

Maternal Knowledge on Under-Five Diarrhoea in Mizoram: A Comparative Cross-Sectional Study of Rural and Urban Settings.

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Abstract:

Background: Diarrhoea is a significant public health issue, ranking as the third leading cause of mortality and morbidity, particularly affecting children under five years old. In India, it's reported that 7.3% of children among a sample of 223,785 experience diarrhoea, which is preventable and treatable. A study was conducted in Mizoram to evaluate the knowledge of mothers regarding diarrhoea, focusing on both rural and urban settings.

Methods: The research employed a quantitative approach and a comparative descriptive design, utilizing a non-probability purposive sampling technique to gather data from 100 mothers, evenly split between chosen locations in Thingsulthliah and Hlimen.

Findings: The findings revealed that 14% of mothers in the rural area had excellent knowledge of diarrhoea, contrasting with only 4% in the urban area. Overall, a majority demonstrated good knowledge, with 72% in rural and 74% in urban areas. Additionally, 14% of the rural sample and 22% of the urban sample exhibited average knowledge. Importantly, no respondents showed poor knowledge of the condition. Statistical analysis indicated no significant difference in knowledge levels across urban and rural samples, with a 'z' value of 1.96 compared to a calculated 'z' value of 1.8 at a 0.05 significance level.

Keywords: Diarrhoea, knowledge, mothers, children, urban, rural.

1. Introduction:

Diarrhoea is a common disease and one of the major determinants of childhood morbidity and mortality worldwide. It is the third leading cause of death in children under 5 years old, it is both preventable and treatable¹. Each year diarrhoea kills approximately 5,25,000 children under 5 years old, globally there are nearly 1.7 billion cases of childhood diarrhoea disease every year. It is estimated that out of 2,23,785 children, 7.3% children suffer from diarrhoea in India. And during 2018, about 13.19 million cases with 1,450 deaths were reported in India.

Diarrhoea can last several days and can leave the body without water and salts that are necessary for survival. In the past, for most people, severe dehydration and fluid loss were the main cause of diarrhea deaths. Now, other causes such as septic bacterial infections are likely to account for and increasing

proportion of all diarrhea associated deaths. Children who are malnourished or have impaired immunity as well as people having HIV are most at risk of life-threatening diarrhoea.

Worldwide, 780 million individuals lack access to improved drinking water and 2.5 million lack improved sanitation. Diarrhoea due to infection is widespread throughout developing countries. In low-income countries, children under 3 years old experience an average 3 episodes deprives the child of the nutrition necessary for growth. As a result, diarrhoea is a major cause of malnutrition and malnourished children and are more likely to fall ill from diarrhoea.

To control the disease, the WHO works with other states member and others to promote national policies and investment that support case management of diarrhoea and its complication as well as increasing access to safe drinking water and sanitation in developing countries. They conduct research to develop and test new diarrhoea prevention and control strategies in this area. It also involves helping to train health workers, especially at community level.

2. Objectives of the study:

- 1) To assess the level of knowledge regarding diarrhoea among mothers of under five children.
- 2) To compare the level of knowledge between mothers of under five children in rural and urban areas.

3. Hypotheses:

H1: There will be significant difference between the level of knowledge regarding diarrhoea among mothers of under five children in selected rural and urban area at 0.05 level of significance.

H01: There will be no significant difference between the level of knowledge regarding diarrhea among mothers of under five children in selected rural and urban area at 0.05 level of significance.

4. Materials and methods:

Research approach: A quantitative survey approach was used.

Research design: Comparative descriptive design was used.

Setting: The study was carried out at Thingsulthliah and Hlimen area.

Population: The population in the study comprised of mothers of under five children at Thingsulthliah and Hlimen.

Ethical Clearance: Ethical clearance was obtained from the Institutional Ethics Committee of Mizoram College of Nursing. Written informed consent was taken from all participants. **Conflict of Interest:** None declared

Funding: No funding received

Sample Size: 100.

Sampling: Purposive Sampling Technique was chosen.

Description of tool:

Tool 1: Semi-structured interview schedule.

Section-A: Demographic proforma with 8 items.

Section-B: Structured knowledge questionnaire with 15 MCQs.

Scoring: 0-3 Poor, 4-7 Average, 8-11 Good, 12-15 Excellent.

Reliability KR-20 = 0.93

Data collection:

Ethical clearance and informed consent obtained. The study was conducted at Thingsulthliah and Hlimen, Mizoram.

Data analysis:

Data Analysis: Frequency, percentage, mean, SD, chi-square. Significance at $p < 0.05$.

Results:

Demographic characteristics: Most mothers belonged to the 19–33 age bracket with **56%** of rural and **60%** of urban respondents. 8% had children under 5 in rural areas while only 2% had children under 5 during the data collection period. High school education and above was higher among urban mothers (**70%**) than rural mothers (**62%**). Government employment was consistently low with only **6%** of urban and **4%** of rural mothers. The majority (**40%**) earned **₹15,001–₹25,000**. Rural households mostly (**34%**) earned **₹5,000–₹15,000**. Extreme low income ($< ₹5,000$) was twice as frequent in rural areas (**14%**) than urban areas (**6%**). Half of the rural mothers (**50%**) had never received diarrhoea information. Conversely, only **24%** of urban mothers lacked this information. Information channels differed heavily by region. Informed rural mothers relied primarily on booklets (**20%**). Informed urban mothers predominantly used social media (**40%**). Remedial actions showed distinct regional choices. Rural mothers primarily utilized home management (**30%**). Urban mothers preferred hospital-based management (**26%**).

5. Knowledge regarding diarrhoea:

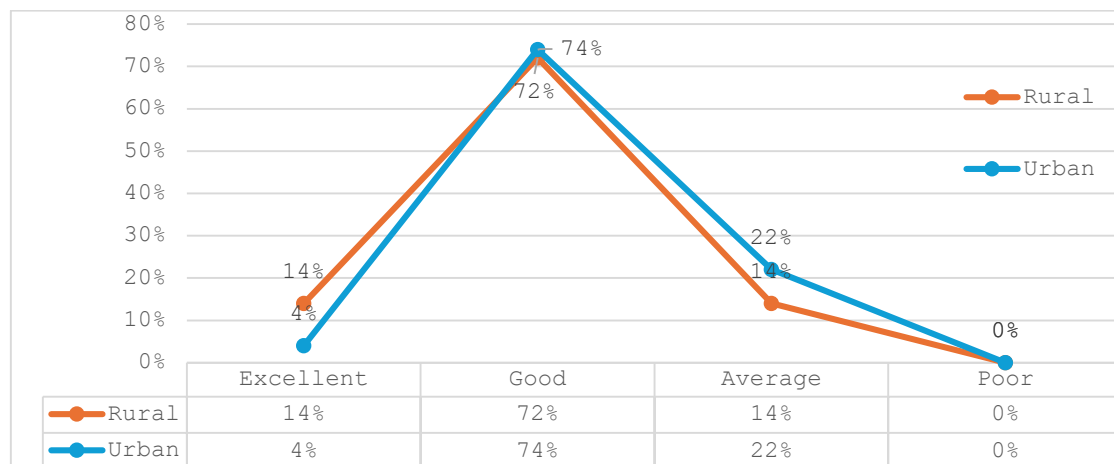


Fig 1. Knowledge regarding diarrhoea among under 5 children

Figure 1 displays the distribution of maternal knowledge concerning childhood diarrhea among mothers of children under five. In **rural regions**, the majority of mothers (**72%**) demonstrated a **good** level of knowledge, while equal proportions (**14% each**) exhibited **excellent** and **average** understanding. In contrast, data from **urban sectors** shows a slightly higher percentage of mothers with **good** knowledge (**74%**), whereas **22%** fell into the **average** category, and only **4%** achieved an **excellent** rating. Notably, **0%** of mothers in either setting demonstrated **poor** knowledge.

Table 1. Comparison of level of knowledge regarding diarrhoea among mothers of under five children in selected rural and urban area.

N=100

Knowledge Metrics	Rural Mothers	Urban Mothers	z-statistic	p-value	Significance Level
Mean	9.50	8.78	1.80	0.05	Not Significant ($\alpha = 0.05$)
Median	8.50	9.13	—	—	—
Standard Deviation (SD)	2.12	1.91	—	—	—

Table 1 shows that rural mothers achieved a slightly higher mean score (9.5 ± 2.12) than their urban counterparts (8.78 ± 1.91). Independent statistical testing yielded a z-score of 1.8 ($p = 0.05$), confirming that the variation in maternal knowledge between rural and urban sectors is not statistically significant at the 0.05 level.

6. Discussion:

The findings of this study reveal a high and statistically homogenous baseline of diarrhea-related awareness among mothers of children under five, with the vast majority falling into the "good" knowledge category (72% rural vs. 74% urban) and notably 0% demonstrating "poor" understanding. Descriptively, rural mothers achieved a slightly higher mean score (9.50 ± 2.12) vs. (8.78 ± 1.91) and a higher prevalence of "excellent" knowledge (14% vs. 4%), which contrasts with traditional literature that typically associates urban residency with superior health literacy. This rural edge can likely be attributed to the intensive, targeted efforts of grass-roots public health networks and frontline community healthcare workers who actively conduct door-to-door counseling in rural sectors. Conversely, the higher rate of "average" knowledge among urban mothers (22% vs. 14%) suggests that peri-urban or transient urban populations are occasionally bypassed by these localized surveillance networks despite their proximity to major medical facilities. Crucially, however, inferential testing confirmed that the variation between the two groups is not statistically significant ($z = 1.80$), ($p = 0.05$), indicating that modern public health infrastructure, standardized antenatal care, and widespread mobile connectivity have largely leveled the playing field, making geographical location a non-determining factor in primary maternal health literacy.

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