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A Questionnaire On Parental Quality Of Life And Recurrent Ent Infections In Children

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ABSTRACT
Background: *Recurrent ear, nose, and throat (ENT) infections are highly prevalent in early childhood and often lead to repeated doctor's visits, medication use, and school absenteeism. While the clinical burden is well documented, the broader psychosocial and economic impacts on parents remain underexplored.* ***Objective:*** *To assess the impact of recurrent ENT infections in children on various domains of parental quality of life (QoL), including emotional well-being, family life, financial burden, and social functioning.*
Methods: *This observational, cross-sectional study included 119 parents of children aged 0–7 years with recurrent ENT infections at a tertiary care centre. Data were collected using a structured, pre-validated questionnaire assessing the emotional, family, financial, and social impacts on a 5-point Likert scale. Demographic and clinical variables were also documented.*
Results: *Most respondents were mothers (60.5%) with a mean age of 34.5 ± 5.8 years. Children aged 1–5 years accounted for 55.5% of cases. A significant proportion of children had > 4 ENT episodes in the previous year. Emotional domains such as worry (3.7±1.0), stress (3.5±1.1), and sleep disturbance (3.3±1.0) had the highest. Family life was impacted by restricted leisure (3.2±1.1) and disruption of routine (3.5±1.0). Financial strain was notable due to out-of-pocket expenses (3.7 ± 1.1). Despite these challenges, satisfaction with treatment remained high (4.0±0.9). The overall QoL impact was moderate (3.6±1.0).*
Conclusion: *Recurrent ENT infections in children significantly affect parental QoL across the emotional, financial, and family domains. These findings highlight the need for holistic management strategies that extend support to the caregivers of patients.*
Keywords: *Recurrent ENT infections, Children, Parental quality of life, Emotional well-being*

INTRODUCTION

Ear, nose, and throat (ENT) infections are among the most frequent illnesses in young children. Common conditions include rhinitis, pharyngitis, tonsillitis, otitis media, and sinusitis. These infections are particularly prevalent between the ages of two and four years, when the immune system is still underdeveloped and less effective at clearing pathogens.[1,2] Most children experience several episodes annually, but a subset suffers from recurrent infections, commonly defined as four or more episodes in one year.[3] Although these infections are typically managed in outpatient settings and considered minor, the repeated nature of the episodes can lead to significant health, social, and economic consequences for families. Each episode often involves doctor consultations, medications, school absenteeism for children, and time off work for parents.[4] The high recurrence rate leads to an increased financial burden through out-of-pocket expenses, travel costs, and, in some cases, specialist referrals or minor surgical procedures.[5]
From a psychosocial perspective, the recurring nature of ENT infections can severely affect parents' emotional well-being. Caregivers often report stress, worry, frustration, and exhaustion due to disrupted sleep, frequent caregiving duties, and concerns about their child's long-term health.[6] In many families, the child's illness can

also interfere with daily routines, limit leisure time, and shift family dynamics, leading to reduced attention toward other children, disturbed interpersonal relationships, and family conflicts.[7]
Despite these burdens, most existing research on paediatric ENT infections focuses primarily on clinical aspects, such as microbiology, drug resistance, and treatment efficacy in children. The broader impact on parents, especially their quality of life (QoL), remains underexplored and largely unquantified in many settings.[8] Understanding this impact is essential, as the physical and emotional well-being of parents is closely linked to treatment compliance, timely healthcare-seeking behaviour, and long-term child outcomes.[9] Therefore, this study assessed the impact of recurrent ENT infections in children on the QoL of parents. Using a structured questionnaire, this study evaluated the emotional, physical, financial, and social domains affected by these recurring episodes.
Aim: To assess the impact of recurrent ENT infections in children on parental QoL and identify the major aspects of parental life affected

MATERIALS AND METHODS

This observational, cross-sectional study was conducted over a period of three months in the outpatient and inpatient departments of SRM Medical College Hospital and Research Centre. The study was approved by the Institutional Ethics Committee. Written informed consent was obtained from all participants before enrolment.

Inclusion criteria

Parents of children aged 0–7 years with recurrent ENT infections willing to participate and provide informed consent and who could understand and complete the questionnaire were included.

Exclusion criteria

Parents of children with chronic underlying conditions, such as immunodeficiency or cystic fibrosis, parents who declined to participate, or whose responses were incomplete, were excluded.

Sampling method

This study employed a non-probability convenience sampling technique. A total of 119 eligible parents were recruited during their visits to the ENT outpatient department or during their child's admission for ENT-related illness. Participants were selected consecutively until the target sample size was reached within the designated study period. Sample size (n) was calculated using the formula: $n = Z^2 \times p \times (1-p) / d^2$, with $Z = 1.96$, $p = 0.5$, and $d = 0.09$, yielding $n = 119$.

Methods

A structured, pre-validated questionnaire was used to assess the impact of recurrent ENT infections in children on various aspects of parental QoL. The questionnaire comprised items grouped into four main domains: emotional and psychological impact, disruption of family life, financial burden, and effect on family dynamics. Each item was scored on a 5-point Likert scale, with higher scores indicating a greater perceived burden.
The questionnaire was administered in two formats: either through in-person interviews conducted by trained personnel in a quiet consultation space or as an online survey link shared directly with participants based on their preference and convenience. Demographic data, such as the age and sex of the parent, age group of the child, and number of infection episodes in the past year, were recorded.
The data were analysed using IBM SPSS Statistics (v25) using descriptive statistics. Categorical variables are presented as frequencies and percentages, and continuous variables are expressed as mean and standard deviation.

RESULTS

Of the total participants, 72 (60.5%) were mothers and 47 (39.5%) were fathers. The mean age of the parent respondents was 34.5 ± 5.8 years. Most of the children were in the 1–5 years age group, accounting for 66 cases (55.5%), followed by 38 children (31.9%) aged 6–10 years and 15 children (12.6%) aged 11–15 years. In terms of infection, 49 parents (41.2%) reported that their child had experienced four to five ENT infection episodes in the previous year. Thirty-six respondents (30.3%) indicated six to seven episodes, and 34 parents (28.5%) reported more than seven episodes. Regarding occupational impact, 67 respondents (56.3%) stated that they had to take time off work because of their child's illness, whereas 52 (43.7%) reported no such disruption (Table 1).

Table 1: Sociodemographic and clinical characteristics of parents

Variable	**Category**	**Number of Respondents (n = 119)**	**Percentage (%)**
Parent Respondent	Mother	72	60.50%
	Father	47	39.50%
Age of Parent (years)	Mean ± SD	34.5 ± 5.8	—
Child Age Group (years)	1–5	66	55.50%
	6–10	38	31.90%
	11–15	15	12.60%
Number of ENT Infection Episodes (past year)	4–5 episodes	49	41.20%
	6–7 episodes	36	30.30%
	>7 episodes	34	28.50%
Time Off Work Required	Yes	67	56.30%
	No	52	43.70%

Table 2: Mean scores of emotional, social, financial, and QoL impacts among parents

Section	**Item**	**Mean ± SD**
Emotional and Psychological Impact	Worry	3.7 ± 1.0
	Stress	3.5 ± 1.1
	Less Patience	3.2 ± 1.2
	Annoyance	3.4 ± 1.2
	Moral Impact	2.9 ± 1.1
	Sleep Quality	3.3 ± 1.0
Impact on Family Life	Less Time for Other Family Members	3.4 ± 1.2
	Leisure Restriction	3.2 ± 1.1
	Daily Life Disturbed by Changes	3.5 ± 1.0
	Quality of Work Affected	3.1 ± 1.2
	Timetable Affected	3.3 ± 1.1
Financial Impact	Out-of-Pocket Expenses	3.7 ± 1.1
	Helplessness	3.1 ± 1.2
	Impact on My Own Health	3.4 ± 1.0
Impact on Family Dynamics	Source of Family Quarrels	2.8 ± 1.0
	Waking Up During the Night	3.3 ± 1.1
Satisfaction with Medical Care	Satisfaction with Child's Treatment	4.0 ± 0.9
Overall Quality of Life	Overall QoL	3.6 ± 1.0

In the emotional and psychological domain, the highest impact was seen in worry (mean score: 3.7 ± 1.0), followed by stress (3.5 ± 1.1), annoyance (3.4 ± 1.2), less patience (3.2 ± 1.2), and sleep disturbances (3.3 ± 1.0), while moral impact was relatively low (2.9 ± 1.1). In the family life domain, parents reported having less time for other family members (3.4 ± 1.2), restricted leisure (3.2 ± 1.1), disturbed daily routines (3.5 ± 1.0), affected work performance (3.1 ± 1.2), and disrupted timetables (3.3 ± 1.1). Financial burden was marked by high out-of-pocket expenses (3.7 ± 1.1), a sense of helplessness (3.1 ± 1.2), and negative effects on parents' health (3.4 ± 1.0). In terms of family dynamics, ENT illness was occasionally a cause of family quarrels (2.8 ± 1.0), and nighttime disturbances were common (3.3 ± 1.1). Despite these challenges, most parents were satisfied with the medical care their child received (4.0 ± 0.9), and the overall impact on QoL was rated as moderate (3.6 ± 1.0) (Table 2).

DISCUSSION

In the present study, the mean age of the parent respondents was 34.5 ± 5.8 years, indicating that most caregivers belonged to the early-and middle-aged groups. This is consistent with the findings of **Berdeaux et al.,** PAR-ENT-QoL validation study, which surveyed 1,214 parents across Europe and also noted that the primary caregivers tended to fall in their early to late 30s, the age range most commonly associated with parenting of young children prone to recurrent ENT infections.[5] The majority of the children (55.5%) were in the 1–5-year age group, followed by 31.9% in the 6–10-year group and only 12.6% aged 11–15 years. This age distribution aligns with established epidemiological patterns: study by **Mohanty et al.,** reported acute otitis media incidence rates of 8,286.7 per 100,000 person-years in children under 2 years, 7,951.8 per 1,00,000 in those aged 2–4 years, and 2,184.4 per 1,00,000 in children aged 5–17 years, demonstrating a clear decline with increasing age.[10]

Our study found that 41.2% of children had 4–5 episodes, 30.3% had 6–7 episodes, and 28.5% had > 7 episodes of ENT infections in the previous year. Similar findings were reported by **Salah et al.,** who highlighted that among 340 infants during the follow-up period, with a range of 3–10 and a mean of 5.23 episodes per patient.[11] In our study, 56.3% of parents reported needing time off work because of their child's ENT infections. Supporting this, a prospective study by **Crawford et al.** from Malaysia involving children with acute otitis media (AOM) found that 38.2% of parents missed work due to their child's illness, with an average of 20.9 work hours lost per episode (SD = 16.9).[12] This highlights a major socioeconomic consequence, particularly for working parents with limited leave options.

Our study showed a significant emotional burden among parents of children with recurrent ENT infections. The highest emotional concern was worry (mean score 3.7 ± 1.0), followed by stress (3.5 ± 1.1), annoyance (3.4 ± 1.2), and less patience (3.2 ± 1.2). Similar findings were observed in a European multicentre study by **Holl et al.,** where 51.0% of caregivers reported frequent worry, 44.6% noted disruptions in daily life, and 68.4% experienced sleep disturbances due to their child's acute otitis media episodes.[6] These results indicate sustained psychological strain resulting from repeated illness episodes and unpredictability in a child's health status. Our mean score for moral impact (2.9 ± 1.1) suggests a moderate sense of guilt or helplessness among parents. Although not as prominent as emotional stress, this domain reflects an internalised concern regarding being unable to prevent illness recurrence. **Dubé et al.** (caregiver helplessness mean ~2.5/4), highlighting frustrations over inability to prevent recurrent illness, though less intense than emotional stress.[13]

Parental daily routines and family interactions were notably affected by the pandemic. The most commonly reported changes were daily life disturbance (3.5 ± 1.0), less time for other family members (3.4 ± 1.2), and leisure restriction (3.2 ± 1.1). These results mirror findings from **Holl et al.,** a large European multicenter cohort in which 44.6% of parents reported altered daily schedules and 41.5% reported reduced leisure time due to their child's acute otitis media, with both impact scores ≥3 on a 5-point scale.[6]

Our high mean score for out-of-pocket expenses (3.7 ± 1.1) indicates the financial strain posed by repeated consultations, medications, and travel. The impact on one's health (3.4 ± 1.0) and helplessness (3.1 ± 1.2) further reflect the multidimensional burden. Similarly, **Van et al.'s** prospective study estimated the societal cost per AOM episode at €566, of which nearly 90% was due to parental productivity losses rather than medical bills.[14] Night-time disturbances scored 3.3 ± 1.1, compared to 2.8 ± 1.0 for family quarrels, underscoring that disturbed sleep, rather than overt conflict, is the primary source of family strain. In a large multicenter prospective study, **Holl et al.** found that during acute otitis media episodes, 68.4% of parents experienced interrupted sleep, while 44.6% reported altered daily schedules, and 41.5% had reduced leisure time, clearly highlighting how night-time disruptions are central to familial stress.[6]

Despite the various burdens, parents reported relatively high satisfaction with their child's treatment (4.0 ± 0.9), suggesting that effective communication and access to treatment contribute positively to caregivers' perception of healthcare. This aligns with findings by **Siggaard et al.,** a study of over 2,400 children undergoing tympanostomy tube insertion showed that parental satisfaction increased from 94.8% pre-operation to 97.2% post-operation, demonstrating high and improving trust in clinical care and outcomes following intervention.[15]

Our study showed that the overall QoL score among parents was 3.6 ± 1.0, indicating moderate impairment due to the cumulative burden of their child's recurrent ENT infection. This aligns closely with the findings by **Berdeaux et al.**, where the mean overall QoL score was 2.20 on a 5-point scale, with individual domains such as emotional distress and daily disturbance scoring between 2.11 and 2.67.[5] Overall, our study highlights that recurrent ENT infections significantly disrupt multiple aspects of parental life, underscoring the need for family-centred support within paediatric ENT management.

Limitations

This study was limited by its cross-sectional design, which prevented the assessment of temporal relationships. The use of self-reported responses may have introduced recall and reporting biases. As the sample was drawn from a single tertiary care centre and excluded parents of children with chronic comorbidities, the findings may not be generalisable to all populations.

CONCLUSION

Recurrent ENT infections in children impose substantial emotional, financial, and functional burdens on parents, particularly those of preschool-aged children. High frequencies of illness episodes correlate with significant disruptions in caregivers' lives, including occupational challenges, family routine alterations, and psychological stress. Despite these burdens, parental satisfaction with medical care remains high. Addressing parental well-being is essential not only for improving family functioning but also for enhancing treatment adherence and long-term health outcomes in children.

Compliance with Ethical Standards: This study involves human participants. Ethical clearance was obtained from the Institutional Ethics Committee (IEC) of SRM Medical College Hospital & Research Centre (Ethics Clearance Number: SRMIEC-ST0625-2688).

Informed Consent: Written informed consent was obtained from all participants prior to their inclusion in the study.

Conflict of Interest: The authors declare that they have no conflict of interest.

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Parental Quality of Life and Recurrent ENT Infections in Their Children: Questionnaire

Section 1: Emotional and Psychological Impact

Please rate how much you agree with the following statements regarding your child's recurrent ENT infections. Use the following scale:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

1. **Worry**

I often feel worried about my child’s recurrent ENT infections.(1) (2) (3) (4) (5)

2. **Stress**

The recurrent ENT infections cause my significant stress.(1) (2) (3) (4) (5)

3. **Less Patience**

I feel less patient with my child or others due to the ongoing stress of recurrent ENT infections.
(1) (2) (3) (4) (5)

Annoyance

I feel annoyed or frustrated when my child’s ENT infections do not seem to improve.
(1) (2) (3) (4) (5)

4. **Moral Impact**

5. I feel morally affected or conflicted about my child's health or the treatments available for recurrent ENT infections.

(1) (2) (3) (4) (5)

6. **Sleep Quality**

My sleep quality is negatively affected by worry, stress, impatience, annoyance, or moral concerns related to my child's recurrent ENT infections.(1) (2) (3) (4) (5)

<u>Section 2: Impact on Family Life</u>

Please rate how much you agree with the following statements based on your experience with your child's recurrent ENT infections:

7. **Less Time for Other Family Members**

My child's recurrent ENT infections have reduced the amount of time I can spend with other family members. (1) (2) (3) (4) (5)

8. **Leisure Restriction**

The recurrent ENT infections have limited my ability to engage in leisure or recreational activities. (1) (2) (3) (4) (5)

9. **Daily Life Disturbed by Changes**

My daily life is frequently disturbed by changes caused by my child's recurrent ENT infections. (1) (2) (3) (4) (5)

10. **Quality of Work Affected (Inside & Outside)**

My ability to perform well at work or at home is affected by the recurrent ENT infections of my child. (1) (2) (3) (4) (5)

11. **Timetable Affected**

My daily schedule or timetable is frequently affected by my child's recurrent ENT infections. (1) (2) (3) (4) (5)

<u>Section 3: Financial Impact</u>

Please rate how much you agree with the following statements:

12. **Out-of-Pocket Expenses**

I experience additional out-of-pocket expenses related to my child's recurrent ENT infections (e.g., medical visits, medications, treatments).(1) (2) (3) (4) (5)

13. **Helplessness**

I often feel helpless in managing the financial burden of treating my child's recurrent ENT infections. (1) (2) (3) (4) (5)

14. **Impact on My Own Health**

My health (physical or mental) has been affected due to the stress of managing my child's recurrent ENT infections.(1) (2) (3) (4) (5)

<u>Section 4: Impact on Family Dynamics</u>

Please rate how much you agree with the following statements:

15. **Source of Family Quarrels**

My child's recurrent ENT infections have caused conflicts or quarrels within the family. (1) (2) (3) (4) (5)

16. **Waking Up During the Night**

I frequently wake up at night due to my child's symptoms or health issues related to recurrent ENT infections. (1) (2) (3) (4) (5)

<u>Section 5: Satisfaction with Medical Care</u>

Please rate how much you agree with the following statements regarding your child's treatment:

Satisfaction with Child's Treatment

I am satisfied with the treatment my child receives for their recurrent ENT infections. (1) (2) (3) (4) (5)

Section 6: Overall Quality of Life

Please rate how much you agree with the following statements based on how your child's recurrent ENT infections impact your life:

18. **Overall Quality of Life**

My overall quality of life is negatively affected by my child's recurrent ENT infections.
(1) (2) (3) (4) (5)