



Original Article

Association between socioeconomic status and quality of life among cerebral palsy children in government children hospitals and special training centers

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Received: 09 December 2023
Accepted: 25 February 2024
Epub ahead of print: 12 April 2024
Published: 30 April 2024DOI
10.25259/JMSR_250_2023

Quick Response Code:



ABSTRACT

Objectives: Cerebral palsy (CP) is a group of disorders that affect a person's ability to move and maintain the posture and balance of the body. It is the most common motor disability in childhood. The present study investigated the relationship between socioeconomic status (SES) and the quality of life (QoL) among children with CP up to the age of 12 years who attend our center.**Methods:** This observational correlational survey was conducted on a sample of 80 children with CP from our center. Participants were recruited based on selection criteria. Participants of age brackets up to 12 years, male and female children of all socioeconomic classes, neurologically diagnosed CP children, and patients with posture, brain deficits, and movement impairments were included in the study. The chosen participants completed the Health Questionnaire EQ-5D-5L and provided socioeconomic information with the assistance of their parents.**Results:** Nearly half (47%) of the participants were male and 52.5% were female. *P*-value of all factors was above 0.05, which showed no significant association between SES and the QoL of CP patients.**Conclusion:** No statistically significant association was found between SES and the QoL of children with CP at our center.**Keywords:** Cerebral palsy, Cerebral palsy children, Quality of life, Socioeconomic status, Special education center

INTRODUCTION

Cerebral palsy (CP) refers to non-progressive movement and posture disorders stemming from brain abnormalities during early development. It leads to lifelong motor impairments and could be associated with various challenges such as sensory deficits, seizures, cognitive issues, and more. The CP primarily affected motor function, setting it apart from other conditions.^[1] The CP**How to cite this article:** Iram A, Ghaffar T, Solangi ZA, Ayaz J, Rehman A, Yasmin N, *et al.* Association between socioeconomic status and quality of life among cerebral palsy children in government children hospitals and special training centers. *J Musculoskelet Surg Res.* 2024;8:142-6. doi: 10.25259/JMSR_250_2023

was thought to result from a series of events influenced by various risk factors occurring before, during or shortly after pregnancy. Pre-pregnancy risks include maternal age, parity, and certain maternal conditions. Genetic factors might also play a role. Pregnancy-related risks included assisted fertilization, male sex, and more. Birth-related risks involve factors such as preterm delivery and breech presentation.^[2] The CP subtypes were classified based on clinical features. Other factors such as sex, preterm birth, low birth weight, maternal age, CP severity, associated disorders, and magnetic resonance imaging results were considered.^[3]

In terms of demographics, males were more commonly affected by CP than females, a trend consistently observed across multiple studies. The reasons for these disparities are not entirely clear. The prevalence of CP varies across regions and might be influenced by factors such as sex and socioeconomic status (SES). These studies found that prevalence of CP was influenced by factors such as sex, race, and geographical location.^[4-6] A study in West Sussex found 293 cases of CP out of 105,760 live births, with an overall prevalence of 2.77/1000 live births.^[7]

In the context of parental experiences, parents of disabled children in rural areas faced stigma and stress and a limited understanding of how family members viewed their quality of life (QoL).^[8] Caregivers of children with CP did not have higher QoL, particularly in psychological and social aspects. Depression was significantly more prevalent among them (71.4%) compared to the control group (17.9%).^[9] The CP children achieved control at a later age than their siblings and healthy peers, with enuresis (involuntary urination) being more common in CP children.^[10]

The QoL, as defined by the World Health Organization (WHO), reflects an individual's awareness of them within their cultural and environmental context. This assessment evaluated physical, mental, and social well-being and life satisfaction.^[9] Children with CP face motor limitations that impact their daily activities despite medical treatment. Health-related QoL (HRQoL), including physical, mental, and social well-being, was assessed using different tools. Disease-specific measures focus on CP-related symptoms.^[11] The CP can lead to functional deficits, affecting daily activities and independence, making assessing a patient's QoL increasingly important globally. Cognitive issues in CP might limit self-reporting, and the impact on QoL assessment was poorly documented. The HRQoL evaluated the impression of health status and treatments on well-being. It was a multidimensional concept according to the WHO.^[12] Assessing HRQoL in CP children was vital for therapy planning and evaluating treatment outcomes. The HRQoL measurement considered patients' subjective experiences, integrating them with clinical criteria to form a holistic view of their well-being.^[12] For individuals with CP,

motor limitations were a defining factor in their lives. These limitations affect their physical functioning and day-to-day activities. The severity of these motor deficits could be varied, leading to differences in how CP impacts their "physical functioning" as assessed in QoL scales.^[12]

The HRQoL assessment in CP patients was a comprehensive process, considering the varied impacts of CP on physical and cognitive functioning. It is a valuable tool for understanding patient well-being, especially when cognitive limitations necessitate proxy assessments. A 2008 survey found no significant difference in the QoL between young people with CP and those with typical development. The study emphasized overall well-being over motor function.^[13] Studies found slight variations in QoL scores, while others reported a positive impact. The severity of disability negatively affected HRQoL.^[14]

A previous study explored socioeconomic factors and CP in kids. It found a link between SES and CP severity, especially in preterm births. The area's deprivation played a role for highly educated mothers but not for less educated mothers. Suggests community-level interventions were vital.^[15] Another study investigated tribal imbalances in CP risk in the US. Children from communities historically marginalized due to ethnicity had a 50% higher risk of CP compared to those from communities historically privileged, even after accounting for socioeconomic status (SES). The risk difference disappeared when accounting for premature birth for gestational age. Maternal education influenced CP risk but did not explain racial disparities.^[16]

While the previous studies have discussed the numerous aspects of CP, but the relationship between QoL and SES in this specific population was still unclear. Therefore, the objective of the present study was to investigate the relationship between SES and QoL among children with CP up to the age of 12 who attend the Government Special Education Center and Children's Hospital in Faisalabad.

MATERIALS AND METHODS

Study design

This cross-sectional survey study involved 80 participants selected from Government Children Hospital Faisalabad and a Faisalabad special education center.

Sampling technique

Convenient sampling was employed to gather the necessary sample size for the research.

Study setting

This was Study Education Center and Children's Hospital.

Study population

This was CP Children up to 12 years old.

Study duration

The study lasted four months, half for writing and half for data work.

Sample size

Raosoft suggested a sample size of 96, but only 80 participants met the inclusion criteria from an initial screening of 120 were used for statistical analysis to obtain the results.

Inclusion criteria

Inclusion criteria were participants with age brackets up to 12 years, male and female children of all socioeconomic classes, neurologically diagnosed CP children, and patients with posture, brain deficits, and movement impairments.

Exclusion criteria

Patients with a history of trauma, fracture or surgery and participants not willing to give written consent were excluded from the study.

Data collection procedure

Informed consent was taken from participants, ensuring data was solely for the study to protect their information and confirm their willingness to participate. Participants were screened and recruited based on inclusion and exclusion criteria: 80 children with CP out of 120 from the Education Center and Children's Hospital. Data collection was performed, and information was recorded in terms of demographic data, form with socioeconomic questions, and EQ-5D-5L health questionnaire, covering five dimensions with five response options each.

Statistical analysis

Results were analyzed by the Statistical Package for the Social Sciences version 22 and are elaborated by frequency tables, pie charts, and bar charts.

RESULTS

Nearly half (45%) of the 80 participants in the sample were primarily in the 4–8 age category. There were 47.5% males and 52.5% females [Table 1].

Regarding SES, 32.5% were from the lower-middle class, 20% were from the upper-middle class, and the upper class [Figure 1].

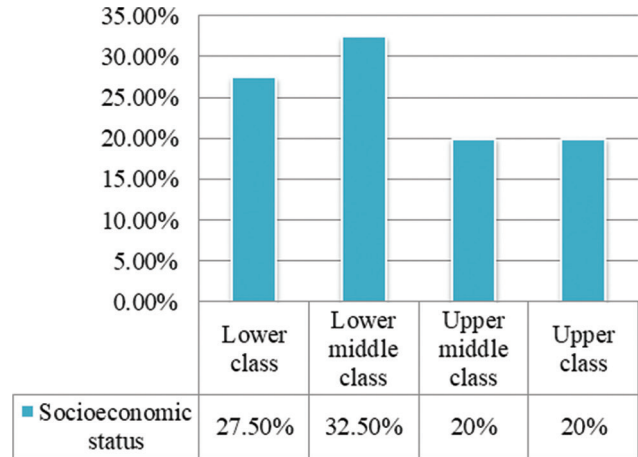


Figure 1: Socioeconomic status.

Table 1: Demographic statistics.

	Frequency	Percentage
Age		
0–4 years old	23	28.8
4–8 years old	36	45.0
8–12 years old	21	26.3
Total	80	100.0
Sex		
Males	38	47.5
Females	42	52.5
Total	80	100.0

Association of SES with other factors

The association between SES and mobility ($r = -0.030$, $P = 0.795$), self-care ($r = -0.021$, $P = 0.853$), usual activities ($r = 0.014$, $P = 0.901$), pain ($r = -0.109$, $P = 0.336$), and anxiety ($r = 0.061$, $P = 0.591$) is not statistically significant as all $P \geq 0.05$.

DISCUSSION

This study explored the interrelation between SES and the QoL in children with CP aged 0–12. Using the Pearson correlation, a parametric test, it was found that there is no significant correlation between these variables in this specific group of patients. While some previous research suggested a strong connection, our analysis supports the null hypothesis, indicating no substantial relationship.

Furthermore, a positive relationship was observed when examining the correlation between participation, physical health, and SES. This finding aligns with the work of Parkinson and her team in 2011, which highlighted the importance of companionship for children with CP.^[17] However, it also pointed out the challenges these children face in participating physically as compared to their non-

disabled peers. Parents put in considerable effort to facilitate their children's social lives despite the hurdles posed by medical and therapeutic procedures. Social well-being, acceptance, emotional well-being, and self-esteem are all positively associated with SES. In addition, SES positively correlated with functioning, indicating that individuals from higher socioeconomic backgrounds could access advanced technologies and regular treatment.

In contrast, another study suggested that children with CP from the lower socioeconomic backgrounds reported a lower HRQoL according to their own assessments. This included lower scores in physical, psychological, and social interaction categories compared to children with CP from middle-class households and healthy children from similar socioeconomic backgrounds. The HRQoL of lower SES families also showed notable deficits in overall scores and physical and mental well-being compared to middle class, healthy controls from SES backgrounds. This study contradicts our findings and indicates a significant correlation between SES and the HRQoL of children with CP.^[17]

In a separate study, by Davis in 2009,^[18] parents emphasized the financial resources required for therapists, medical treatments, equipment, and financial stability to meet their children's needs. These factors significantly influenced coping and adolescents' QoL.^[18]

Limitations

There may be some biases as data was reported by parents and parents' assistance in collecting the information of socioeconomic data may also introduce biases. Other limitations were the limited sample size and age-limited focus of CP children. The data was collected from a single city, which may limit the generalizability of the study findings.

CONCLUSION

No significant association was found between SES and the QoL of CP patients. There was a positive correlation between pain and disability with SES. It was also found that there is a higher prevalence of CP in the lower-middle class of society.

The study's findings suggest that health-care professionals should develop tailored treatments for CP children while considering the resources of lower-middle people. The findings of this research can contribute to public health education initiatives, raising awareness about the potential effect of socioeconomic factors on children with CP.

Recommendations

The study can be enhanced by expanding the comparison of SES with additional variables and investigating the connection between social and economic behaviors that impact CP patients' overall health and QoL.

Acknowledgment

We would like to acknowledge all participants who voluntarily participated in the research. We specifically thank our research supervisor for proper guidance and assistance in the research process.

AUTHORS' CONTRIBUTIONS

AI and TG contributed to the conception and study design. ZAS and JA contributed to data collection, AR contributed to data analysis and interpretation, NY contributed to article drafting, and AW contributed to proofreading the article. All authors have critically reviewed and approved the final draft and are responsible for the manuscript's content and similarity index.

ETHICAL APPROVAL

The study received approval from the Institutional Review Board of "Govt. Children Hospital of Faisalabad" GCUF/REC/4572 on 25-03-2023.

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the forms, the patients' parents have given their consent for the patients' images and other clinical information to be reported in the journal. The parents understand that the patients' names and initials will not be published, and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY FOR MANUSCRIPT PREPARATION

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

CONFLICTS OF INTEREST

There are no conflicting relationships or activities.

FINANCIAL SUPPORT AND SPONSORSHIP

This study did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

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