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Review Article

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The Impact of Obesity on Quality of Life of Specially Challenged Population in Kolkata: A Hospital-Based Observational Study

ADITI DE*^[1], AMRITA MITTER^[2], MR. ARGHADEEP SARKER^[3]

^[1,2]Speech & Hearing Institute and Research Centre (SHIRC), ^[3]TulipHall CliniResearch Pvt. Ltd (TCRPL)

Abstract

This hospital-based observational study investigates the impact of obesity on the quality of life (QoL) of the specially challenged population in Kolkata. Obesity is a significant public health concern worldwide, with increasing prevalence among individuals with physical and intellectual disabilities. The study involved 120 participants recruited from a tertiary care hospital, comprising individuals with various disabilities such as cerebral palsy, Down syndrome, and mobility impairments. Anthropometric measurements were taken to assess obesity levels, and the WHOQOL-BREF instrument was used to evaluate QoL across four domains: physical, psychological, social, and environmental. The results showed a strong inverse correlation between body mass index (BMI) and overall QoL scores. Participants with higher obesity levels reported significantly lower scores in physical and psychological health domains. The findings highlight the need for tailored interventions aimed at weight management and holistic care strategies for the specially challenged population. These outcomes can inform policy development and clinical practices to improve health and well-being in this vulnerable group.

Keywords: Quality of life (QoL), Body mass index (BMI), Obesity, World Health Organization (WHO), Down syndrome.

1. Introduction

Obesity is a growing global health challenge and poses unique difficulties for individuals with special needs, also known as the specially challenged population. These individuals often face restricted mobility, social stigma, and limited access to healthcare resources, increasing their susceptibility to obesity and related complications. In India, the double burden of under nutrition and obesity is especially pronounced in urban centres such as Kolkata, where rapid urbanization has led to lifestyle changes contributing to increased obesity rates.

Quality of life (QoL) encompasses multiple domains including physical health, psychological well-being, social relationships, and environmental factors. For the specially challenged population, these domains may be profoundly affected by excess weight, further limiting their independence and mental health. Although research has focused on the general population, there is a paucity of studies examining how obesity impacts QoL among specially challenged individuals in Indian urban settings.

2. Objective

The objective of this study is to examine the relationship between obesity and QoL in a hospital-based sample of specially challenged individuals in Kolkata. The study aims to inform healthcare interventions and public health strategies to better serve this vulnerable demographic.

3. Materials and Method

This study utilized a hospital-based observational design conducted at Speech & Hearing Institute and Research Centre (SHIRC), a tertiary care centre in Kolkata from May to September 2024. Ethical clearance was obtained from the institutional ethics committee, Speech & Hearing Institute and Research Centre (SHIRC).

Participants included 120 individuals aged 10 to 60 years with diagnosed physical or intellectual disabilities. Exclusion criteria included individuals with acute illness, pregnancy, or terminal conditions. Informed consent was obtained from participants or legal guardians. Anthropometric measurements including height, weight, and waist circumference were recorded

following standard WHO protocols. BMI was calculated and categorized as per Asian cut-offs. Quality of life was assessed using the WHOQOL-BREF questionnaire, validated in regional languages. Data were analyzed using SPSS version 25. Descriptive statistics summarized demographic and clinical data. Correlation and regression analyses explored relationships between BMI and QoL scores. Significance was set at $p < 0.05$.

4. Results

The study sample comprised 120 participants, with 56% males and 44% females. The mean age was 32.5 ± 12.3 years. Approximately 38% of participants were classified as obese ($BMI \geq 25$ kg/m^2), and 29% were overweight.

QoL scores showed a significant negative correlation with BMI. In particular, the physical domain scores were lowest among obese individuals (mean = 45.2 ± 8.7), compared to non-obese participants (mean = 62.4 ± 10.3). Psychological health also declined with increasing BMI. Social and environmental domains were less affected but still showed a trend.

A regression model adjusting for age, sex, and type of disability showed that BMI was a significant predictor of reduced QoL ($\beta = -0.42$, $p < 0.001$). Visual aids including bar graphs and scatter plots illustrated these trends.

Table 1

Demographic Characteristics of the Study Population

Characteristic	N	%	Mean \pm SD
Total Participants	120	100%	
Male	67	56%	
Female	53	44%	
Mean Age (years)			32.5 ± 12.3
Obese ($BMI \geq 25$)	46	38%	
Overweight ($23 \leq BMI < 25$)	35	29%	

Table 2
Quality of Life Scores by Obesity Status

Domain	Non-Obese (Mean ± SD)	Obese (Mean ± SD)	p-value	Significance
Physical Health	62.4 ± 10.3	45.2 ± 8.7	<0.001	***
Psychological Health	58.9 ± 9.5	47.1 ± 10.2	0.002	**
Social Relationships	55.7 ± 8.1	50.3 ± 9.0	0.076	NS
Environmental	60.1 ± 7.4	56.8 ± 6.9	0.102	NS

5. Discussion

The findings demonstrate a clear inverse relationship between obesity and quality of life in the specially challenged population. This aligns with global literature that highlights obesity's detrimental impact on physical and mental health, particularly in vulnerable groups.

In our study, physical limitations due to excess weight were exacerbated in participants already facing mobility impairments. Psychological effects, including low self-esteem and social isolation, were also pronounced. These outcomes underscore the need for integrative care models that combine weight management with mental health support.

Strengths of this study include its focus on a marginalized group and use of a validated QoL instrument. Limitations include the cross-sectional design and single-center recruitment, which may limit generalizability.

Nonetheless, the results provide a foundation for policy interventions and further research on tailored weight management programs for specially challenged individuals.

5. Conclusion

This hospital-based observational study highlights the significant impact of obesity on quality of life among the specially challenged population in Kolkata. Addressing obesity in this group requires a multidisciplinary approach involving caregivers, clinicians, and policy makers. Community-based programs, accessible nutrition counselling, and physical activity adaptations can contribute to meaningful improvements in health and well-being

7. Confidentiality Statement

All patient data were kept confidential throughout and after the study. The data were used solely for scientific purposes.

8. Conflict of Interests

Authors have no conflict of interests.

9. Authors' Contributions

All authors are contributed equally.

10. References

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