



Original Research Article

AN OBSERVATION INTO THE DIGITAL SCREEN TIME, EATING BEHAVIOUR AND SLEEP QUALITY AND STRESS LEVELS IN OBESE CHILDREN

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ABSTRACT

Background: There is a raise in the childhood obesity throughout the country. Hence, there is a need for action to limit the raise. The causative factors have to be explored in detail to develop management techniques. Hence, the present study was undertaken. **Aims and objectives:** The present study was undertaken to observe the digital screen time with eating behaviour and sleep quality in obese children.

Material and Methods: The present observational study recruited a total of 40 obese children of both genders during the study period. Age and gender matched healthy children were also recruited. Mobile screen time was assessed by using the digital wellbeing app from the mobile phones. Average screen time was recorded from the app. Eating attitude test 26 was administered with the help of the parents to assess the eating behaviour of the children. Sleep quality was assessed using the insomnia severity index questionnaire. Stress levels were assessed using the perceived stress scale.

Results: Significantly higher screen time was observed in the obese children when compared with the healthy children (P=0.0469). ISI score was significantly higher in the obese children than healthy children (P=0.0064). Eat-26 score was significantly higher in the obese children when compared to the healthy children (P=0.0001). Perceived stress score was significantly higher in the obese children when compared with the healthy children (P=0.0003).

Conclusion: The study results presents longer screen time, insomnia, altered eating behaviour and higher levels of stress in the obese children. These causative factors should be considered in the management of the obesity in children.

Key Words: Children, Insomnia, Obesity, Screen time, Diet, Physical activity, life style.

INTRODUCTION

Disturbed energy balance that is excessive intake of calories and less expenditure of calories accounts for obesity. Obesity is the leading cause of the majority of the non-communicable diseases. In the year 1997, obesity was considered as a disease by the WHO. Childhood obesity is alarming throughout the world due to the current life style and fast food culture.^[1] There are various contributing factors for the obesity, like genetic, behavioural, environmental

etc. Once the child become obese, most often it is refractory to the treatment. The treatment options are counselling, change in diet, including physical activity. That means change in life style. Till the child follows the life style intervention, there will be weight loss. If the life style is discontinued, again there will be weight gain. Hence, the most essential is prevention of obesity.^[2] Positive correlation was reported between the screen time and obesity in children and adults.^[3,4] Excessive screen time causes obesity by decreasing the quality of sleep and

duration of sleep and alters the eating behaviour.^[5] It was reported that short sleep duration is a risk factor for overweight and obesity in children and adolescents.^[6] Further, disordered eating was reported to cause obesity in children.^[7] Significant correlation was reported between the stress levels and child weight.^[8] This weight change may be due to altered eating behaviour due to excessive stress. There is a raise in the childhood obesity throughout the country. Hence, there is a need for action to limit the raise. The causative factors have to be explored in detail to develop management techniques. Hence, the present study was undertaken.

Aims and objectives: The present study was undertaken to observe the digital screen time with eating behaviour and sleep quality in obese children.

MATERIALS AND METHODS

The present observational study recruited a total of 40 obese children of both genders during the study period. Age and gender matched healthy children were also recruited. The study protocol was approved by the institutional human ethics committee. Assent was obtained prior to the study. Willing children with consent of parents, obese, both genders, were part of the study. Mobile screen time was assessed by using the digital wellbeing app

from the mobile phones. Average screen time was recorded from the app. Eating attitude test 26^[9] was administered with the help of the parents to assess the eating behaviour of the children. Sleep quality was assessed using the insomnia severity index questionnaire.^[10] Stress levels were assessed using the perceived stress scale.^[11]

Statistical analysis: Data was analysed using SPSS 22.0 version. Student t test was used to observe the difference between the groups. A Probability value less than 0.05 was considered as significant.

RESULTS

The school going children recruited in the study were in the age groups of 7-12 years of age. Out of 40 cases 28 were male children and 12 were female children. Significantly higher screen time was observed in the obese children when compared with the healthy children (P=0.0469). ISI score was significantly higher in the obese children than healthy children (P=0.0064). Eat-26 score was significantly higher in the obese children when compared to the healthy children (P=0.0001). Perceived stress score was significantly higher in the obese children when compared with the healthy children (P=0.0003).

Table 1: Screen time, sleep quality, eating behaviour and stress scores in cases and controls

Parameter	Obese children (n=40)	Non-obese children (n=40)	P value
Screen time (minutes)	188.57±74.93	120.56±50.03	0.0469*
ISI score	14.1±3.54	9.09±3.91	0.0064**
EAT-26 score	16.64±3.11	11±1.71	0.0001***
Perceived stress score	21.91±3.48	16.27±2.61	0.0003**

Data was expressed as mean and SD. (*P<0.01 is significant. **P<0.01 is significant. ***P<0.001)

DISCUSSION

Obesity is the leading cause of the mortality throughout the world. Obesity is associated with the premature mortality in all the age groups.^[12] As the obesity was linked with the diabetes and other metabolic disorders, it is needed to manage effectively.^[13] Obesity and eating disorders adversely affects the physical, psychological and social health.^[14] Change in the life style was the mainly suggested treatment. One must include the physical activity in the daily routine and change in the dietary habits.^[15] Hence, to plan the management strategies for obesity, it is the need of time to understand the causative factors for the obesity. The present study observed the screen time, sleep quality, eating behaviour and stress levels in the obese children. In the recent years, dependency on the electronic gadgets has been increasing in all the age groups. Right from the childhood, children are addicted to use the mobile phones. This addiction to the mobile screen has adverse effects on physical, mental and psychological health.^[16] Excessive screen time decreases the quality and quantity of sleep that further worsen the condition and it

continues like a vicious cycle. It was reported that excess screen time causes excess of arousal, increased stress levels, altered biological clock and brain functioning.^[16] Declined sleep duration has adverse effects on body metabolic functions as adequate sleep is required for normal metabolic functions.^[17] In fact, a study reported close association between the excessive use of screen with development of cardiovascular disorders like heart failure.^[18] In the present study, there was a significant longer screen time in the obese children when compared with the healthy children. Poor eating habits like not eating nutritious diet, inadequate eating behaviours has impact on the development of obesity in children.^[19] Mobile phone is one of the contributor for this poor eating habits. There is a lot of advertisement for the food items having high fat, high sugar etc. every app in the mobile shows advertisements that promotes these types of food.^[20] In the present study, the scores of EAT-26 was higher in the obese children.^[21] Lack of sleep contributes to the development of overweight and obesity in all the age groups. It was recommended to assess the sleep quality while managing the obesity.^[21] Stress has an adverse effect

on the eating behaviour and hence, contributes to the obesity. In the present study, higher stress scores were observed in the obese children when compared with the healthy children. Hence, the present study results helps to understand the causative factors for obesity in children that helps to manage the obesity effectively.

CONCLUSION

The study results presents longer screen time, insomnia, altered eating behaviour and higher levels of stress in the obese children. These causative factors should be considered in the management of the obesity in children.

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