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Awareness and Practice of Mothers regarding Early Signs of Respiratory Infection in Under-Five Children

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Abstract **Background:** Maternal awareness and practices regarding respiratory infections in children under five are crucial for improving health outcomes. Knowledge about early symptoms, preventive measures and environmental risks can reduce infection rates. **Aim:** This study aimed to assess mothers' awareness and practices regarding early signs of respiratory infections in children under five. **Methods:** A descriptive study design was employed. The sample size was 100 mothers of children under the age of five. The sampling technique was convenient sampling. Data were collected by means of a structured questionnaire that elicited information on socio-demographics, knowledge of respiratory infections and health-seeking practices. Descriptive statistics were employed to summarize and present the data. Chi-square tests were used for inferential analyses. **Results:** The study found that most mothers had a medium level of knowledge, some had a high level and a few had a low level of knowledge regarding early signs of respiratory infection. **Conclusion:** While many mothers understood the early signs and severity of respiratory infections, gaps remain, especially regarding home treatment and when to seek medical help. Targeted health education programs are needed to correct misconceptions and promote timely medical intervention, improving child health outcomes.

Key Words Maternal Awareness, Knowledge, Under Five Children, Respiratory Infections

INTRODUCTION

Maternal awareness and practices concerning early signs of respiratory infections in children under five are critical for effective health outcomes, particularly in vulnerable populations. Various studies highlight factors influencing maternal education and awareness regarding respiratory infections, which significantly affect child health outcomes.

Research indicates that maternal education plays a vital role in raising awareness about respiratory infections. Paul and Osu-Kure [1] emphasize that initiatives aimed at enhancing mothers' knowledge about the prevention and treatment of respiratory infections should have priority in healthcare strategies in Nigeria, where low levels of maternal knowledge correspond to higher incidence rates of respiratory infections among children. Furthermore, the study by Kusheta *et al.* [2] reveals that maternal high-risk fertility behaviours, often correlated with lower educational attainment, adversely affect children's susceptibility to respiratory infections. This suggests that a mother's educational background is closely linked to health-seeking behaviours and knowledge of early signs of respiratory distress, thereby impacting preventive healthcare measures [1,2].

Additionally, environmental factors associated with maternal behaviour, such as smoking, have been identified as risk factors for increased respiratory issues in children. Hepworth *et al.* found a significant association between maternal smoking and the incidence of respiratory infections in children, underscoring the need for increased maternal awareness regarding harmful practices during and after pregnancy [3]. Studies emphasize the impact of socio-economic conditions on maternal perceptions and practices related to child health. However, the reference provided on socio-economic determinants Acosta *et al.* [4] focused mainly on maternal morbidity and mortality from severe sepsis, thus it does not directly address the rates of respiratory infections in correlation to maternal education and healthcare access. Therefore, this citation has been removed.

Health interventions targeting maternal education can lead to improved health-related practices. Training programs that educate mothers about recognizing early signs of respiratory infections can result in timely medical consultation,

potentially reducing the prevalence of these infections among children [5]. Chekol *et al.* [6] affirm that enhancing maternal knowledge through community-based health education programs leads to better health practices and consequently reduces the incidence of acute respiratory infections in children.

Moreover, public health initiatives that address broader determinants of health, including nutrition and environmental exposures, also contribute to improving child health outcomes. Jiang and colleagues indicate that interventions promoting maternal nutrition can positively affect children's susceptibility to respiratory infections [7]. Immunization programs have been stressed, especially concerning respiratory syncytial virus (RSV), as effective vaccination strategies can protect infants from severe respiratory illnesses [8].

The research gap lies in limited understanding of the indirect effects of maternal education on child respiratory health through factors like residence and immunization. There is a need to identify the most effective educational approaches to improve maternal recognition and response to early respiratory infection signs. There, the study aimed to assess the awareness and practice of mothers regarding early signs of respiratory infection in under five children.

Objectives

The main objective to assess the awareness and practice of mothers regarding early signs of respiratory infection in under five children.

METHODS

Study Design and Participants

The study used a descriptive cross-sectional design to assess the awareness and practices of mothers regarding the early signs of respiratory infections in children under five. It was conducted in selected urban primary health centres, representing typical healthcare settings where mothers with young children seek care. The sample consisted of 100 mothers of children under five, selected using a convenient sampling technique. This method ensured that participants met the predefined inclusion and exclusion criteria, making the sample relevant to the study objectives. The inclusion criteria focused on mothers with children under five who were willing to participate, while those with children over five were excluded.

Inclusion and exclusion Criteria

The study included mothers who had children under five years old and were willing to participate. Mothers whose children were older than five or who did not provide informed consent were excluded.

Tools

The data collection tool was a structured questionnaire divided into three sections. The first section collected socio-demographic information such as age, education, occupation and family income. The second section assessed awareness of respiratory infections, including knowledge of symptoms like cough, fever and difficulty breathing, as well as prevention methods. The third section focused on practices, exploring whether mothers seek medical help, use home remedies or follow preventive measures like vaccination and hygiene practices.

Data Collection Procedure

A structured questionnaire was administered to selected mothers after identifying participants based on inclusion and exclusion criteria and obtaining informed consent following explanation of the study's purpose and procedures. The self-administered questionnaire was provided in a quiet, comfortable setting to accommodate varying literacy levels. Trained research assistants were present to clarify any questions and ensure understanding of all items. The process took approximately 15-20 minutes per participant, with data securely recorded and stored for analysis.

Data Analysis

Data analysis was performed using descriptive statistics such as frequencies, percentages and means to summarize socio-demographic details, awareness and practices. Chi-square tests were used to examine associations between socio-demographic factors and knowledge with a significance level of $p<0.05$.

RESULTS

Demographic Variables

The Table 1 presents the distribution of participants according to key demographic variables. The participants were classified into age groups, with the highest proportion (45%) falling in the 26-35 age group, followed by 30% in the 36-45 age group. The majority of participants (45%) had higher education and 80% were employed. Regarding income levels, 50% of the participants reported earning less than 20k, while 40% earned between 20k-40k. In terms of knowledge, 45% of participants had a medium level of awareness and 50% reported practicing health-seeking behaviour "sometimes," with 30% stating they "rarely" seek medical help.

Knowledge of Early Signs of Respiratory Infections

The Table 2 summarizes participants' knowledge of early signs of respiratory infections in children. A significant portion of the participants (45%) had a medium level of knowledge, while 25% demonstrated low knowledge and 30% had high knowledge. This distribution highlights the varying awareness levels about respiratory infections, with the majority having a moderate understanding, followed by those with high awareness.

Practice of Mother

Table 3 provides an overview of participants' practices related to seeking medical help for respiratory infections in children. The largest group of participants (50%) reported that they seek medical help "sometimes," while 30% "rarely"

Table 1: Distribution of Participants Based on Demographic Variables

Category	Frequency (n)	Percentage
Age		
18-25	10	10
26-35	45	45
36-45	30	30
46+	15	15
Education		
Primary	20	20
Secondary	35	35
Higher	45	45
Occupation		
Unemployed	20	20
Employed	80	80
Income		
<20k	50	50
20k-40k	40	40
>40k	10	10
Knowledge		
Low	25	25
Medium	45	45
High	30	30
Practice		
Rarely	30	30
Sometimes	50	50
Always	20	20

Table 2: Knowledge of Early Signs of Respiratory Infections.

Knowledge Level	Frequency (n)	Percentage
Low	25	25
Medium	45	45
High	30	30

Table 3: Practice of regarding early signs of respiratory infections

Practice Level	Frequency (n)	Percentage
Rarely	30	30
Sometimes	50	50
Always	20	20

Table 4: Knowledge of Early Signs of Respiratory Infections

Question	Correct Response	Incorrect Response
What are the common early signs of respiratory infections in children?	70 (70%)	30 (30%)
Do you know that respiratory infections can be serious if left untreated?	80 (80%)	20 (20%)
Are you aware of any vaccines that can help prevent respiratory infections?	65 (65%)	35 (35%)
Can respiratory infections be prevented through breastfeeding?	60 (60%)	40 (40%)
Which of the following increases the risk of respiratory infections in children?	75 (75%)	25 (25%)
Do you know the difference between a common cold and a respiratory infection?	70 (70%)	30 (30%)
Are you aware of how to recognize if your child has a serious respiratory infection?	85 (85%)	15 (15%)
Do you know the impact of second-hand smoke on children's respiratory health?	90 (90%)	10 (10%)
Can respiratory infections be treated at home without medical consultation?	50 (50%)	50 (50%)
Are you aware of preventive measures like vaccination and hand hygiene?	80 (80%)	20 (20%)

Table 5: Association Between Selected Demographic Variables and Knowledge Levels on Early Signs of Respiratory Infections

S.No	Demographic Variable	χ^2 Value	df	p-value	Remarks
1	Age	14.28	6	0.026	Significant
2	Education	25.63	4	0.00004	Highly Significant

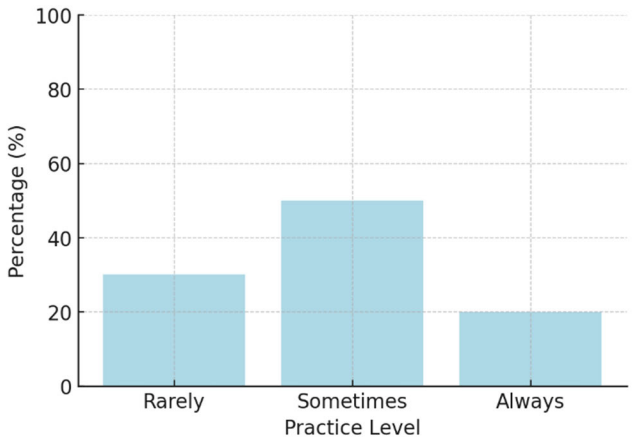

Figure 1: Percentage of practice regarding early signs of respiratory infections

seek help and 20% always do. This suggests that many participants may not consistently seek medical assistance but may do so under certain circumstances (Figure 1).

Knowledge of Early Signs of Respiratory Infections

Table 4 focuses on participants' knowledge about early signs of respiratory infections in children, displaying both correct and incorrect responses for each question. The highest level of correct responses was seen in questions regarding the impact of second-hand smoke on children's respiratory health (90%), with 85% correctly identifying how to recognize a serious respiratory infection in a child. Other areas such as the awareness of preventive measures like vaccination and hand hygiene received correct responses from 80% of participants. The lowest percentage of correct responses (50%) was noted regarding whether respiratory infections can be treated at home without medical consultation, showing a potential gap in understanding around this matter.

A significant association was found between age and knowledge level ($\chi^2 = 14.28$, $p = 0.026$), indicating variation in awareness across age groups. Education also showed a highly significant association with knowledge ($\chi^2 = 25.63$, $p = 0.00004$). Thus, higher educational status contributed to better knowledge regarding early signs of respiratory infections (Table 5).

DISCUSSION

The study results show a range of knowledge levels among mothers regarding respiratory infections in children, with 45% displaying medium knowledge, 30% having high knowledge and 25% having low knowledge. This finding is consistent with other research indicating that maternal education plays a key role in determining child health outcomes related to respiratory infections [9,10] A majority of mothers (70%) could identify early signs of respiratory infections, indicating a solid awareness, which is crucial for timely diagnosis and intervention, ultimately leading to better child health outcomes.

The study also found that 80% of mothers recognized the seriousness of untreated respiratory infections. This understanding highlights the importance of seeking timely medical attention to prevent severe complications such as hospitalization and long-term health issues [11,12]. The awareness of risk factors for respiratory infections, reported by 75% of participants, suggests that mothers are conscious of factors that can worsen their children's health, which aligns with other studies emphasizing the impact of education in shaping caregivers' health practices [13,14].

However, despite high levels of awareness about the benefits of breastfeeding (60%) and vaccines (65%), 50% of mothers believed that respiratory infections could be managed at home. This mixed view may reflect a gap in understanding the limitations of home care, potentially causing delays in seeking appropriate medical help [15]. Health education programs should aim to correct these misconceptions and guide mothers on when medical intervention is necessary.

An important finding from the study is the 90% of mothers who recognized the harmful effects of second-hand smoke on children's respiratory health. This awareness suggests that mothers are mindful of environmental factors affecting their children's health, which may influence behaviours such as smoking and household environment choices [16]. However, the belief held by 50% of mothers that respiratory infections can be treated at home may result in underuse of healthcare services, particularly in cases where professional treatment is needed. Public health initiatives should not only raise awareness but also provide clear guidance on when and how to seek medical care [17,18].

CONCLUSIONS

The study concluded that while a majority of mothers possess a good understanding of respiratory infections in children, with high awareness of early signs, risk factors and the seriousness of untreated infections, significant gaps remain. Notably, 50% of mothers believed that respiratory infections could be treated at home, which may delay necessary medical intervention. Despite strong knowledge of the importance of breastfeeding, vaccines and the harmful effects of second-hand smoke, mixed opinions on home care versus seeking medical help suggest a need for targeted health education programs to guide mothers in making informed decisions about when to seek professional medical care for respiratory infections.

Limitations

Limitations of this study include potential response bias and misinterpretation of questions due to the self-administered format, particularly among low-literacy participants. Trained assistants provided clarification, but incomplete responses or skipped items could still affect data completeness. The cross-sectional design limits causal inferences about maternal knowledge and practices regarding respiratory infections.

Recommendation

Based on the study findings, it is recommended that targeted health education programs be developed to address gaps in knowledge, particularly regarding the limitations of home treatment and the importance of seeking timely medical intervention for respiratory infections. Raising awareness about preventive measures like breastfeeding, vaccines and the dangers of second-hand smoke is crucial. Additionally, community-based health workshops and collaboration with healthcare providers can help reinforce when medical consultation is necessary. These efforts will ensure mothers are better equipped to make informed healthcare decisions, ultimately improving child health outcomes.

Ethical Statement

Ethical approval was obtained from the Institutional Ethics Committee, ensuring the study adhered to ethical research guidelines. Written informed consent was obtained from all participants after they were fully informed about the study's purpose, procedures and confidentiality measures, guaranteeing voluntary participation.

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