding health problems due to decreased physical activity. The study will motivate the beginning researchers to conduct the same study with the different variables on a large scale. There is a lot of scope for exploring this area of research that can be done on the factors related on Health problems due to decreased physical activity, its causes and prevention.

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