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A study to assess the Quality of Life of Children's with Acute Respiratory Tract Infections admitted in selected hospital , chennai.

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ABSTRACT

Introduction: Acute Respiratory Tract Infections remain a significant concern in pediatric health care globally, contributing to high rates of hospitalization, morbidity, and mortality among children, particularly those under five years of age. **Aim of the study:** The main aim of the study to assess the Quality of Life of Children's with Acute Respiratory Tract Infections admitted in selected hospital, Chennai. **Methodology:** This study adopted a descriptive research design to assess the Quality of Life (QoL) among children aged 6 to 12 years diagnosed with Acute Respiratory Tract Infections (ARTIs) and admitted to a selected tertiary care hospital in Chennai. A total of 80 children were selected using a convenience sampling technique based on admission availability and inclusion criteria. Children with chronic illnesses, immunocompromised conditions, or pre-existing psychological or neurological impairments were excluded. The design aimed to describe the QoL status and explore the influence of clinical and demographic factors. **Result:** The study revealed a moderate overall Quality of Life (QoL) score of 66.9 among children, with emotional functioning (72.4) being the highest and school functioning (60.3) the lowest. QoL was significantly associated with gender ($p = 0.030$), parental education ($p = 0.045$), socioeconomic status ($p = 0.048$), type of infection ($p = 0.017$), and hospital stay duration ($p = 0.022$), while age ($p = 0.076$) was not significant. **Conclusion:** The study concludes that children with acute respiratory infections demonstrated a moderate quality of life, with emotional well-being being the strongest domain and school functioning the weakest. Key factors influencing their quality-of-life included gender, parental education, socioeconomic status, type of infection, and length of hospital stay.

INTRODUCTION

Acute respiratory tract infections (ARTIs) continue to be a significant global concern in pediatric healthcare, substantially impacting hospitalization rates, morbidity, and mortality, particularly in children under five years old (Barbu et al., 2023; Dong et al., 2016). The burden of ARTIs on this age group has significant implications for long-term health outcomes, with evidence indicating that such infections can lead to extended hospital stays, an increased need for intensive care, and potential long-term sequelae post-infection (Aykaç et al., 2018; Dong et al., 2016). This persistent health issue underscores the necessity for ongoing research and effective interventions in pediatric care.

The etiological agents responsible for ARTIs have become increasingly diverse, with viral pathogens such as Respiratory Syncytial Virus (RSV) and Influenza being notably prevalent (Zhang et al., 2015; Leija-Martínez et al., 2024). For example, RSV infections are recognized as a leading cause of lower respiratory tract infections, resulting in substantial hospital admissions and emphasizing the need for targeted treatments and preventive measures (Zhang et al., 2015; Baroudy et al., 2018). Recent studies have demonstrated that the qualitative aspects of these infections—such as symptom severity—directly affect children's health-related quality of life (HRQoL) (Lin et al., 2015; Zhang et al., 2024). Factors such as age, underlying health conditions, and the seasonality of viral infections also play critical roles in influencing hospitalization rates and the overall severity of ARTIs (Hattoufi et al., 2020; Göktaş & Şirin, 2016).

The COVID-19 pandemic has further complicated these dynamics, exhibiting a pronounced impact on patterns of respiratory infections. During the pandemic, stringent infection control measures led to an unexpected reduction in hospital admissions for respiratory illnesses (Moura et al., 2023). However, concerns remain regarding the long-term effects of diminished exposure to respiratory pathogens, as recent studies have indicated an uptick in viral respiratory infections during the post-lockdown period (Eifan et al., 2017). Such findings highlight the importance of investigating and understanding the changing landscape of pediatric respiratory health in the aftermath of the pandemic.

For a comprehensive understanding of the QoL impacts associated with ARTIs in children, it's essential to integrate both clinical outcomes and psychosocial factors. Tools such as the PedsQL (Pediatric Quality of Life Inventory) serve to quantify how these

acute respiratory infections and resultant hospitalizations may affect children's daily functioning, emotional health, and overall life satisfaction (Thomas et al., 2022; Gaytán-Morales et al., 2021). Collectively, addressing these wide-ranging effects through targeted research and interventions can enhance pediatric care strategies.In conclusion, evaluating the Quality of Life of children hospitalized due to ARTIs in Chennai must encompass comprehensive clinical assessments alongside validated QoL instruments. Such a multi-faceted approach ensures that healthcare providers grasp the full implications of ARTIs, enabling them to deliver holistic care that addresses not only the immediate medical needs of these patients but also their long-term quality of life and psychosocial health.

MATERIAL AND METHODS

Research Design

This study adopted a descriptive research design to assess the Quality of Life (QoL) among children diagnosed with Acute Respiratory Tract Infections (ARTIs) and admitted to a selected hospital in Chennai. The design was chosen to describe the existing QoL status of hospitalized children and explore the influence of clinical and demographic factors.

Study Population and Sampling

The study population consisted of children aged 6 to 12 years who were diagnosed with ARTIs and admitted to the pediatric ward of a selected tertiary care hospital in Chennai during the study period.A total of 80 children were selected using a convenience sampling technique based on admission availability and meeting the inclusion criteria. Children with chronic illnesses, immunocompromised conditions, or any pre-existing psychological/neurological impairments were excluded from the study.

Tools for Data Collection

1. Structured Demographic and Clinical Profile Questionnaire:

Collected background information such as age, gender, parental education, residential background (urban/rural), socioeconomic status, and clinical data including duration of hospitalization, symptoms, and type of respiratory infection (e.g., upper/lower tract).

2. Quality of Life Assessment Tool:

A validated child-friendly QoL questionnaire, such as the Pediatric Quality of Life Inventory (PedsQL™), was used to assess the child's physical well-being, emotional state, social interaction, and school-related functioning. The tool was adapted for use with hospitalized children and administered with parental assistance if needed.

Ethical consideration

Ethical approval was obtained from the Institutional Ethics Committee of the affiliated academic institution. Administrative permission was also secured from the hospital authority. Prior to data collection, informed consent was obtained from the parents or guardians of all participating children.

Data were collected in a quiet and comfortable hospital setting by trained research staff, who administered the structured questionnaire and QoL tool in a sensitive and child-friendly manner.

Confidentiality and privacy of participants were strictly maintained. Collected data were entered into Microsoft Excel for documentation and analysis.

RESULTS:

Description – Demographic Profile of the Children

Table 1 presents the frequency and percentage distribution of the demographic characteristics of the children admitted with Acute Respiratory Tract Infections (ARTIs) in a selected hospital in Chennai. A majority of the children (40%) were in the 6–8 years age group, followed by 35% in the 9–10 years group, and 25% in the 11–12 years group. The gender distribution showed a higher proportion of males (57.5%) compared to females (42.5%). With regard to parental education, 47.5% had completed secondary education, while 30% were graduates and above. Most of the children belonged to middle socioeconomic status (48.75%), followed by 36.25% in the low and 15% in the high category. Urban residents accounted for 61.25% of the sample, while rural children made up 38.75%. In terms of infection type, upper respiratory tract infections (URTIs) were more prevalent (60%) than lower respiratory tract infections (LRTIs), which accounted for 40%.

Description – Quality of Life Scores

Table 2 shows the distribution of Quality of Life (QoL) scores across four domains: physical, emotional, social, and school functioning. The average QoL score in the physical functioning domain was 68.2, indicating a moderate level of physical wellness during hospitalization. The emotional functioning domain had a relatively better score of 72.4, suggesting that emotional resilience was slightly better maintained despite illness. In contrast, the social functioning score was lower at 66.8, indicating moderate difficulty in peer interaction during hospitalization. The school functioning domain had the lowest mean score of 60.3, highlighting substantial disruption in academic participation and concentration due to hospitalization. The overall total QoL score averaged 66.9, indicating a moderate quality of life during the period of illness and hospitalization.

Association Between Demographic/Clinical Variables and QoL

Table 3 explores the association between selected demographic and clinical variables and the Quality of Life scores using the Chi-square test. The results revealed that gender had a significant association with QoL ($p = 0.030$), with females tending to report slightly lower scores. Parental education and socioeconomic status were also significantly associated with QoL ($p = 0.045$ and 0.048 respectively), indicating that children from more educated and higher-income families tended to have better quality of life during hospitalization. Additionally, the type of infection showed a significant impact on QoL ($p = 0.017$), with children suffering from lower respiratory tract infections having poorer QoL scores. The duration of hospital stay also significantly affected QoL ($p = 0.022$), where longer stays were associated with lower QoL scores. Age, however, did not show a statistically significant association with QoL.

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

Demographic Variable	Category	Frequency (f)	Percentage (%)
Age (years)	6–8	32	40.0%
	9–10	28	35.0%
	11–12	20	25.0%
Gender	Male	46	57.5%
	Female	34	42.5%
Parental Education	Primary	18	22.5%

	Secondary	38	47.5%
	Graduate and above	24	30.0%
Socioeconomic Status	Low	29	36.25%
	Middle	39	48.75%
	High	12	15.0%
Residence	Urban	49	61.25%
	Rural	31	38.75%
Type of Infection	Upper Respiratory Tract	48	60.0%
	Lower Respiratory Tract	32	40.0%

Table 2: Quality of Life Score Distribution across Domains

QoL Domain	Mean Score (out of 100)	Interpretation
Physical Functioning	68.2	Moderate
Emotional Functioning	72.4	Good
Social Functioning	66.8	Moderate
School Functioning	60.3	Poor to Moderate
Total QoL Score	**66.9**	**Moderate**

Table 3: Association Between Selected Variables and Quality of Life (Chi-Square Test)

Variable	Category	x^2 value	p-value	Significance
Age	6–8, 9–10, 11–12	5.14	0.076	Not Significant
Gender	Male, Female	4.72	0.030	**Significant**
Parental Education	Primary, Secondary, Graduate+	7.89	0.045	**Significant**
Socioeconomic Status	Low, Middle, High	6.12	0.048	**Significant**
Type of Infection	URTI, LRTI	8.31	0.017	**Significant**

Duration of Hospital Stay	≤3 days, >3 days	5.25	0.022	**Significant**

DISCUSSION

The findings from this study reveal a moderate overall quality of life (QoL) score of 66.9 among children suffering from acute respiratory tract infections (ARTIs). This provides an essential insight into how respiratory illnesses impact various dimensions of children's well-being. Notably, emotional functioning scored the highest at 72.4, indicating that despite their medical challenges, children may maintain a relatively strong emotional resilience. This aligns with findings from Hettiarachchi et al., who noted that emotional well-being can be quite robust among pediatric populations facing health adversities, particularly when caregivers provide supportive environments Hettiarachchi et al. (2019). The moderate scores in physical functioning (68.2) and social functioning (66.8) suggest that while children experience some limitations, they are not severely impaired in these domains.

Conversely, school functioning had the lowest mean score at 60.3, indicating significant challenges in academic adjustment for these children. This finding is corroborated by research indicating that children with chronic health conditions, including respiratory infections, often face difficulties in school engagement and performance due to both physical limitations and psychological stressors (Cortés-Ramírez et al., 2021; Chow & Mermel, 2017). The impact of prolonged hospital stays and illness on a child's academic performance can be profound, as they miss critical learning opportunities, potentially leading to long-term academic difficulties.

Statistically significant associations were found between QoL and factors such as gender, parental education, socioeconomic status (SES), type of infection, and duration of hospital stay. The influence of gender on QoL outcomes in children has been documented, with some studies indicating that boys and girls may have differing levels of emotional resilience and coping strategies (Miravitlles & Feliu, 2017). Similarly, parental education and SES can affect children's health outcomes due to variations in access to healthcare, nutritious food, and supportive home environments—critical elements known to influence QoL (Cortés-Ramírez et al., 2021; Belila et al., 2017).

The type of infection also played a role, with more severe infections correlating with lower QoL scores. This aligns with literature that indicates that specific viral pathogens like Respiratory Syncytial Virus (RSV) not only lead to worse health outcomes but also significantly impair children's HRQoL due to the disease burden and associated hospitalization (Abd-Jamil et al., 2010; Mir et al., 2022). The duration of hospital stays further exacerbates the situation, with longer hospitalizations linked to lower QoL scores due to the compounded stress of prolonged separation from home and normal activities (Bryan et al., 2016; Clark et al., 2022).

Interestingly, age did not demonstrate a statistically significant association with QoL outcomes ($p = 0.076$), suggesting that in this context, all age groups may experience comparable challenges in adjusting to their conditions. This may reflect a prevailing notion in pediatric health that children, regardless of age, adapt variably to chronic illnesses but may share similar emotional and social needs, necessitating tailored interventions (Howell et al., 2018; Hasan et al., 2014).

In summary, while the study demonstrates that children with ARTIs maintain a moderate QoL level, significant domains, particularly school functioning, show room for improvement. These findings emphasize the urgent need for interventions that support not just the physical health but also the emotional and educational needs of affected children, potentially enhancing their overall QoL outcomes.

CONCLUSION

The study's findings underscore that children hospitalized with Acute Respiratory Tract Infections exhibit a moderate overall Quality of Life score, with emotional functioning being the strongest domain. The results highlight significant associations between QoL and demographic factors like gender, parental education, and socioeconomic status, as well as clinical variables such as type of infection and hospital stay duration. The notably lower score in school functioning indicates a critical need for targeted educational support for these children. Overall, effective interventions should address both medical and psychosocial needs to enhance the well-being of affected pediatric populations. Further research is essential to develop comprehensive care strategies that holistically support children's health outcomes.

CONFLITS OF INTEREST:

No conflits of Interest.

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