

Impact of Screen Time on Eating Habit and Childhood Obesity in Children Between 3 To 12 Years

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Abstract

Screen time has become an integral part of children's daily routines, particularly among those aged 3–12 years. The increasing use of mobile phones, televisions, and other digital devices has significantly influenced children's eating habits, physical activity levels, and overall health. Excessive screen exposure often leads to mindless eating, increased preference for junk foods, and reduced awareness of hunger and satiety signals. Children frequently consume snacks while watching screens, which negatively affects their dietary patterns and increases the risk of weight gain. Additionally, prolonged screen use limits physical activity as children spend more time indoors, resulting in poor stamina and a higher likelihood of childhood obesity.

Media advertisements and cartoon characters further influence children's food choices, encouraging the consumption of high-fat and high-sugar foods. Although many parents are aware of the harmful effects of excessive screen time, inconsistent monitoring and lack of clear household rules often contribute to unhealthy habits. This study utilized a structured questionnaire to assess children's screen practices, eating behaviour, physical activity, and parental involvement through both online and offline data collection methods.

The findings indicate that a considerable number of children demonstrate unhealthy eating behaviours and low levels of physical activity associated with increased screen time. The study concludes that excessive screen exposure negatively affects children's dietary habits, reduces physical activity, and raises the risk of obesity, highlighting the need for parental education, reduced screen use during mealtimes, promotion of outdoor activities, and encouragement of balanced eating habits for healthy child development.

Keywords: Screen time, Eating behaviour, Physical activity, Childhood obesity, Parental involvement

1. INTRODUCTION

Obesity is a chronic and multifaceted health condition characterized by the excessive accumulation of body fat that may impair overall health. It is associated with an increased risk of several diseases including cardiovascular disorders, type 2 diabetes, hypertension, certain cancers, and musculoskeletal problems. Obesity can also negatively affect quality of life by reducing physical mobility and disturbing sleep patterns (World Health Organization, 2025; Jia et al., 2019). Health professionals commonly assess

overweight and obesity using the Body Mass Index (BMI), which is calculated by dividing body weight in kilograms by the square of height in meters. In children, obesity is defined as a BMI at or above the 95th percentile for age and sex, while overweight refers to a BMI between the 85th and 95th percentiles (Ali et al., 2024). Childhood obesity has emerged as one of the most serious global public health challenges. The prevalence of overweight and obesity among children and adolescents has increased significantly in both developed and developing countries. According to global estimates, more than 340 million children and adolescents aged 5–19 years were overweight or obese worldwide (Agarwal, 2025). The condition develops due to a combination of genetic, environmental, and behavioural factors including unhealthy dietary patterns, reduced physical activity, and sedentary lifestyles (Daley and Balasundaram, 2025; Pereira and Oliveira, 2021). If not addressed early, childhood obesity may persist into adolescence and adulthood, increasing the risk of long-term health complications and higher morbidity. One of the major behavioural contributors to childhood obesity in recent years is excessive screen time. Screen time refers to the amount of time spent using electronic devices such as televisions, smartphones, tablets, computers, and video games (Anderson, 2020). With rapid technological advancement and increased availability of digital devices, screen exposure has become a common part of children's daily routines. However, prolonged screen use is strongly associated with sedentary behaviour, reduced physical activity, and unhealthy eating habits such as frequent snacking and increased consumption of energy-dense foods (Shang et al., 2015; Jebeile et al., 2022). Research has also indicated that excessive screen exposure may influence sleep patterns, emotional well-being, and psychological health among children and adolescents (Tang et al., 2021; Liu et al., 2021). In India, childhood obesity is rising rapidly due to urbanization, lifestyle changes, and increasing access to digital technologies. It is estimated that more than 14 million children in India are living with obesity, making it an important public health issue (Khadilkar et al., 2023). Therefore, understanding the relationship between screen time, dietary habits, and physical activity is essential for developing effective strategies to prevent childhood obesity and promote healthy growth among children.

2. REVIEW OF LITERATURE

Obesity is a chronic and multifaceted health condition characterized by excessive accumulation of body fat that may impair overall health. It is associated with an increased risk of several diseases including cardiovascular disorders, type 2 diabetes, hypertension, certain cancers, and musculoskeletal problems. Obesity can also negatively affect quality of life by reducing physical mobility and disturbing sleep patterns (World Health Organization, 2025; Jia et al., 2019). Health professionals commonly assess overweight and obesity using the Body Mass Index (BMI), which is calculated by dividing body weight in kilograms by the square of height in meters. In children, obesity is defined as a BMI at or above the 95th percentile for age and sex, while overweight refers to a BMI between the 85th and 95th percentiles (Ali et al., 2024).

Childhood obesity has emerged as one of the most significant global public health challenges. The prevalence of overweight and obesity among children and adolescents has increased rapidly in both developed and developing countries. According to global estimates, more than 340 million children and adolescents aged 5–19 years were overweight or obese worldwide (Agarwal, 2025). The development of childhood obesity is influenced by a combination of genetic, environmental, and behavioural factors such as unhealthy dietary patterns, reduced physical activity, and sedentary lifestyles (Daley & Balasundaram, 2025; Pereira & Oliveira, 2021). If not managed early, obesity in childhood can persist into adulthood and

increase the risk of long-term health complications and higher morbidity (Deckelbaum & Williams, 2010). One of the major behavioural contributors to childhood obesity in recent years is excessive screen time. Screen time refers to the duration spent using electronic devices such as televisions, smartphones, tablets, computers, and video games (Anderson, 2020). With the rapid advancement of technology and increased availability of digital devices, children are now exposed to screens from an early age. Excessive screen exposure has been linked to sedentary behaviour, reduced physical activity, and unhealthy eating habits such as frequent snacking and consumption of high-calorie foods (Shang et al., 2015; Jebeile et al., 2022). Studies have also reported that children who spend more time on screens tend to have poorer dietary patterns and lower engagement in outdoor activities (Robinson et al., 2017). Furthermore, prolonged screen use can negatively influence sleep quality, emotional well-being, and mental health among children and adolescents (Tang et al., 2021; Liu et al., 2021). In India, childhood obesity has been increasing steadily due to rapid urbanization, lifestyle changes, and increased access to digital technologies. It is estimated that more than 14 million children in India are affected by obesity, making it an important public health concern (Khadilkar et al., 2023). Therefore, understanding the relationship between screen time, dietary habits, and physical activity among children is essential in order to develop effective strategies for preventing obesity and promoting healthier lifestyles.

3. METHODOLOGY

Research refers to a systematic search for knowledge, while methodology explains the overall approach and procedures used to achieve the objectives of a study (Howell, 2013). The present study titled “Impact of Screen Time on Eating Habits and Childhood Obesity in Children Aged 3 to 12 Years” was conducted in two phases: Phase I – Conduct of Study and Phase II – Nutritional Counselling.

3.1 Selection of Area:

The study was conducted in Cherukulamba and Padapparam in Malappuram district, selected mainly due to the convenience and availability of suitable participants.

3.2 Selection of Sample:

A total of 215 children aged between 3 and 12 years were selected from the study area using a random sampling technique.

3.3 Method of Study:

The survey method was adopted to collect primary data as it is economical, convenient, and suitable for gathering information from a larger population (Denscombe, 2010).

3.4 Tools and Instrumentation:

A structured questionnaire was prepared to collect information related to personal details, socio-economic background, nutritional status, medical history, dietary habits, screen time usage, and lifestyle patterns of the participants (Igwenagu, 2016).

3.5 Assessment Parameters:

- Socio-economic status: Information regarding family income, parental education, occupation, and family composition was collected.
- Nutritional status: Assessed through anthropometric measurements such as height and weight to calculate Body Mass Index (BMI), along with clinical examination to identify visible signs of nutritional deficiencies (Sreelakshmi, 2014).
- Dietary assessment: Evaluated using the 24-hour dietary recall method and food frequency questionnaire to understand food intake and dietary patterns (Sreelakshmi, 2016).

- Medical history: Information on any communicable or non-communicable diseases experienced by the children was recorded.
- Lifestyle patterns: Questions assessed physical activity, sleep habits, and screen time practices.

3.6 Pilot Study:

A pilot study was conducted with 20 children aged 3–12 years to test the clarity and reliability of the questionnaire. Necessary modifications were made before conducting the main study (Cocks & Torgerson, 2013).

3.7 Data Collection and Analysis:

Primary data were collected directly from the participants with the help of their parents or guardians using the questionnaire. Secondary data were obtained from books, journals, and online resources. The collected data were analysed using percentage and frequency distribution, and the results were presented in tables and graphs.

Phase II – Nutritional Counselling:

After data collection, nutritional counselling was provided to the participants to create awareness about the effects of excessive screen time on eating habits and childhood obesity. Guidance was given on recommended screen time limits, balanced diet, healthy snacking, increasing physical activity, and reducing sedentary behaviour. Awareness was also created using posters and PowerPoint presentations to promote healthy lifestyle practices.

4. Result and discussion

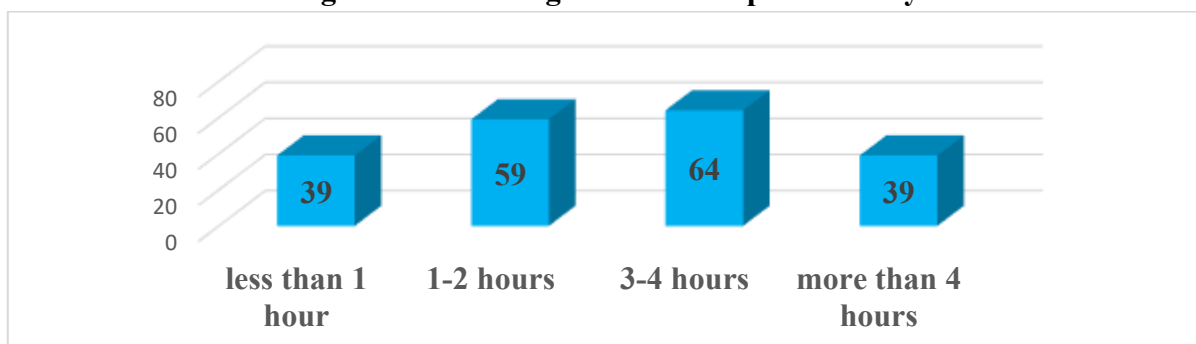
The present study was conducted to assess the impact of screen time on eating habits and childhood obesity among children aged 3 to 12 years. A total of 201 children from Cherukulamba and Padapparam in Malappuram District, Kerala, were selected for the study. Data were collected using a self-structured questionnaire, and the data were analyzed using frequency and percentage analysis. The results are presented under different headings and discussed accordingly.

4.1 Average screen time per weekday

Table No.1 Average screen time per weekday

Screen time per Weekday	Frequency	Percentage
Less than 1 hour	39	19.4%
1-2 hours	59	29.4%
3-4 hours	64	31.8%
More than 4 hours	39	19.4%

Figure No.1 Average screen time per weekday



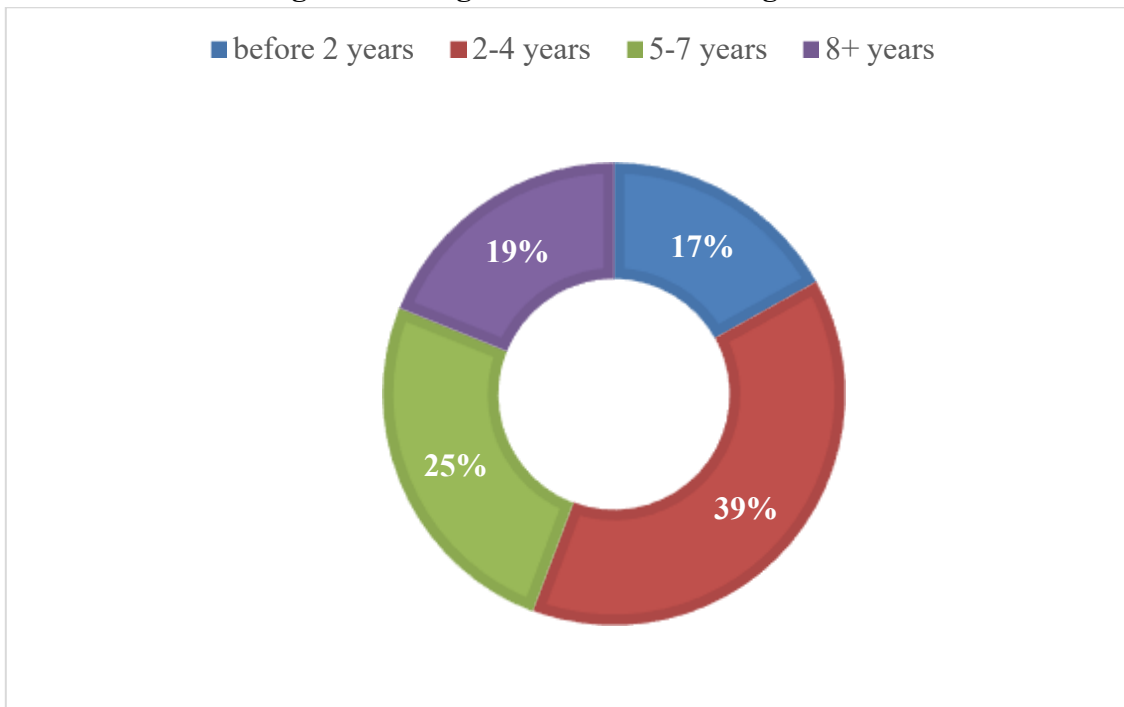
Most participants spend 3–4 hours on screens during weekdays (31.8%). Smaller but equal groups spend less than 1 hour or more than 4 hours (19.4% each). Over 60% use screens for more than 2 hours daily.

4.2 Age that child start using screen

Table No.2 Age that child start using screen

Age that child start using screen	Frequency	Percentage
Before 2 years	34	16.9%
2-4 years	78	38.8%
5-7 years	51	25.4%
8+ years	38	18.9%

Figure No.2 Age that child start using screen



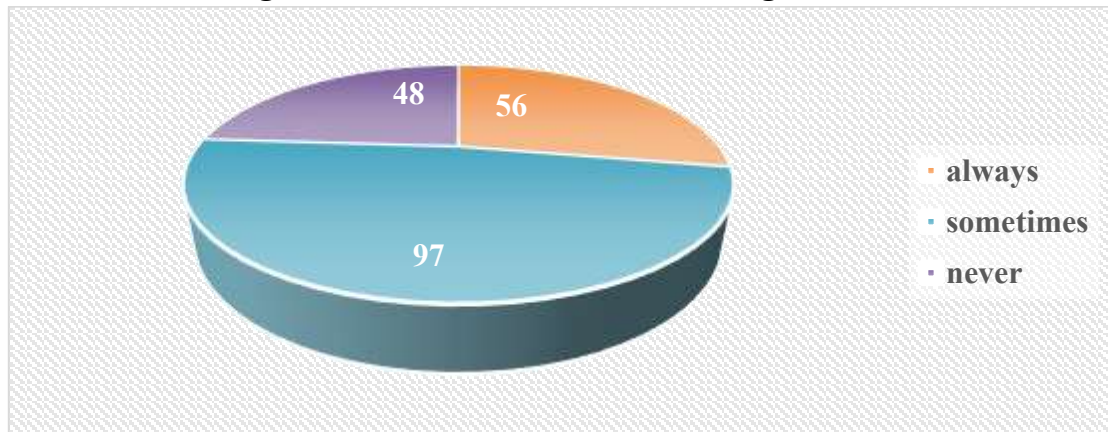
Most children start using screens between 2–4 years (38.8%), followed by 5–7 years (25.4%). Some begin even earlier, before 2 years (16.9%), while 18.9% start at 8+ years.

4.3 Child eat meals while using a screen

Table No.3 child eats meals while using a screen

Eat meals while using a screen	Frequency	Percentage
Always	56	27.9%
Sometimes	97	48.3%
Never	48	23.9%

Figure No.3 child eats meals while using a screen



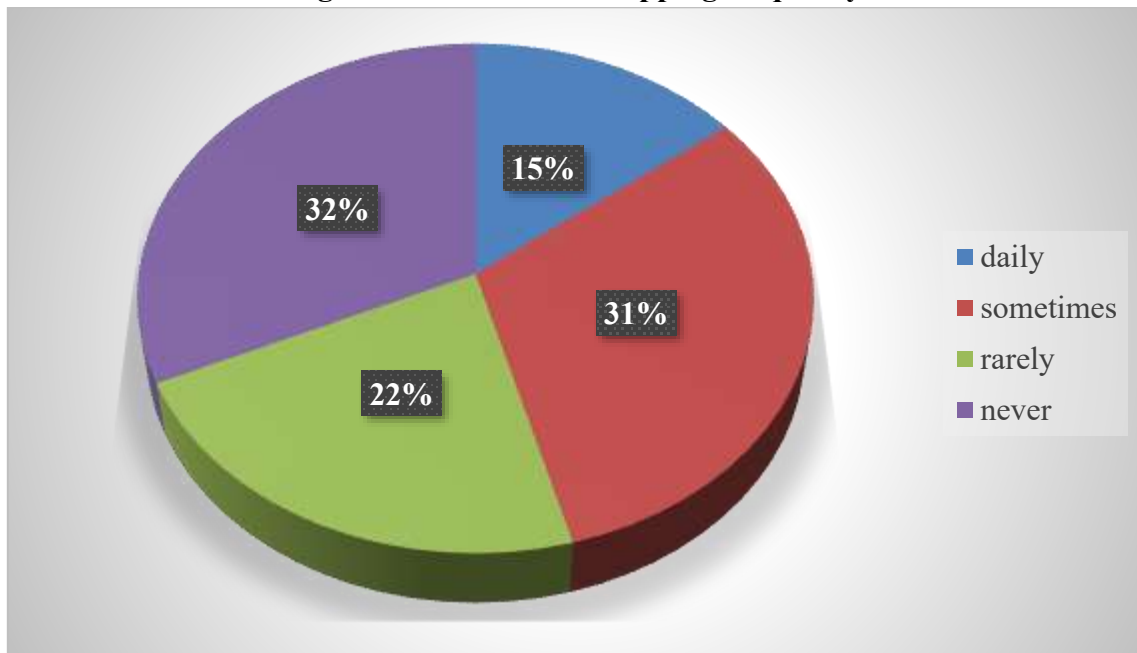
The data shows that most children eat meals while using screens, with 27.9% always, 48.3% Sometimes, and 23.9% never doing so.

4.4 Breakfast Skipping Frequency

Table No.4 Breakfast skipping frequency

Breakfast skipping	Frequency	Percentage
Daily	29	14.4%
Sometimes	63	31.3%
Rarely	45	22.4%
Never	64	31.8%

Figure No.4 Breakfast skipping frequency



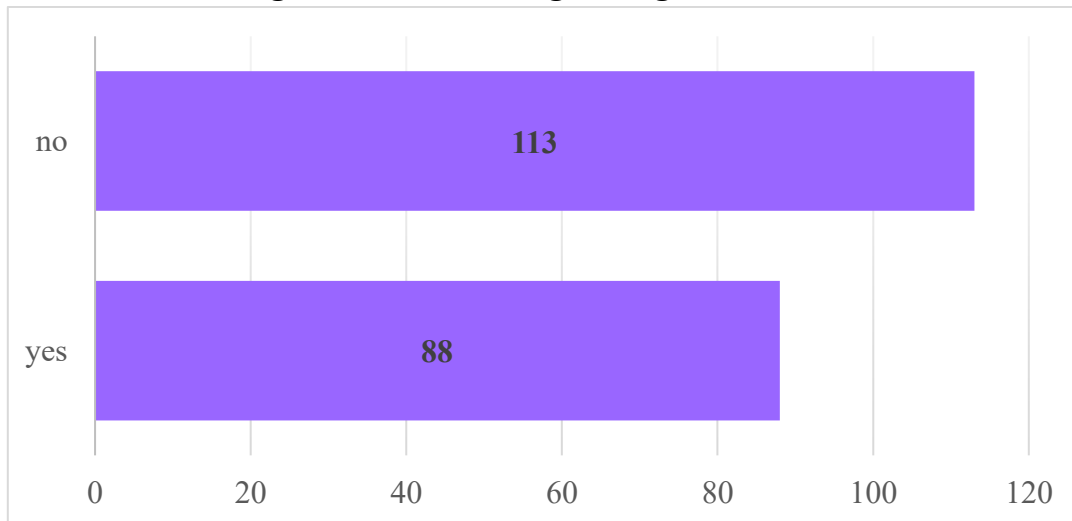
The survey shows that about one-third of children never skip breakfast, while 14.4% skip it daily and many skip it occasionally. Overall, nearly half of the children miss breakfast at times, which may affect their nutrition and energy levels and may be linked to increased screen time.

4.5 Overeating During Screen Time

Table No.5 Overeating During Screen Time

Overeating during screen time	Frequency
Yes	88
No	113

Figure No.5 Overeating During Screen Time



The graph shows that 43.8% of parents reported their child overeats during screen time, while 56.2% said their child does not. This suggests that screen time may contribute to overeating in a significant portion of children, though the effect varies among individuals.

4.6 Child’s Weight Status Perception

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Child’s weight status perception	Frequency	Percentage
Underweight	81	40.3%
Normal	53	26.4%
Overweight	67	33.3%

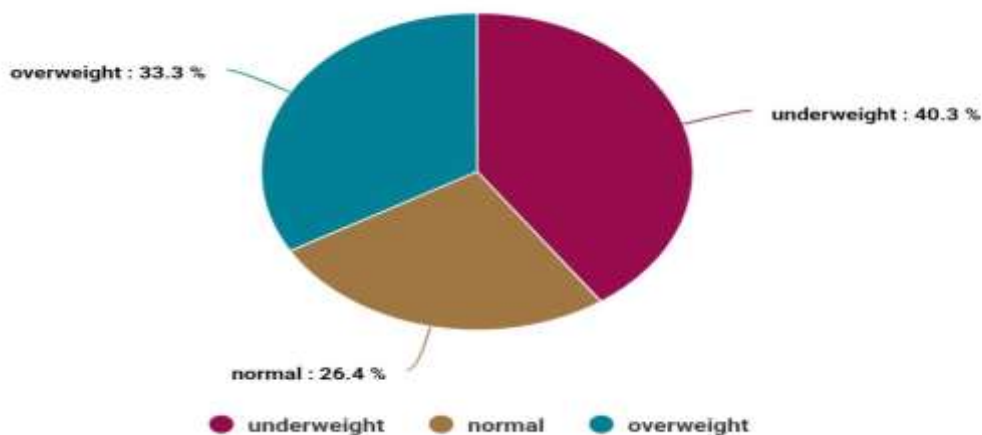


Figure No.6 Child’s Weight Status

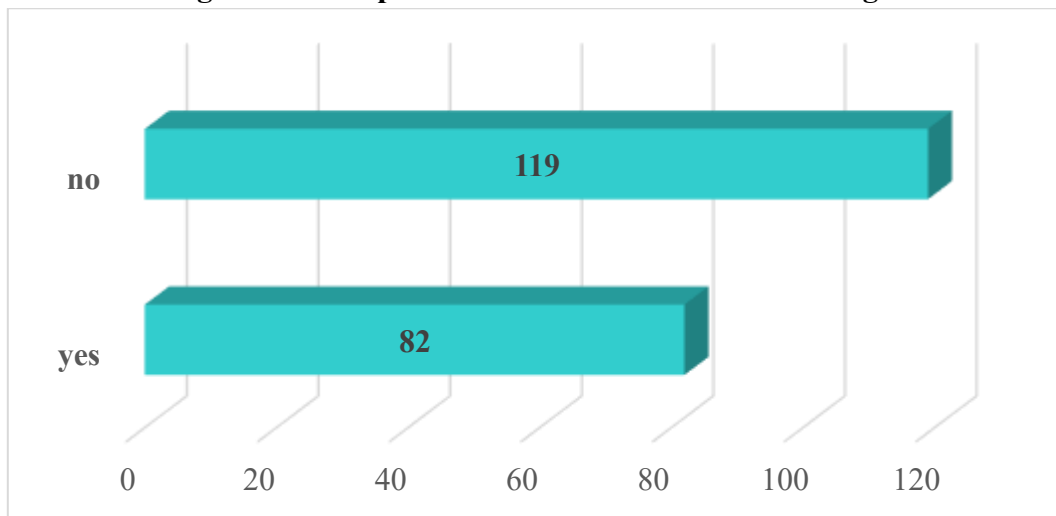
The chart shows that 40.3% of children are perceived as underweight, 26.4% as normal weight, and 33.3% as overweight. This suggests that many children fall outside the normal weight range, possibly due to differences in eating habits, physical activity, and screen time.

4.7 Impact of Screen Time on Child’s Weight

Table No. 7 Impact of Screen Time on Child’s Weight

Impact of screen time on child’s weight	Frequency
Yes	82
No	119

Figure No.7 Impact of Screen Time on Child’s Weight



A graph representing 201 responses shows that 40.8% of parents believe screen time has affected their child’s weight, while 59.2% do not see a connection.

5. Summary and Conclusion

The present study assessed the impact of screen time on eating habits and childhood obesity among children aged 3–12 years. The findings showed that excessive screen time significantly influences children’s dietary habits, physical activity, and overall lifestyle behaviours.

- **Eating Habits:** Many children reported eating while using screens, which resulted in distracted eating, frequent snacking, and increased preference for sugary and processed foods.
- **Physical Activity:** Children with higher screen time showed lower participation in outdoor play and physical activities, leading to reduced energy expenditure and increased sedentary behaviour.
- **Parental Practices:** Although many parents were aware of recommended screen time limits, consistent monitoring and regulation of device usage were lacking in several households.
- **Lifestyle Behaviour:** Excessive screen exposure was also linked to emotional eating, boredom snacking, and irregular sleep patterns among some children.
- **Influence of Media Content:** Exposure to advertisements and cartoon characters promoting unhealthy foods influenced children’s food preferences and increased their demand for high-calorie snacks.

- **Risk of Childhood Obesity:** Excessive screen time encourages sedentary behaviour, unhealthy snacking, and irregular eating patterns, which can increase the risk of childhood obesity. At the same time, poor food choices and imbalanced diets may also lead to nutritional deficiencies and malnutrition, affecting the healthy growth and development of children.

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