



Original Article:

TV Viewing versus Play - Trends and Impact on Obesity

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Abstract:

A cross sectional descriptive study was conducted involving 10000 students from randomly selected government and private schools of Amritsar district to identify the trends of TV viewing and playing in school children aged 5 years and above, to compare TV viewing in both sexes, different age groups and urban versus rural children and to study the impact of TV viewing and playing on obesity in children. The results showed that TV viewing has replaced outdoor playing in most children, irrespective of age, sex and residence. A positive relation between TV viewing and obesity was also documented.

Key Words: Television, play, leisure activity, obesity

Introduction:

Altered societal trends have included a significant decrease in outdoor recreation, an increased dependence on electronic media, and the conceptual emergence of "time poverty".¹ TV viewing has become one of the most important daily activities that compete with being active in childhood.² Watching TV is a passive event, with severe consequences of lifestyle. The amount of TV viewing by young children is predictive of BMI some years later.³ It has also been observed that the time spent watching TV correlates with children's request for, and parents' purchase of, foods influenced by TV, which are mostly high in fats and sugars.⁴ The work related activity seems to have decreased and the leisure time is dominated by physically inactive pass times like TV viewing.⁵ The time spent watching TV is positively correlated to BMI and skin fold thickness.⁶ Parents also report that they prefer having their children watch TV at home rather than play outside unattended.⁷ TV has replaced all other leisure activities including play, this being a norm, and not an exception.

Materials and Methods:

A cross sectional descriptive study was conducted involving 10000 students from randomly selected government and private schools, ten each, of Amritsar district. The selected students were thoroughly examined. The weight was measured by an error free standardized weighing machine. The height was measured by a calibrated bar. The body mass index was calculated according to the formula BMI=Weight (Kg)/ Height (M²). Obesity was classified in terms of BMI as follows: BMI 25.0-27.4 = overweight, BMI >27.5 = Obesity. The TV and playing habits were asked for and measured in hours/day. Specific questions regarding type of play (outdoor/indoor) and favorite hobbies/leisure pursuits were put to all children. The data was statistically analyzed.

Results and Discussion:

The age and sex wise mean TV viewing hours per day in the study population is shown in Table 1. The mean TV watching hours per day increased with age in both sexes. When compared, it was observed that the mean TV viewing hours/day in males (2h/day in urban population and 1.68h/day in rural population) were more than that of the females (1.90h/day in urban population and 1.49h/day in rural population). The difference was found to be statistically highly significant (p<0.0001). In the Indian household, the female child is expected to help in the daily chores, where as male child is not. Male children have more time for leisure pursuits like TV watching and video games.

Table 1: TV Viewing in children aged 5 years and above

Age (Yrs)	Males				Females			
	Urban		Rural		Urban		Rural	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
5	0.93	0.73	0.69	0.76	0.86	0.89	0.66	0.78
6	0.99	0.83	0.91	0.78	0.91	0.67	0.82	0.88
7	1.16	0.83	0.93	0.75	1.07	0.96	0.86	0.90
8	1.36	0.79	1.13	0.78	1.27	0.64	0.88	0.81
9	1.57	0.99	1.20	0.77	1.45	0.54	1.00	0.79
10	1.89	0.91	1.61	0.75	1.77	0.88	1.26	0.89
11	2.09	0.87	1.79	1.00	1.86	0.81	1.39	0.61
12	2.27	0.90	1.86	0.60	2.11	0.80	1.64	0.78
13	2.42	0.95	2.26	0.78	2.36	0.83	1.89	0.88
14	2.60	0.75	2.31	0.93	2.53	0.98	2.12	0.89
15	2.74	0.73	2.62	0.67	2.63	0.90	2.52	0.90
16	2.95	0.61	2.90	0.76	2.90	0.88	2.83	0.75
17	3.09	0.60	3.00	0.00	3.02	0.80	3.00	0.00
	2.00	0.81	1.68	0.00	1.90	0.88	1.49	0.84
Male versus female - p<0.0001, highly significant								
Urban versus rural - p<0.0001, highly significant								

Table 2: TV and Play hours in obese and non obese children						
	Obese			Non-obese		
	Sample	Mean	SD	Sample	Mean	SD
Play hours						
Indoor	189	0.81	0.52	9811	0.59	0.67
Outdoor	189	0.96	0.76	9811	1.24	0.99
TV hours	189	2.29	0.52	9811	1.76	0.81

Indoor: $p < 0.005$, highly significant; Outdoor: $p < 0.005$, highly significant; TV: $p < 0.0001$, highly significant

It was observed that the urban children watched more television/day than their rural friends. The urban male children viewed an average of 2 hours of TV per day, whereas the rural male children spent 1.68 hours watching TV. The rural female children spent 1.49 hours in a day watching TV, whereas the urban girls viewed TV for a mean of 1.68 hours. The difference in TV viewing of urban children was significantly higher ($p < 0.0001$) than the rural population. Urban children are more used to TV watching in the recent years as increasing urbanization and a busy schedule of both parents has cut down on outdoor/active leisure pursuits.⁸

The mean indoor playing hours for the non-obese was significantly lower as compared to the obese children. Children who preferentially indoor games or spent more time indoors, are subjected to less exercise than those who played more of field/outdoor games. The mean outdoor playing hours of the non-obese were significantly higher than those of the obese. Obese children are particularly sensitive to peer attitudes towards body shape and exercise performance, thus they may limit outdoor and team sports and thereby avoiding social interaction⁹

Also important is the fact that increases in inactive leisure pursuits such as computer and video games has direct correlation with increase in overweight in children.¹⁰

The mean TV viewing hours among the obese (2.29 hours/day) was significantly higher than the mean TV viewing hours (1.76 hours/day) in the non obese. It is observed that children who were leaner tend to watch less TV than the fatter ones.¹¹ A strong dose-response relationship between prevalence of obesity and hours of TV viewed is well documented as the odds of being overweight were 4.6 times greater in youth watching > 5 hours of TV compared with those watching 0-2 hours.¹² The remote control has further increased the sedentary nature of TV viewing, reducing which is a useful adjunct in treatment of obesity.¹³

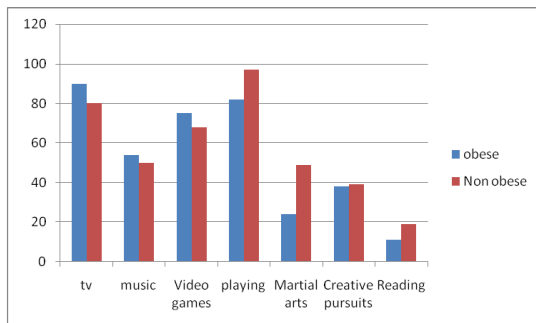


Figure 1: Preferred hobbies/leisure activities in obese (white) and non-obese (pink) children

Figure 1 shows that when data regarding hobbies/leisure activity was analyzed, it was found that in all children, the most preferred leisure activities were TV viewing, Videogames and playing. Others hobbies included music, reading, creative pursuits like pottery, painting etc. and martial arts. But, it is notable that playing and martial arts, both of which are active leisure pursuits are significantly lower in the obese children.

Also, obese children preferred TV and video games as their favourite hobbies, proving the link between obesity and inactivity. A point of raised concern is the increasing presence of TV sets and computer games in children's bedrooms.¹⁴

Conclusions and Recommendations:

Limiting TV viewing and sedentary leisure activities like video/computer games will help curb the menace of pediatric obesity.¹⁵ It is recommended that outdoor playing should be encouraged and supported at home and school.

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