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A Study to assess the Effectiveness of Computer Assisted Teaching Programme on Knowledge regarding sports related injuries and First aid measures in students of selected high schools at Hassan

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ABSTRACT

The aims of the study were to identify the effectiveness of Computer assisted teaching programmers on the improvement of knowledge of students regarding sports related injuries and first aid measures among school children. A evaluative research approach with pre-experimental one group pretest, posttest design was used with purposive sampling technique to select the sample (N=80) A selected knowledge questionnaires' was used to assess the knowledge and CATP was administered to find its effectiveness. The collected data was analyzed by using descriptive and inferential statistics. The data analysis revealed that the mean % of posttest knowledge score (81.56%) was higher than that of pretest knowledge score (27.06%). The calculated paired 't' test value (t=14.83) is greater than the table value (p>0.05,df-79) which is suggestive of significant difference between mean pre-test and posttest knowledge scores. Pré test and posttest knowledge scores were positively correlated with pretest and posttest self-reported practice scores. The calculated x2 value revealed a significant association between previous exposures of respondents to source of information with their posttest knowledge score. The mean % of posttest self-reported practice score (81.56%) was higher than self-reported practice score (27.06%) The calculated paired 't' test value (t=14.88) is greater than table value (P>0.05 df =79) which is suggestive of significant difference between mean pretest and posttest self-reported practice scores. The calculated x2 values revealed that there was no significant association between demographic variables of respondents and their posttest self-reported practice scores.

Introduction-

Sports and physical activities are essential for children's overall growth, contributing to physical fitness, emotional stability, social development, and academic performance. However, participation in sports also exposes children to the risk of injuries, ranging from minor sprains to serious fractures or head injuries.[1]

Globally, sports-related injuries constitute a major portion of childhood injuries, with the risk increasing due to poor supervision, inadequate warm-up, unsafe playing surfaces, lack of protective equipment, and insufficient knowledge of first aid.[2]

School-age children (6–17 years) are highly active and tend to participate enthusiastically in sports such as football, cricket, running, volleyball, and kabaddi. Studies show that common injuries among school children include sprains, strains, bruises, fractures, and soft-tissue injuries, especially affecting the lower limbs. Early identification of risk factors and implementation of preventive strategies can significantly reduce the burden of sports injuries.[3]

This study aims to assess the prevalence, patterns, and risk factors of sports-related injuries among school children and to provide scientific evidence for strengthening school-based injury-prevention programme.[4]

Methodology

Research methodology is a way of systematically solving the research problems. It explains the steps that are generally adopted by a researcher in studying the research problem along with the logic behind them. It includes steps, procedures and strategies for gathering and analyzing the data in research investigation.

Quantitative research approach is adopted for the present study. Based on the geographical proximity, feasibility of conducting the study and availability of conducting the study and availability of the samples. The present study was conducted in Govt high school, Hassan.

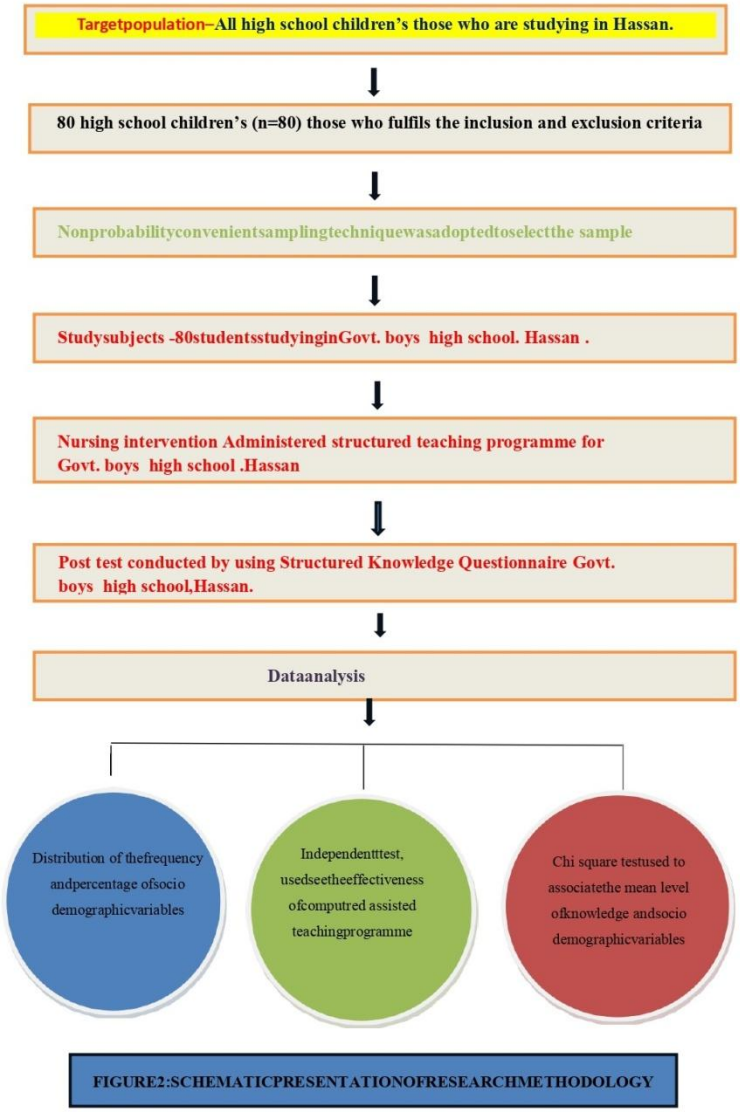

FIGURE2:SCHEMATICPRESENTATIONOFRESEARCHMETHODOLOGY

Objectives of the study

1. To determine the knowledge among students regarding sports related injuries and first aid measures.
2. To conduct a computer assisted Teaching program me on sports related injuries and first aid measures.
3. To evaluate the effectiveness of computer assisted teaching program me in terms of gain knowledge.
4. To find the association between pre-test knowledge score and selected demographic variables.

Research hypothesis

H1: There will be significant difference between mean pre-test and post-test. Knowledge score of selected school students regarding sports related injuries and first aid measures.

H2: There will be significant association between post-test knowledge score and selected demographic variables of school student.

Setting

It is the physical location and conditions in which data collection takes place in a study. The research was conducted in Govt. boys' high school. Hassan.

Sample It is the physical location and conditions in which data collection takes place in a study. The research was conducted in Govt. boys' high school. Hassan.

Sample size: The total sample of the study consisted of 80 high school children.

Criteria for sample selection

1. Inclusion criteria.

The study includes high school children's studying in selected high schools at Hassan.

- Who are willing to participate in the study

- Who are available during the study period.

5. **Exclusive criteria.**
   - Who are absent on the day of data collection.
   - Who are not willing to participate in the study

Sampling technique

For selection of the sample non probability convenient sampling technique was used.

Recommendations

On the basis of the finding of the present study the following recommendations have been made for the further study.

1. A similar study can be replicated on a large sample to generalize the findings.
2. A similar study may be conducted in different settings.
3. A similar study can be conducted with different intervention.

Results: -

Section 1: PRETEST KNOWLEDGE SCORE AMONG HIGH SCHOOL STUDENTS AT HASSAN

TABLE-1: shows pretest level of score amonghigh school students at Hassan

Grade	No. of students	%
Inadequate	62	77.5
Moderate	18	22.5
Adequate	0	0
Total	80	100

Table 1: Protest Knowledge Scores of High School Children's on Sports Related Injuries and First Aid Measures. N=80

The Above table depicted the distribution of pre-test knowledge level of high school children's regarding sports related injuries and its preventive measures. 77.5% subjects had inadequate level of knowledge where as 22.5% of the subjects had moderate level of knowledge and none of them had adequate knowledge

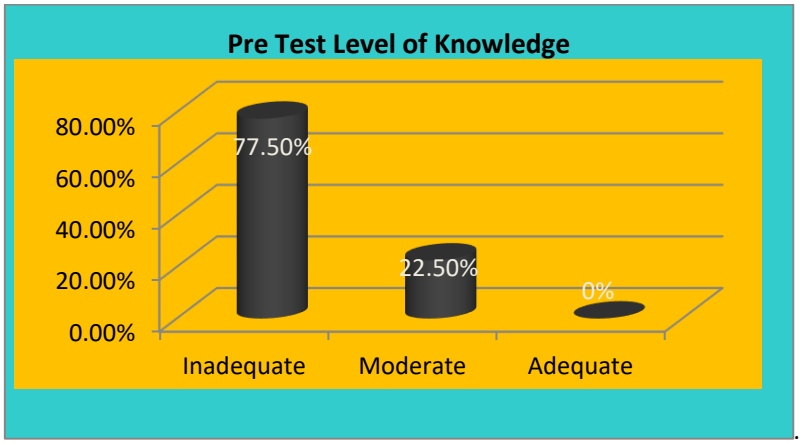

Figure 1: Simple Cylindrical Diagram Showing Percentage Distribution of the Subjects According to Pre-Test Knowledge Level

Table-2 Pretest Knowledge Scores of High School Children's on Sports Related Injuries and First Aid Measures. N=80

No.	Knowledge Aspects	Statements	Max. Score	Respondents Knowledge		
				Mean	SD	Mean (%)
I	General information	08	08	1.57	1.34	19.62
II	Types, causes & symptoms	10	10	2.55	1.5	25.5
III	Prevention	12	12	4.01	2.15	33.4
Overall		30	30	8.12	4.99	27.06

The above Table reveals that aspect wise mean percentage knowledge score regarding Sports the above Table 2 reveals that aspect wise mean percentage knowledge score regarding Sports related injuries and first aid measures. Obtained from respondents The highest 33.4% mean percentage knowledge score was obtained in prevention of Sports related injuries, 25.5% was obtained in Types, causes & symptoms in Sports related injuries ., followed by 19.62% mean percentage knowledge score was found in General information on Sports related injuries . However, the overall pre-test mean percentage knowledge score was found to be 27.6% percentage and standard deviation as 4.99 among the respondents.

Table 3: Level of Post Test Knowledge. N=80

Grade	No.of students	%
Inadequate	62	77.5
Moderate	18	22.5
Adequate	0	0
Total	80	100

The Above table 3 depicted the distribution of pre-test knowledge level of high school children's regarding sports related injuries and its preventive measures. 77.5% subjects had inadequate level of knowledge where as 22.5% of the subjects had moderate level of knowledge and none of them had adequate knowledge.

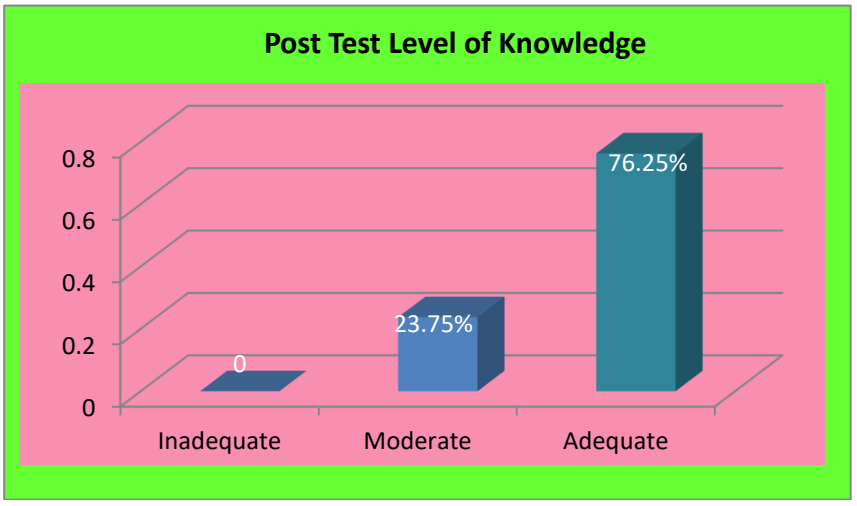

Figure 2: Simple Cylindrical Diagram Showing Percentage Distribution of the Subjects According To Post-Test Knowledge

Table 4: Aspect Wise Post Test Means Knowledge Scores Of Respondents On Sports Related Injuries And First Aid Measures. N=80

No.	Knowledge Aspects	Statements	Max. Score	Respondents Knowledge		
				Mean	SD	Mean (%)
I	General information	08	08	6.62	1.22	82.75
II	Types, causes & symptoms	10	10	7.98	1.41	79.8
III	Prevention	12	12	9.87	1.79	82.25
	Overall	30	30	24.47	4.42	81.56

The results of aspect wise post-test Mean percentage knowledge scores are depicted thatthe highest 82.75% mean percentage knowledge score was found in prevention of sports related injuries. Followed by 79.8% mean percentage knowledge score was found in general information of sports related injuries.82.25% mean percentage was found in Types, causes and symptoms of sports related injuries. However, the overall post-test mean percentage knowledge score was found to be 81.56%percentage and standard deviation 4.42 among the respondents.

Table – 5: Comparison of Pretest and Posttest Knowledge scores. N = 80

No.	Knowledge Aspects	Respondents Knowledge score				Paired 't' Test
		Pre test		Post test		
		Mean	SD	Mean	SD	
I	General information	4.43	1.06	7.16	1.34	t= 15.16**
II	Types, causes & symptoms	5.41	1.46	8.86	1.52	t-=14.87**
III	Prevention	4.51	1.20	7.28	1.23	t=15.38**
	overall	14.25	3.72	23.3	4.09	t= 14.83**

*Significant at p≤0.05,**highly significant at p≤0.01, df=79

The above table shows comparison of pre and posttest knowledge score among the High school children's. The difference between pre and post knowledge score are tested by using paired t –test and found highly significant in all the aspects.

TABLE 6: DETERMINATION OF OVERALL KNOWLEDGE SCORE

No. of high school children's.		Mean ±SD	students paired t-test
Pre test	80	8.13±4.99	t=56.52 p=0.001** df=79significant
Post test	80	24.47±4.42	

*significant at p≤0.05,df

The above table shows determination of overall mean knowledge score before and after administration computer assisted teaching programme. The difference between pre and post knowledge score are tested by using paired t test 56.52% and found highly significant in all the aspects.

Table7: Comparison of Pre Test And Post Test Knowledge

Knowledge Aspects	Pre test		Post test	
	No. Of high school children.	%	No. Of high school children.	%
Inadequate	62	77.5	0	0
Moderate	18	22.5	19	23.75%
Adequate	0	0	61	76.25%

The above table shows comparison of pre test post test knowledge level, which reveals that there is significant increase in knowledge level after intervention of CATP.

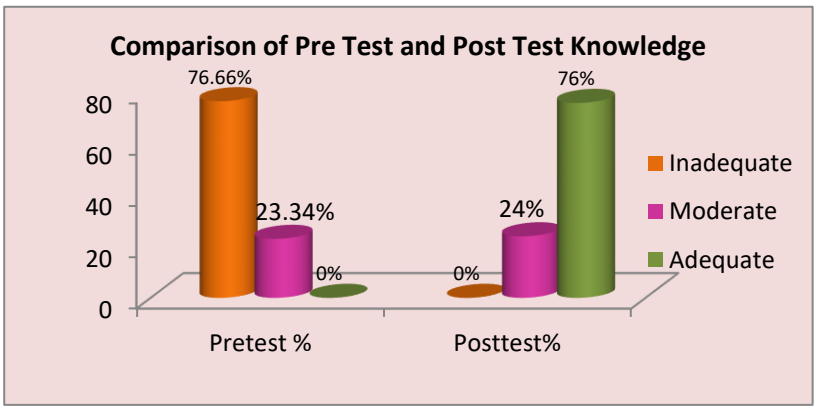

Figure 3: Multiple Cylindrical Diagram Showing Comparison of Pre-Test and Post-Test Overall Knowledge.

Table 8: Association between Knowledge Score and Selected Socio Demographic Variables

Demographic Variables		Protest				Chi Square Test
		Inadequate		Moderate		
		N	%	n	%	
Age	11-12 yrs	0	0	0	0	x^2= 391.64** Significant
	13– 15 yrs	59	73.75%	17	21.25%	
	16-18 yrs	3	3.75%	1	1.25%	
	18 above	-	-	-	-	
Sex	Male	0	0%	0	0%	x^2= 0.00 NS
	Female	62	77.5%	18	22.5%	
Type of residence	Rural	22	27.5%	3	3.75%	x^2= 9.27** Significant
	Semi-rural	5	6.25%	6	7.5%	
	Urban	19	23.75%	7	8.75%	
	Semi urban	16	20%	2	2.5%	
Religion	Hindu	36	45%	7	8.75%	x^2= 2.04 NS
	Muslim	12	15%	5	6.25%	
	Christian	14	17.5%	6	7.5%	
Type of family	Nuclear family	60	75%	16	20%	x^2= 3.84 NS
	Joint family	2	2.5%	2	2.5%	
Dietary pattern	Vegetarian	4	5%	1	1.25%	x^2= 0.03 NS
	Non vegetarian	58	72.5%	17	21.25%	
Source of information regarding sports related injuries.	Television	25	31.25%	9	11.25%	x^2= 0.53 NS
	Health personal	-		-	-	
	News paper	25	31.25%	6	7.5%	
	Internet	12	15%	3	3.75	
Family monthly income	Below 5000	-	-	-	-	x^2= 2.44 NS
	5,000-10,000	30	37.5%	8	10%	
	10,000-15,000	22	27.5%	9	11.25%	
	More than 15,000	10	12.5%	1	1.25%	

*Significant at P≤0.05, S-Significant, NS-Not Significant

In November 1982, epidemiologic data were collected in a unique, large scale, population-based survey on sports injuries in school-aged children living in Holland. A total of 7,468 pupils, aged 8 to 17, completed questionnaires covering a retrospective period of 6 weeks. Seven hundred ninety-one sports injuries were registered, amounting to an incidence of 10.6 sports injuries per 100 participants. In 31% of the cases, medical consultation was needed. Injuries incurred during the study period caused 36% of the children to miss one or more physical education classes and caused 6% to miss school for at least 1 day. Contusions and sprains were the most common lesions (77%). Three of four injuries involved the lower extremity, in particular the ankle. Sixty-two percent of all the injuries occurred in organized sports, 21% in physical education classes, and 17% in unsupervised sports activities. The highest injury rates were found in basketball and field hockey. In this study population, 15 and 16-year-old boys who had a high sports activity index and played team sports, particularly contact team sports, formed a high-risk group.[5]

Conclusion

The high school students gained knowledge about sport related injuries counselling towards preventing sport related injuries. They gave free and frank

responses regarding towards preventing sport related injuries. From the data analysis and findings of the present study it is concluded that there were significant differences between the pretest and posttest knowledge scores.

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