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A Study to Assess the Health-Related Quality of Life (HRQoL) in Children with Overweight and Obesity in selected community area, Chennai

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ABSTRACT

Introduction: Health-Related Quality of Life (HRQoL) in children experiencing overweight and obesity is a multifaceted issue influenced by various psychosocial, physical, and emotional factors. **Aim of the study:** The main aim of the study to assess the Health-Related Quality of Life (HRQoL) in Children with Overweight and Obesity in selected community area, Chennai. **Methodology:** This study adopted a descriptive design to assess the Health-Related Quality of Life (HRQoL) among children with overweight and obesity in a selected community area of Chennai. A total of 80 children aged 6 to 12 years were selected using a convenience sampling technique through local schools. Children who met the criteria for overweight or obesity based on age- and sex-specific BMI percentiles were included, while those with medical conditions affecting growth or HRQoL were excluded. **Result:** The study findings revealed that 56.25% of the children were overweight and 43.75% were obese, with a mean BMI of 23.6 ± 3.1 kg/m². The overall HRQoL score was 66.7 ± 11.5, indicating a moderate quality of life. Among the domains, social functioning scored highest, while school functioning was lowest. Categorically, 55% of the children had moderate HRQoL, 27.5% low, and only 17.5% high, suggesting a notable impact of excess weight on children's well-being. **Conclusion:** The study concludes that overweight and obesity significantly affect the health-related quality of life (HRQoL) in children, particularly in emotional and school functioning.

INTRODUCTION

Health-Related Quality of Life (HRQoL) in children experiencing overweight and obesity is a multifaceted issue influenced by various psychosocial, physical, and emotional factors. Research indicates that children suffering from overweight and obesity often report lower HRQoL compared to their peers with normal weight, primarily due to the psychosocial ramifications of their condition. Weight-related stigmatization, including discrimination and bullying, has been shown to significantly impact mental health outcomes, leading to issues such as low self-esteem, anxiety, and social isolation (Meixner et al., 2020; Pas et al., 2023; Ayensa et al., 2020).

Studies highlight that the quality of life dimensions commonly affected in these children include physical health, emotional well-being, and social functioning ("Quality of Life among Obese preadolescent School Age Children (11-14 years; ", 2017)(Förster et al., 2023; (Hoedjes et al., 2018; . For instance, children classified as obese often have lower scores in HRQoL assessments that evaluate aspects of daily living, emotional states, and social interactions, pointing to a clear association between higher body mass index (BMI) and poorer quality of life (Hoedjes et al., 2018; Kurtiša et al., 2019; Hassan et al., 2021)Radhakishun et al., 2015).

This deterioration in HRQoL is not merely a consequence of excess weight but can also result from social dynamics where children with obesity may experience negative feedback from their environment, further exacerbating their mental health struggles Hà et al., 2018)Killedar et al., 2020).

Socioeconomic factors also play a crucial role in mediating the impact of weight status on HRQoL. Research has shown that the educational background of parents does not uniformly influence the HRQoL of overweight and obese children, unlike that of their normal-weight counterparts. This suggests that different socioeconomic pathways might influence the psychosocial environment of children with obesity (Costa et al., 2020; (Förster et al., 2023; Hassan et al., 2021). Furthermore, interventions aimed at improving lifestyle and dietary habits have shown promise in not only managing weight but also enhancing overall HRQoL in affected children, supporting the idea that comprehensive approaches to obesity can yield significant benefits (Eynde et al., 2020; Voorn et al., 2022).

The interplay between physical health and psychological well-being in children with obesity is critical to understanding HRQoL outcomes. Findings suggest that obesity contributes to delayed motor skills development and physical fitness, which, in turn, leads to reduced HRQoL scores (Pakpour et al., 2019; Hassan et

al., 2021). The psychosocial stressors associated with obesity can create a cycle where reduced quality of life perpetuates the difficulties the child faces, creating a need for targeted interventions that address both physical health and mental health concerns simultaneously (Förster et al., 2023; Hà et al., 2018).

In summary, the challenges faced by children with overweight and obesity significantly impair their HRQoL. Taking a holistic approach that incorporates psychological, physical, and social factors is essential to developing effective interventions and supports for this vulnerable population.

MATERIAL AND METHODS

Research Design

This study adopted a descriptive design to assess the Health-Related Quality of Life (HRQoL) among children with overweight and obesity residing in a selected community area in Chennai.

Study Population and Sampling

The study population comprised children aged 6 to 12 years residing in a selected community area of Chennai, identified through local schools. A total of 80 children were included using a convenience sampling technique. Local schools within the selected community were approached for recruitment. Children who were categorized as overweight or obese based on age- and sex-specific BMI percentiles were eligible for inclusion. Those with medical conditions affecting growth or health-related quality of life were excluded.

Tools for Data Collection

Data were collected using the following instruments:

Structured Demographic Questionnaire: This tool gathered comprehensive background information including age, gender, socioeconomic status, residential area, type of school (public/private), physical activity patterns, and dietary behaviors.

Anthropometric Measurements: Trained personnel recorded the children's height and weight using standardized procedures. Body Mass Index (BMI) was then calculated and used to categorize participants as overweight or obese based on age- and sex-specific BMI percentiles.

HRQoL Assessment Tool: A validated Health-Related Quality of Life questionnaire specific to children (e.g., PedsQL™ or equivalent) was used to evaluate physical, emotional, social, and school functioning domains.

Data Collection Procedure

Ethical clearance was obtained from the Institutional Ethics Committee, and formal permissions were secured from relevant local educational authorities. Prior to data collection, informed consent was obtained from the parents or legal guardians of all participating children. Data collection was carried out by trained research personnel who administered the questionnaires and conducted the anthropometric measurements in accordance with established protocols. All collected data were entered and stored securely in Microsoft Excel for further analysis.

Statistical Analysis

Data analysis was conducted using SPSS version 26. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize demographic details and anthropometric profiles. The Chi-square test was applied to examine associations between categorical variables (e.g., lifestyle habits, school type, and socioeconomic status) and the overweight/obesity status. Additionally, HRQoL scores were analyzed to identify potential differences across subgroups.

RESULTS:

Demographic Characteristics of Children

The demographic distribution of the 80 participating children indicated that the majority were aged between 9–10 years (37.5%), followed by 6–8 years (35%) and 11–12 years (27.5%). The gender distribution was fairly balanced, with 52.5% males and 47.5% females. In terms of socioeconomic status, nearly half (47.5%) of the participants belonged to the middle-income group, while 27.5% and 25% belonged to low and high-income groups, respectively. Most children (55%) were enrolled in private schools, and 63.75% resided in urban areas. Regarding physical activity, 41.25% of the children were moderately active, 32.5% were sedentary, and only 26.25% were classified as active. Dietary habits varied, with 45% following a mixed diet, 30% consuming a healthy diet, and 25% reporting unhealthy eating behaviors. (Table 1)

Anthropometric Profile of Children

The anthropometric data revealed that the mean height and weight of the children were 134.2 ± 8.5 cm and 42.7 ± 6.2 kg, respectively. The average Body Mass Index (BMI) was 23.6 ± 3.1 kg/m^2. Based on age- and sex-specific BMI percentiles, 56.25% of the children were categorized as overweight and 43.75% as obese. These findings provide an objective basis for the classification of weight status and help correlate physical measurements with reported quality of life. (Table 2)

Health-Related Quality of Life (HRQoL) Scores

The Health-Related Quality of Life assessment revealed moderate overall functioning across domains. Among the four domains assessed, social functioning had the highest mean score (70.6 ± 10.3), followed by physical functioning (68.4 ± 12.7), emotional functioning (65.1 ± 11.9), and school functioning (62.9 ± 13.4). The overall HRQoL score was 66.7 ± 11.5, suggesting that the children with overweight and obesity experienced noticeable impacts on their well-being, particularly in academic and emotional areas. (Table 3)

Levels of Health-Related Quality of Life (HRQoL)

Based on categorized HRQoL scores, 55% of the children were found to have a moderate level of quality of life, while 27.5% had low HRQoL and only 17.5% exhibited high HRQoL. These findings suggest that a substantial portion of the study population experiences reduced health-related quality of life, which may be linked to their overweight or obese status, highlighting the need for timely interventions to improve their physical, emotional, and social well-being. (Table 4)

Table 1: Demographic Variables of Children (N = 80)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	6–8	28	35.0
	9–10	30	37.5
	11–12	22	27.5
Gender	Male	42	52.5
	Female	38	47.5
Socioeconomic Status	Low	22	27.5
	Middle	38	47.5
	High	20	25.0
Type of School	Government	36	45.0
	Private	44	55.0
Area of Residence	Urban	51	63.75
	Semi-Urban	29	36.25
Physical Activity	Active	21	26.25
	Moderately Active	33	41.25
	Sedentary	26	32.5
Dietary Habits	Healthy	24	30.0
	Mixed	36	45.0
	Unhealthy	20	25.0

Table 2: Anthropometric Profile of Children (N = 80)

Anthropometric Parameter	Mean ± SD	Minimum	Maximum
Height (cm)	134.2 ± 8.5	120	152
Weight (kg)	42.7 ± 6.2	32	60
BMI (kg/m²)	23.6 ± 3.1	18.5	29.8

Table 3: Health-Related Quality of Life (HRQoL) Scores (N = 80)

HRQoL Domain	Mean Score ± SD
Physical Functioning	68.4 ± 12.7
Emotional Functioning	65.1 ± 11.9
Social Functioning	70.6 ± 10.3
School Functioning	62.9 ± 13.4
Total HRQoL Score	**66.7 ± 11.5**

Table 4: Levels of Health-Related Quality of Life (HRQoL) among Children (N = 80)

HRQoL Level	Score Range	Frequency (n)	Percentage (%)
Low	0 – 59	22	27.5%
Moderate	60 – 79	44	55.0%
High	80 – 100	14	17.5%
Total	—	80	100.0%

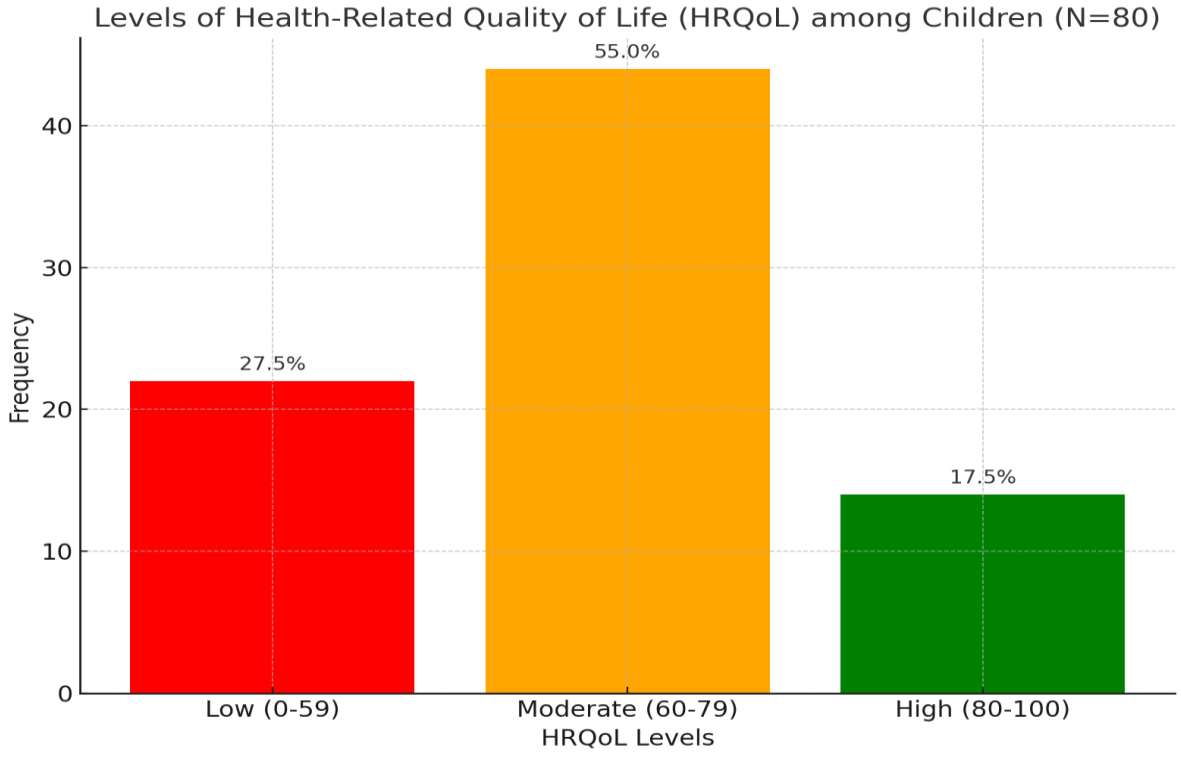

Figure 1: Health-Related Quality of Life (HRQoL) among Children

DISCUSSION

The findings from the study indicate that a significant proportion of children aged 6 to 12 years in the chosen community of Chennai are overweight (56.25%) or obese (43.75%), with a mean Body Mass Index (BMI) of 23.6 ± 3.1 kg/m². These statistics raise important concerns regarding public health and the well-being of this demographic. The data suggests that a substantial number of children fall into undesirable weight categories, which are associated with various health risks. Research has firmly linked childhood obesity to a range of adverse health outcomes, including cardiovascular issues, musculoskeletal problems, and psychological disorders Jalali-Farahani et al. (2018)(Riazi et al., 2010; Gandhi et al., 2015; . This prevalence of weight issues highlights the necessity for targeted interventions to combat obesity within the community.

Furthermore, the reported overall Health-Related Quality of Life (HRQoL) score of 66.7 ± 11.5 indicates a moderate level of well-being among the affected children. This finding suggests that while the children may not be in the severely impaired range regarding their HRQoL, their well-being is nonetheless compromised. The observed distribution of HRQoL levels—with 55% of children categorized as having moderate HRQoL, 27.5% as low, and only 17.5% as high—mirrors trends documented in other studies. Previous research has consistently shown that children with obesity tend to have lower perceived quality of life compared to their peers with normal weight, particularly in domains related to physical health, emotional functioning, and social interactions (Riazi et al., 2010; Gandhi et al., 2015; (Staiano et al., 2017; .

Among the HRQoL domains, social functioning (70.6 ± 10.3) scored the highest, indicating that these children may still possess some degree of social interaction capability despite their weight issues. However, lower scores in physical functioning (68.4 ± 12.7) and emotional functioning (65.1 ± 11.9) suggest significant impairment in their physical health and emotional resilience. Moreover, the lowest score reported was in the school functioning domain (62.9 ± 13.4), implying that overweight and obese children may face challenges in academic settings, potentially due to combined factors of physical discomfort, social stigma, and emotional distress (Aversano et al., 2016; Gandhi et al., 2015;

The correlation between BMI and HRQoL is well-documented; as BMI increases, the quality of life often decreases across various domains of health. This relationship underscores the importance of addressing the obesity epidemic as a means of improving quality of life outcomes (Kolotkin & Andersen, 2017; Gandhi et al., 2015; Zalihić et al., 2020). Interventions that promote healthy lifestyle changes, increase physical activity, and enhance nutritional awareness have shown potential in improving both BMI and HRQoL among children (Staiano et al., 2017; Zalihić et al., 2020). Given the results of this study, a community-focused approach involving parents, schools, and healthcare providers is essential to foster an environment conducive to healthier lifestyle choices, ultimately aiming to improve both physical health and psychosocial well-being in affected children.

CONCLUSION

The findings revealed that a majority of the children exhibited moderate levels of HRQoL, with notable impairments in school and emotional functioning. These outcomes emphasize the urgent need for early identification, community-based interventions, and school-level health promotion strategies to address the physical and psychosocial challenges associated with childhood obesity. Promoting healthy lifestyle practices, including balanced nutrition and regular physical activity, is essential to improve the overall well-being and quality of life in this vulnerable population.

CONFLITS OF INTEREST:

No conflits of Interest.

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