

Health-seeking behaviour and its determinants of health of Under-5 Children living in urban slums of Chennai, India 2018

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ABSTRACT

Background: Appropriate health-seeking behaviour could help in reducing child mortality and morbidity. Information on social factors of mortality and health-seeking behaviours of caregivers of under-5 children from slums of Indian cities is minimal in literature. **Objectives:** We estimated the prevalence of health-seeking behaviour for morbidity of under-5 children and its determinants in urban slums in Chennai city, India. **Methods:** A cross-sectional study was conducted using a mixed-method design among primary caregivers of under-5 children living in Chennai slums, India. Two-stage cluster sampling was adopted to select 40 slums. A total of 233 primary caregivers were interviewed. Nine focus group discussions and 18 in-depth interviews were conducted among the primary caregivers. Prevalence of inappropriate health-seeking behaviour was estimated, and determinants were identified by multivariate binary logistic regression analysis. Thematic analysis was done on qualitative data. **Results:** We interviewed 233 primary caregivers. The weighted prevalence of inappropriate health-seeking behaviour for under-five children in urban slums of Chennai was 53.9% (95% CI: 46.9 - 60.8). Primary caregivers educated above secondary school were more likely (AOR of 2.3, 95% CI: 1.3-4.1) to follow inappropriate health-seeking behaviour compared to those educated below. Similarly, caregivers who were unaware of young child feeding practices (AOR of 3.6, 95% CI: 1.9-6.5) and early care-seeking and health practices (AOR of 2.5, 95% CI: 1.3-4.9) were more likely to engage in inappropriate health-seeking behaviour compared to those who were aware and we found that illness symptoms influenced health-seeking behaviour and that early disease detection might prevent severe illness. **Conclusion:** Health-seeking behaviour was found to be suboptimal among under-5 children in Chennai's urban slums. We suggest policymakers improve interventions on early care-seeking of common childhood illnesses in the urban health programme.

Keywords: Health-seeking behaviour, health utilization behaviour, slum, under-5 children

Background

Globally, child morbidity and mortality remain a challenge in the developing world. In 2019, the United Nations Organization estimated that 5.2 million under-5 children died worldwide, 81

per cent in Sub-Saharan Africa and Central and Southern Asia.^[1] In India, the under-5 mortality rate is 37 per 1000 live births, one of the highest globally.^[1,2] Maternal age, mother's education, social group, family type, and economic status influence child mortality in India.^[2,3] These factors also influence the healthcare-seeking behaviours of parents.

The infant and under-5 mortality rates for the poorest slum residents in urban areas are often higher than those in rural

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areas.^[4-6] In addition to inadequate infrastructure facilities, unfavourable environmental conditions, and socioeconomic differentials, counterproductive health-seeking behaviour would lead to high child morbidity and mortality in slums.^[5] According to the WHO, appropriate health-seeking behaviour could reduce child mortality and morbidity by 20 per cent.^[7,8] Prompt health-seeking is critical for the appropriate management of any illness. Understanding the determinants of health-seeking behaviour is essential to provide client-oriented services.^[9]

India is a diverse country by demography and population. Thus, regional characteristics affecting child mortality and health-seeking must be identified to develop effective child mortality prevention programmes.^[2] But there is very little literature available regarding the social factors of mortality and health-seeking behaviours of parents of under-5 children from slums of Indian cities. We also wanted to study social factors affecting early care seeking for under-5 children's common childhood diseases. Thus, understanding healthcare-seeking behaviour and its causes is essential to changing urban slum health policy.

A previous study from the same study setting in 2006 reported 2006, the prevalence of health-seeking behaviour was only 50 per cent.^[10] With this context, we investigated the health-seeking behaviour of caregivers of under-5 children in urban slums in Chennai city and explored the socio-behavioural and structural factors associated with health-seeking behaviour.

Methods

Study design: We adopted the concurrent mixed-method study design. We conducted a community-based cross-sectional survey among primary caregivers of under-5 children in the urban slums of Chennai city.

Study population: We included the under-5 children residing for the past 1 year in the selected slums and excluded those with chronic illness from our study as their health-seeking would be different.

Operational definition: We defined appropriate health-seeking as when a primary caregiver approached both Private and Government healthcare centres within 24 hours of the onset of their children's illnesses. Unhealthy Housing Condition is defined as an overcrowded house as per our study.

Sampling procedure: We adopted a two-stage cluster sampling method. In the first stage, Probability Proportional to Size (Under-5 children population) Systematic Sampling method was used to select the required number of slums for the survey. In the second stage of the selected slum, the requisite number of children under the age of 5 were randomly selected from a random household. *Sample size estimation:* The expected prevalence of health-seeking behaviour is 50% with an absolute precision of 10%, for a confidence level of 95% and a design effect of 2.0 for cluster sampling, after allowing for 20% non-response,

we estimated to include 240 under-5 children in our study. We planned to include six under-5 children in each slum from 40 slums to obtain 240 sample sizes. For qualitative interviews, we randomly selected nine slums for nine focus group discussions and 18 in-depth interviews among the primary caregivers of under-5 children.

Data collection instruments: We used a structured and pre-tested questionnaire to collect quantitative data from primary caregivers of under-5 children on health-seeking behaviour, health use and maternal and child health practices, including immunization, housing condition and brief child health evaluation. The health assessment used a questionnaire from a modified IMNCI checklist on case management of common childhood diseases.^[11] These quantitative tools were programmed into an Open Data Kit (ODK) Android application^[12] and installed on Tablet PCs for data collection. For qualitative methods, a pre-tested topic guide was used for focus group discussions and in-depth interviews.

Quantitative data collection procedure: The study tool was designed and pilot tested before starting. The field investigator checked the first randomly selected household for an eligible child and questioned the respondent (ideally the child's mother) if one was identified. Six under-5 children were surveyed in the selected slum. Each household had one eligible child. If there were multiple eligible children in the home; the youngest was selected. Interviews with eligible children's mothers followed written consent.

Qualitative data collection procedure: Nine focus group discussions and 18 in-depth interviews with primary carers were performed by six well-trained social workers. Audio and field notes were recorded during the 45–60-minute interviews. For confidentiality, only the primary carer was present during the interview.

Quantitative data analysis: Complex sample weighted analysis adjusted for non-response was used to calculate the prevalence of appropriate health-seeking behaviour and other characteristics along with a 95% confidence interval. The mean and standard deviation were also calculated for continuous variables. The Chi-Square test was used to test for an association between health-seeking behaviour and other independent categorical variables. We used multivariate binary logistic regression analysis and constructed the Hierarchical Well Formulated Model (HWFMM) by including all the variables to identify the determinants of health-seeking behaviour. Then we computed the adjusted odds ratio (AOR) with 95% CI for the significant associated variables adjusting for the other variables. All analysis was two-tailed, and a *P* value of less than 0.05 was considered statistically significant. The data was analysed using the survey data analysis module in STATA SE (version 13.0) software (StataCorp LLC, Texas, USA).

Qualitative data analysis: We conducted a thematic analysis of the collected qualitative data where the data were reviewed, and transcripts were re-read to identify important codes by two trained coders. The coding tree was framed and presented

in Figure 1. Typical statements were marked and used for later citation as verbatim. Data description and interpretation were done after the analysis using the ‘Across triangulation method’ to ensure data completeness using qualitative and quantitative approaches to identify similarities and differences.

Human participants protection: Institutional ethics committee approval was obtained for the study. Participants provided written informed consent before data collection. We have used pseudonyms in this article to present our findings to maintain the participants’ confidentiality.

Results

We interviewed 233 primary caregivers with a response rate of 97%. Of the 233 primary caregivers interviewed, 232 (99.6%) were mothers of the under-5 children. Table 1 shows the socio-demographic details of under-5 children and their primary caregivers. The median and interquartile range (IQR) of the age of the caregiver was 27 (25, 30) years, and the corresponding children’s age was 29 (14, 44) months. Median and IQR of family size were 4 (4, 5).

Current common childhood illness factors: Of the 233 under-5 children, 77 (33.1%) had an episode of illness in the previous 2 weeks from the interview date. Of 77 children, 57 (74%) reported cold or fever, but 9 (12%) had loose stools. Of the 77 children, 13 (16.9%) children had a second episode of illness in the previous 2 weeks from the date of interview.

Health seeking behaviour of the primary caregivers: Among 233 under-5 children, only 77 had illness in the defined period for whom health utilization behaviour was collected. The remaining 156 primary caregivers were given a hypothetical mild and severe

illness scenario for which their response for health-seeking behaviour was recorded.

The weighted prevalence of appropriate and inappropriate health-seeking behaviour among under-5 children was 46.1% (95% CI: 39.2 – 53.1) and 53.91% (95% CI: 46.9 – 60.8) with the design effect of 1.12 for cluster design, respectively.

FGD and IDI analysis of primary carers found that ‘Early detection of any disease may prevent severe illness’ was the major reason for early care of sick children. Thus, after triangulating quantitative and qualitative interviews, we identified the illness symptoms that influenced health-seeking behaviour.

Convulsions, dysentery, breathing difficulties and skin rashes in under-5 children were seen as severe diseases that required immediate medical treatment by caregivers. Meanwhile, symptoms such as vomiting, crying continuously, lethargy, rise in body temperature, redness of eyes and poor feeding were stated as mild illness. Symptoms of mild nature were stated as reasons for the delay in seeking a healthcare provider by primary caregivers.

Among 77 under-5 children who had common childhood illnesses in the previous 2 weeks of the interview, we observed 48 (62.4%) either delayed or not opted for appropriate health care for their illnesses.

During the FGDs and IDIs, primary caregivers stated that they administered the previously prescribed medicines of similar illnesses to their children for the current illnesses.

“When my child is sick, I’ll wait a day to see whether it gets better, then give medicine previously prescribed by the doctor. I’ll still take the infant to the hospital if it’s unwell” - Remya (IDI03).

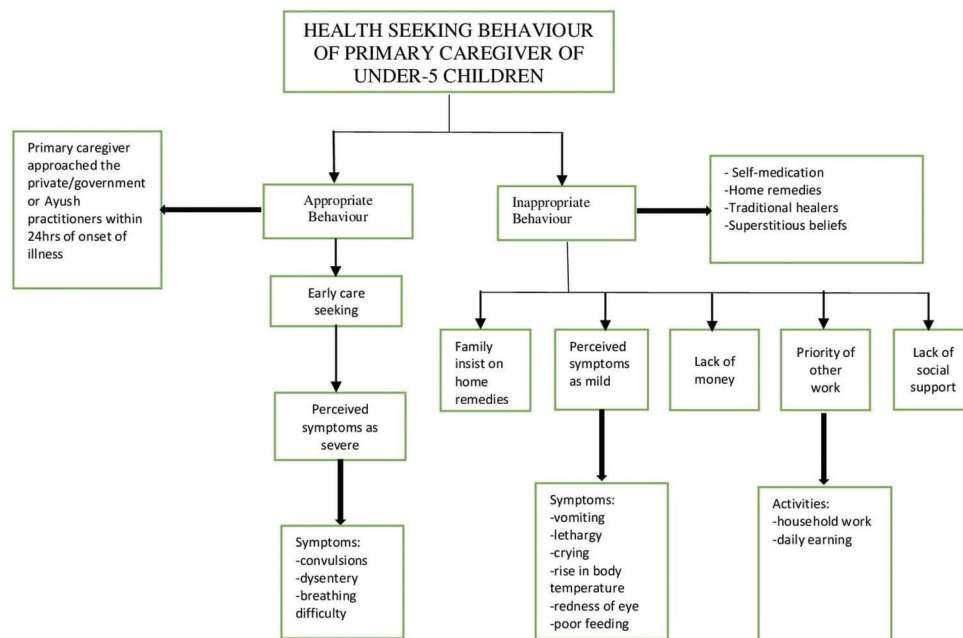


Figure 1: Coding tree

Table 1: Socio-demographic details of under-5 children and primary caregivers in urban slums of Chennai, India 2018, (n=233)

Child Details	n	%
Age (months)		
00–06	30	12.9
07–12	22	9.4
13–24	51	21.9
25–36	53	22.7
37–48	38	16.3
49–59	39	16.7
Gender		
Male	116	49.8
Female	117	50.2
Primary Caregiver Details		
Relationship to the Child		
Mother	232	99.6
Grandmother	1	0.4
Age (years)		
Less than 21	4	1.7
21–30	181	77.7
31 and above	48	20.6
Marital status		
Married	229	98.3
Separated/Widowed/Divorced	4	1.7
Education		
Less than Higher Secondary	126	54.07%
Higher Secondary and above	107	45.93%
Occupation		
Homemaker	173	74.2
Unskilled worker	26	11.2
Semi-skilled worker	10	4.3
Skilled worker	18	7.7
Student	1	0.4
Unemployed	5	2.1

Most of the primary caregivers preferred inappropriate practices like home remedies and visiting traditional healers for common illnesses of under-5 children. One of the mothers during IDI respondents said,

“Normally, she (Child) will get well if she is taken to church since she was born after I joined the church. So, when she gets sick, I will take her to the pastor and pray.” –Nita (IDI04).

During FGDs, we observed primary caregivers were influenced by their cultural and superstitious beliefs to seek appropriate care. One of the respondents from FGD said that,

“I won't take the child to the hospital if they have a fever or illness in an odd month like the first or third. If I go at odd months, the child's disease may worsen, therefore I attempt to manage at home.”- (FGD05).

One of the respondents in the FGD believed inappropriate practices as immediate recovery:

“For stomach pain, we used to give limca (lemon lime soda)” – (FGD03).

Among the 77 children who had the illness, 45 were taken to healthcare facilities. Of the 45, 17 (37.8%) children were taken after the first day of illness. We found that 3 (17.6%) primary caregivers mentioned lack of time to go to the health centre/hospital as a reason for delayed care.

Among the 29 primary caregivers who sought first care at the hospital, 10 (34.5%) went to government hospitals, while 19 (65.5%) went to private hospitals for treatment. Primary caregivers usually make decisions regarding the choice and place of treatment by their previous experiences. However, few caregivers said in IDI that even if they wanted to seek treatment for their children's illness at an appropriate health facility, the elderly family members or in-laws insisted on home remedies or self-medication as the first step of treatment.

Factors associated with health-seeking behaviour of primary caregivers: We examined the relationship between primary carers of under-5 children and inappropriate and acceptable health-seeking behaviour. Table 2 shows that housing conditions, primary carer education, recommended young child feeding practices, primary carer knowledge and early care-seeking were significantly associated with health-seeking behaviour.

Determinants of inappropriate health-seeking behaviour of primary caregivers: Three Hierarchical Well Formulated Models (HWFMs) of multivariate logistic regression analysis were performed to determine the factors associated with the primary caregivers' health-seeking behaviour for their under-5 children.

In Model 1, we included all the variables mentioned in Table 2 in HWFM and followed a backward elimination procedure without eliminating three preferred variables viz., child's age as continuous, age of the primary caregiver as continuous and gender of the child.

Primary caregivers educated above secondary and above were more likely [AOR of 2.3 (95% CI 1.3–4.1)] to follow inappropriate health-seeking behaviour than those educated below. Primary caregivers who were unaware of young child feeding practices were more likely [AOR of 3.6 (1.9–6.5)] to follow inappropriate health-seeking behaviour than those who were aware. Similarly, those who were unaware of early care-seeking and health practices were more likely [AOR of 2.5 (1.3–4.9)] to follow inappropriate health-seeking behaviour than those who were aware of, as mentioned in Table 3.

In Model 2, we included all the variables mentioned in Table 2 in HWFM and followed a backward elimination procedure typically without keeping any preferences in the variables. The determinants and the findings of Model 2 were similar to Model 1 [Table 3]. In Model 3, we included only the six variables with a P value of less than or equal to 0.2 from Table 2 in HWFM and followed a backward elimination procedure. The determinants and the findings were also similar to Model 1 and Model 2 [Table 3].

Table 2: Factors associated with health-seeking behaviour of primary caregivers in urban slums of Chennai, India 2018 (n=233)

Child Details	All n	Health Seeking Behaviour		P
		Inappropriate (n=125) n (%)	Appropriate (n=108) n (%)	
Age (months)				
00–06	30	14 (46.7)	16 (53.3)	
07–12	22	11 (50.0)	11 (50.0)	
13–24	51	28 (54.9)	23 (45.1)	
25–36	53	30 (56.6)	23 (43.4)	
37–48	38	22 (57.9)	16 (42.1)	
49–59	39	20 (51.3)	19 (48.7)	0.890
Gender				
Male	116	62 (53.4)	54 (46.6)	
Female	117	63 (53.8)	54 (46.2)	0.951
Place of Birth				
Private Health Facility	51	33 (64.7)	18 (35.3)	
Public Health Facility	182	92 (50.5)	90 (49.5)	0.073
Immunization Status				
Under Vaccinated/Not Vaccinated	20	12 (60.0)	8 (40.0)	
Vaccinated up to age	213	113 (53.1)	100 (46.9)	0.551
Weight for Age				
Malnutrition	54	29 (53.7)	25 (46.3)	
Normal	179	96 (53.6)	83 (46.4)	0.993
Primary Caregiver Details				
Housing Condition				
Unhealthy Housing Condition	209	117 (56.0)	92 (44.0)	
Healthy Housing Condition	24	8 (33.3)	16 (66.7)	0.035
Age (years)				
<21	4	3 (75.0)	1 (25.0)	
21–30	181	97 (53.6)	84 (46.4)	
31+	48	25 (52.1)	23 (47.9)	0.745
Education				
Less than Higher Secondary	126	60 (47.6)	66 (52.4)	
Higher Secondary and above	107	65 (60.7)	42 (39.3)	0.045
Knowledge on Immunization				
Unaware	20	13 (65.0)	7 (35.0)	
Aware	213	112 (52.6)	101 (47.4)	0.287
Recommended Young Child Feeding Practices				
Not followed	196	114 (58.2)	82 (41.8)	
Followed	37	11 (29.7)	26 (70.3)	0.001
Knowledge of Young Child Feeding Practices				
Unaware	132	90 (68.2)	42 (31.8)	
Aware	101	35 (34.7)	66 (65.3)	<0.001
Knowledge of Early Care-Seeking and Health Practices				
Unaware	73	54 (74.0)	19 (26.0)	
Aware	160	71 (44.4)	89 (55.6)	<0.001
Knowledge of Growth and Development Practices				
Unaware	57	33 (57.9)	24 (42.1)	
Aware	176	92 (52.3)	84 (47.7)	0.459
Maternal Health Practices				
Inappropriate	85	50 (58.8)	35 (41.2)	
Appropriate	148	75 (50.7)	73 (49.3)	0.230
Maternal Health Benefits				
Not Benefited	63	35 (55.6)	28 (44.4)	
Benefited	170	90 (52.9)	80 (47.1)	0.722

Finally, in all the above three models, the primary caregiver's education, knowledge of child feeding practices and

knowledge of early care-seeking health practices were statistically significant determinants of inappropriate

Table 3: Determinants of inappropriate health-seeking behaviour of primary caregivers for their under-5 children's common childhood illnesses in urban slums of Chennai, India 2018 (n = 233)

Determinants	Adjusted Odds Ratio (95% CI)		
	Model 1	Model 2	Model 3
Education of Primary Caregiver			
Higher secondary and above	2.3 (1.3–4.1)	2.2 (1.2–4.0)	2.2 (1.2–4.0)
Below Higher secondary	Ref.	Ref.	Ref.
Knowledge of Young Child Feeding practices			
Unaware	3.6 (1.9–6.5)	3.5 (1.9–6.5)	3.5 (1.9–6.5)
Aware	Ref.	Ref.	Ref.
Knowledge of Early Care-Seeking and Health Practices			
Unaware	2.5 (1.3–4.9)	2.5 (1.3–4.8)	2.5 (1.3–4.8)
Aware	Ref.	Ref.	Ref.

health-seeking behaviour for common childhood illnesses under-5 children.

Discussion

Our study found that nearly half of the primary caregivers were practising inappropriate health-seeking behaviour for the common childhood illness. We found the educational level, knowledge of young child feeding practices and early care-seeking practices of the primary caregivers influence the under-5 children's illnesses' health-seeking behaviour. Understanding the prevention of severity by early detection of illness was expressed as the primary reason to seek appropriate care. Self-beliefs, perception of the symptoms, awareness, affordability and support mechanisms were expressed as significant reasons for inappropriate health-seeking by the primary caregivers.

To improve the health of a population, it is necessary to encourage people to seek healthcare services by establishing accessible and well-equipped health facilities. Thus, the population's behaviour and ability to seek medical treatment influence healthcare facilities' use and success.^[8,13] Common childhood illnesses are manageable at the primary care level if recognized correctly and prompt care is provided at the earliest.^[14] However, this seems to be a significant challenge in the vulnerable populations such as the urban poor.^[8,13,14] Due to this common childhood illness leads to unfavourable outcomes. Many studies documented delays in seeking care by mothers attributed to large numbers of mortality in children.^[8,15–20] Due to this delay, even an existing established medical care facility goes underutilized. Therefore, appropriate healthcare-seeking behaviour is vital in preventing childhood morbidities and mortalities.^[8,21]

Our study found that health-seeking behaviour was influenced by the main carers' awareness of early care-seeking. In qualitative interviews, family and neighbours affected main carers' care location choices. Childhood ailments were explained by myths, beliefs and perceptions. It was difficult to provide accurate information about childhood illnesses and warning indications for quick care.^[22] Most of the IEC initiatives were not driven by the need and were not well targeted. A poorly designed health communication strategy may also lead to reverse

effects.^[23] Public advocacy through deeper relations, community mobilization, novel advertising, and personal selling, which is direct, one-on-one communication encompassing interpersonal communication and emphasizing the point service promotion is envisaged as essential strategies for better communication.^[23] Therefore, any health programme's technical and implementation unit should be supported well by a strong communication team to achieve the intended health communication. However, the challenge lies in the implementation of a programme.

The majority of the Indian population was burdened by large amounts of out-of-pocket expenditure on health. Besides, there is lesser expenditure towards health.^[24–26] This burden is ubiquitous across the income classes, and especially urban poor is burdened highly.^[27] Many studies reported that health expenditure was increased for the past few years among the slum population.^[27–31] During the past two decades, there has been a rise and increased utilization of the private sector in healthcare.^[32–34] Caregivers choose private care providers due to the community's popularity, closeness, drug availability and closer engagement with the care providers. According to our findings, carers prefer private hospitals for their child's illnesses. Thus, primary carers did not use government healthcare despite free treatment.^[15,32–35]

In slums, where most people survive on temporary labour, obtaining care is delayed. A liaison health worker must link such communities to promote healthy behaviour. Understanding this, India launched the urban Accredited Social Health Activist (ASHA) scheme under the National Urban Health Mission.^[36] Our study site, Chennai urban slums, has no urban ASHA. ASHA's absence may worsen the population's health-seeking behaviour. During disruptions like the COVID-19 pandemic, informal settlement individuals have trouble accessing health services. Health-focused policies and programmes may fail. Thus, to create a sustainable health system, focus on wider concerns.^[37] Considering this, NUHM mandates establishing urban health facilities to reach the urban poor better.

Our study's limitations. Primary caregiver' perception and practise of their children's illnesses influenced their health-seeking behaviour. We expected minimal illness reporting bias. Our study used mixed methods to overcome bias. Our quantitative and

qualitative findings matched. Our hierarchical well-formulated logistic regression models adjusted for many aspects to discover determinants to overcome limitations.

Conclusion and Recommendations

We found that 53.91% of under-5 children in Chennai's urban slums had inappropriate health-seeking behaviour for common childhood diseases. Literacy, early care-seeking knowledge and young child feeding methods influenced primary carers' health-seeking behaviour. Policymakers and programme managers should increase knowledge of early care-seeking for common childhood illnesses among primary carers of under-5 children. This could be achieved by institutionalizing the urban ASHA scheme of NUHM as a mandatory provision in urban slums.

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Ethical approval

We obtained approval from Institutional Human Ethics Committee from ICMR-National Institute of Epidemiology, Chennai on May 18, 2017 with the reference number NIE/IHEC/201704-01.

Take-Home Message

This study found a high prevalence of inappropriate health-seeking behaviour among primary caregivers of under-5 children in Chennai's urban slums. Caregivers with higher education levels were more likely to exhibit inappropriate behaviour, indicating the need for improved education and knowledge dissemination. Lack of awareness regarding young child feeding practices and early care-seeking and health practices also contributed to inappropriate behaviour. Recognizing the influence of illness symptoms on health-seeking behaviour, early disease detection initiatives should be prioritized to prevent severe illnesses. Interventions should focus on educating caregivers, increasing awareness and promoting prompt healthcare-seeking for better child health outcomes in these vulnerable communities.

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Conflicts of interest

There are no conflicts of interest.

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