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Healthcare-seeking Practices for Common Childhood Illnesses in Northeastern Albania: A Community-based Household Survey

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Authors' contributions

This work was carried out in collaboration among all authors. Author DD conceived and designed the study and wrote the paper. Author EG performed data analysis and interpretation. Authors EH and GV managed the literature searches and reviewed the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Appropriate medical care-seeking could prevent a significant number of child deaths and complications due to ill health.
Objectives: The purpose of our study was to assess care-seeking behaviour of mothers during childhood illnesses and its influencing factors.
Methods: A cross-sectional household survey was conducted in June-July 2012. 600 mothers of children 0-23 months old were selected randomly using a two-stage 30-cluster sampling technique in the three districts of the Diber region. Data collected generated information on 2-week child morbidity and care-seeking practices for acute respiratory infections (ARI) and diarrhoea. Descriptive, bivariate and multivariate logistic regression analyses were used to show frequency distributions and associations.
Results: The prevalence of ARI and diarrhoea were 11.2% and 11.5 %, respectively. Eighty-seven

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(64%) children were taken to a health facility for advice or treatment. For most of the children (59.6%) care-seeking started on the second and subsequent days of perceived onset of illness. Paediatricians at public hospitals were the most frequently consulted providers, visited by 58 (66.7%) mothers. Mothers' urban residence (OR=6.09, 95% CI: 1.14-41.72), having a male child (OR=6.02, 95% CI: 1.77-20.4), third and above wealth index (OR=6.02, 95% CI: 1.77-20.4), and knowledge of four or more child danger signs (OR=2.01, 95% CI: 1.04-7.22) increased the odds of 'prompt' care seeking.

Conclusions: The prevalence of appropriate healthcare-seeking behaviour in Diber is not adequate. Reinforcement of community based Integrated Management of Childhood Illnesses program may improve mothers' ability to recognize danger signs of childhood illness and care-seeking behaviour.

Keywords: Albania; care-seeking behaviour; childhood illness.

1. INTRODUCTION

Poor health during childhood can lead to lifelong health problems that limit social and economic opportunities. Improving children's health and reducing childhood morbidity and mortality are top priorities of the Albanian Ministry of Health.

In spite of improving trends, infant and child mortality and morbidity in Albania remain public health problems that require complex interventions in order to be addressed, especially when considering disparities related to socio-economic status, geographical location, place of residence, and ethnicity.

Infant and under five mortality rate in Albania were estimated 16 and 18 per 1000 live births in 2011 [1]. According to the 2010 Albania Demographic and Health Survey (ADHS) infants and children under five years in the mountain regions had the highest mortality rates, and children in rural areas were about two times as likely to die before their fifth birthday as those in urban areas. Among childhood deaths, around 17% resulted from acute respiratory infections (ARI) and another 2% from acute diarrhoeal disease [2].

Various studies from low- and middle-income countries have reported that both delays in seeking appropriate care and not seeking any care contribute to the large number of child deaths [3-5]. Factors such as pluralistic care-seeking practices (mixing various sources of health care, including home treatment), and the inability to recognize potentially life-threatening conditions were found to be associated with the delays [6]. Improving families' care-seeking behaviour could contribute significantly to reducing child mortality in poor-resource areas and countries. The World Health Organization estimates that seeking prompt and appropriate care could reduce child deaths due to ARI by 20% [7]. The integrated management of childhood illnesses (IMCI) strategy, besides improving health providers' skills in managing childhood illness, also aims to improve key family practices at the community level such as care seeking behaviour. In aiding this process, health workers are trained to teach the mothers about danger signs and counsel them about the need to seek care promptly if these signs occur [8].

Overall, there is a growing amount of literature on healthcare-seeking behaviour and the predictors of health services utilization, especially in low and middle-income countries [9].

However, no published quantitative studies have been found regarding the factors affecting healthcare-seeking behaviour for children in Albania. In the last ADHS, data indicated that no medical care was sought for 29% and 39% of the children less than five years of age with respiratory symptoms and diarrhoea, respectively. The purpose of our study was to assess care-seeking behaviour of the mothers and its influencing factors during common childhood illnesses in Northeastern Albania.

2. METHODS

The following parameters were assessed in the analysis of the care-seeking behaviour: (a) proportion of families seeking care outside home and sources of care sought; (b) appropriateness and promptness of seeking care for different illnesses; (c) the factors affecting the family's decision to seek care using Andersen's behavioural model of health care use that assumes that utilization of health care is influenced by the predisposition, the ability and the need to use health services (Fig. 1) [10].

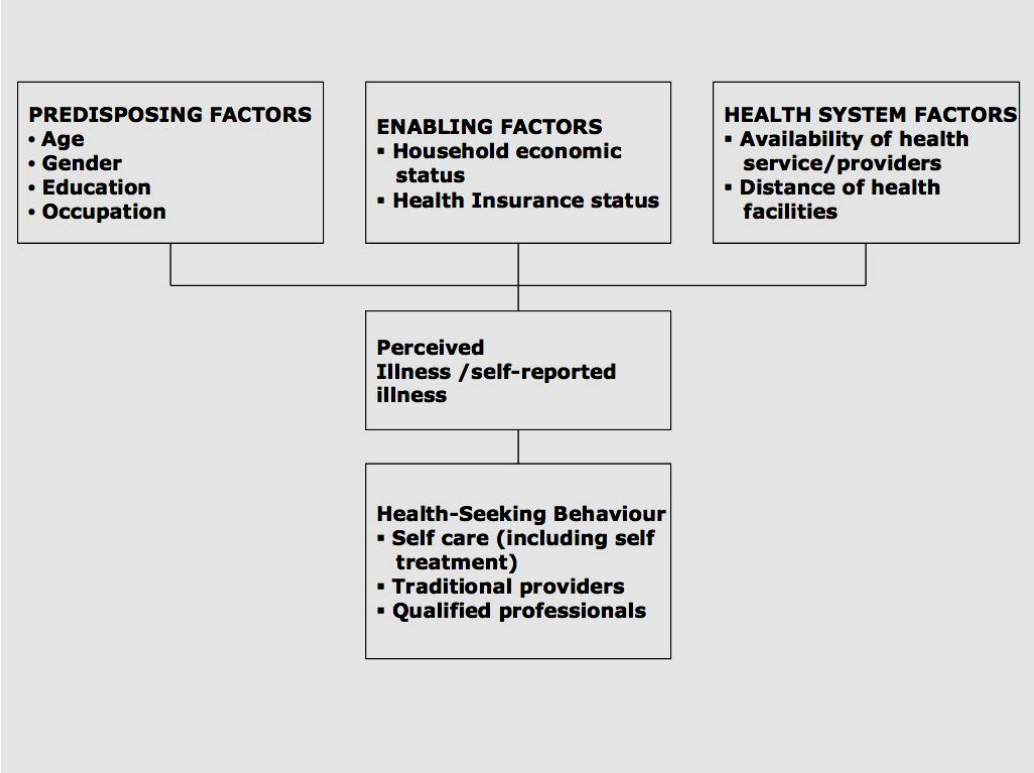

Fig. 1. Conceptual framework for care seeking behaviour for childhood illness (Modified from Andersen [10])

2.1 Study Area

The study was carried out in the Diber prefecture, an impoverished, rural mountainous area in northeastern Albania with over 26 percent of the population living in poverty. Diber is composed of three districts divided administratively into four urban towns and thirty-one rural communes. The total population is 193,860 and 74% of habitants live in rural areas [11].

From 2003 to 2008, the MoH implemented the Albania Child Survival Project (ACSP) aimed to improve the health status of mothers and children under the age five in Diber. A community-based intervention program named Community-IMCI+ was designed as a practical method for delivering essential health services at the community level through participation of trained health volunteers and qualified health providers. Among the areas of interventions were acute respiratory infections and control of diarrhoeal disease as the major causes of childhood illness in the area.

The healthcare in Albania is divided into three levels of service: primary, secondary and tertiary. Primary health care is delivered in urban areas through health centres and polyclinics, and in rural areas, through communes' health centres and village ambulances. The health centres are usually staffed by general practitioners (GP) and nurses/midwifes and provide maternity care, child health services and immunizations. The ambulances are staffed by nurse/midwifes and offer basic medical care and preventative activities. Polyclinics provide specialised outpatient care for patients referred by a family doctor. Secondary district hospitals provide inpatient care and include internal medicine, paediatrics, general surgery, obstetrics and gynaecology. Patients must be referred to hospital by a GP or specialist or through the emergency ward. Four national university centres located in the capital of the country provide tertiary care.

2.2 Design and Study Sample

We carried out a community-based cross-sectional survey using face-to-face interviews

with a structured questionnaire for mothers. A sample of 600 mothers with children aged less than 24 months was randomly selected from the three districts of Diber using a standard 30 cluster-sampling technique. The sample was twice the required sample size calculated using the standard formula for proportional data and taking into consideration the value of indicators related to childhood illness and healthcare-seeking behaviour, in order to get comparable results with those of two cross-sectional surveys conducted by the ACSP in the same area during October 2003 and July 2008, respectively. The sample was stratified by district, with 10 clusters chosen from each, not proportional to population size and adequate to allow comparisons between districts. The sampling was done in two stages: cluster sampling in each district, and simple random sampling for children 0 to 23 months within each cluster, obtained from the children immunization records at the health facilities.

2.3 Study Variables

We used two outcome variables: 'appropriate care', defined as care sought from qualified medical professionals in health facilities; and 'prompt care', defined as any type of care that was sought within 24 hours from the recognition of the illness.

Drawing on Andersen's model [10], independent variables used in this study include predisposing, enabling, and need characteristics of individuals. Predisposing characteristics included mothers' age, mothers' education level and employment status; child's age and sex, child's birth order and number of siblings. Perceived adequacy of staff and perceived availability of drugs were included as proxies for attitudes towards health services as expressed from general questions on healthcare utilization. In addition, mothers' knowledge of childhood danger signs was assessed and included in the variables.

Enabling characteristics included household characteristics such as place of residence, distance to health facility, and wealth status presented as a wealth quintile. The wealth index was constructed by employing a principal components analysis using household asset information [12]. The asset information covered information on household ownership of selected consumer items such as a television, a bicycle or a car, and dwelling characteristics such as source of drinking water, type of sanitation facilities, and type of material used for flooring. Each asset was assigned a weight (factor score), generated from the principal components analysis, and the resulting asset scores were standardized in relation to a normal distribution with a mean of zero and standard deviation of one [13]. Each household was then assigned a score for each asset, and the scores were summed for each household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quintiles from one (lowest) to five (highest).

For the need characteristics we used the perceived severity and type of illness (ARI and diarrhoea). Perception of severity of child illness was reported according to assessment using the mothers' subjective evaluation. Diarrhoea was defined as watery stools that occurred more than three times during any 24-hour period [14]. ARI was defined as continuous cough accompanied by rapid short breathing or difficulty in breathing. The period of recall of diarrhoea, ARI, and other symptoms of illness was limited to two weeks preceding the survey in order to reduce recall errors.

2.4 Data Collection

Data collection took place from June to July 2012. The questionnaire was prepared based on the Knowledge, Practice, and Coverage (KPC) survey questionnaire, developed by the CORE Group, and covered the study objective and variables. After pre-testing in the field the questionnaire was reviewed and modified according to the study's aims. Six teams consisting of twelve local trained health providers and three supervisors visited households to conduct interviews with mothers. The survey used the handheld pocket personal digital assistants (PDA) for the data collection, where the questionnaire was programmed using Pocket PC Creations software, version 3.3. Full survey and data management, range, skip and consistency checking were built into the data capture system.

2.5 Data Analysis

The supervisors checked all questionnaires at the end of each data collection day to ensure accuracy of data collection. After the data-entry was completed, another data cleaning was performed ensuring data validation through the double data entry using the specific module of EpiInfo. Before starting the analysis, each

variable was checked for abnormal values or different respondent rates.

The data were coded and analyzed using STATA statistical software (STATA 10.0, College Station, TX, USA). Summary statistics, such as means, standard deviations (SD), frequencies, and proportions, were used to summarize variables. Chi-square tests were used to identify associations between categorical variables with P-value less than 0.05 as the significance level. Logistic regression analysis was conducted to determine significant predictors of outcomes with estimation of the adjusted OR (odds ratio) and 95% CI (confidence interval).

2.6 Ethical Considerations

The Albanian Ethical Committee reviewed and approved the study protocol. Following ethical approval, permission to conduct data collection was obtained from the District Public Health Directories of Diber. Informed verbal consents were obtained from all the mothers who agreed to participate in the interviews.

3. RESULTS

The total number of participating households was 600, giving a response rate of 100%.

All respondents were mothers with the mean age of 27.4 (SD±5.5) years. The mean number of children was 1.4 (SD±0.5), and the mean age of the target child was 12.2 (SD±6.6) months. Two third (66%) of the target children were the first child in the family. No mother was illiterate and the majority of mothers (437 or 72.8%) had completed primary education. Approximately one forth of mothers had attained secondary education and above. Most women were housewives (90.2%) and only 65 (10.8%) worked outside home to earn a salary. 77.7% of women belonged to the lowest and second wealth quintiles while a smaller percentage (3.9%) belonged to fourth and highest quintile. Almost half of mothers (46.5%) considered the distance to the health facility “not a big problem” for them in accessing health care.

The mothers’ awareness about the danger signs of childhood illness was poor. None of the mothers was aware of all the danger signs. Four hundred and seventy five (95.8%) mothers were aware of fever; 456 (76%) knew about “child vomiting everything”; 450 (75%) mothers were aware about “persistent diarrhoea”, that lasts more than 14 days, as the danger signs, but only 65 (10.8%) mothers knew about “fast/difficult breathing” as the danger sign of childhood illness (Fig. 2).

Out of the total of 600 children aged less than 24 months, 218 (36.3%) were reported to have been sick within the 2 weeks before the survey. Coughing (57.3%) was the most commonly reported symptom, followed by fever (52.7%), watery diarrhoea (35.8%), difficulty in breathing (35.8%) and vomiting (27%). The prevalence of acute respiratory infections and diarrhoea, based on mother’s perception of illness were 11.2% and 11.5 %, respectively.

3.1 Healthcare-seeking Behaviour

In an overall view healthcare-seeking practice, out of 136 children with ARI and diarrhoea, 87 (64%) children were taken to health facilities or providers for medical care. No care was sought for 27 (20%) children whereas 20 (15%) children received home treatment (Fig. 3).

Of the total treated episodes of illnesses, care was sought within the first day of perceived onset of illness for 54 (40.4%) sick children. For the remaining 82 (59.6%) children, care seeking was started on the second and subsequent days of perceived onset of illnesses. Table 1 illustrates health care seeking behaviour by childhood illness.

As accounted by 129 (95%) mothers, worsening of illness was the main reason for visiting the health facilities. The main reasons for not seeking care reported by mothers were illness not severe 44 (32.3%), lack of money 38 (28%) and long distance from health facility 30 (22%) (Fig. 4).

The most common choice of provider was the paediatrician at the public hospitals; 58 (66.7%) of all mothers seeking care chose this source, followed by family doctor in public health centres/posts 23 (26.4%), home visits by village nurse/midwife (4.6%) and self medication (3%).

Among the reasons for choice of provider, the main reason, as reported by 88% of the mothers using said provider, was the quality of service (availability of drugs, laboratory tests, staff and most likelihood of finding a doctor).

The main reason for seeking care from public primary care facilities is ‘only facility available

nearby', reported by 61% of mothers who sought care from this source.

Among those who sought alternative forms of care, the main reason reported was higher likelihood of receiving treatment from said source rather than from formal sources of care.

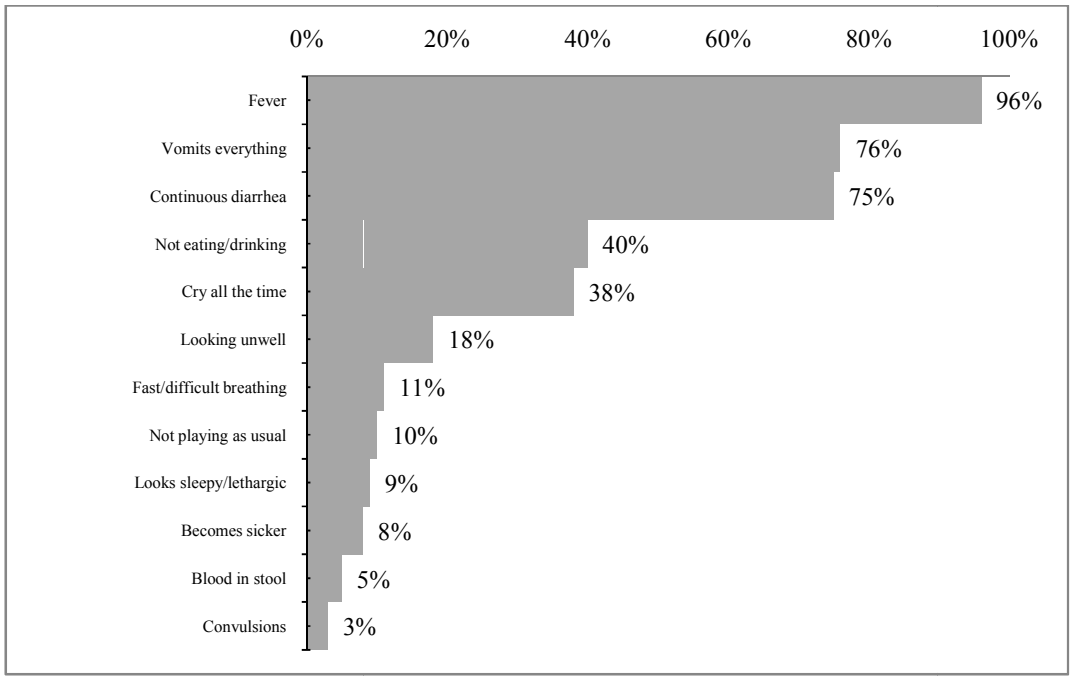

Fig. 2. Mothers' knowledge scale for childhood danger signs

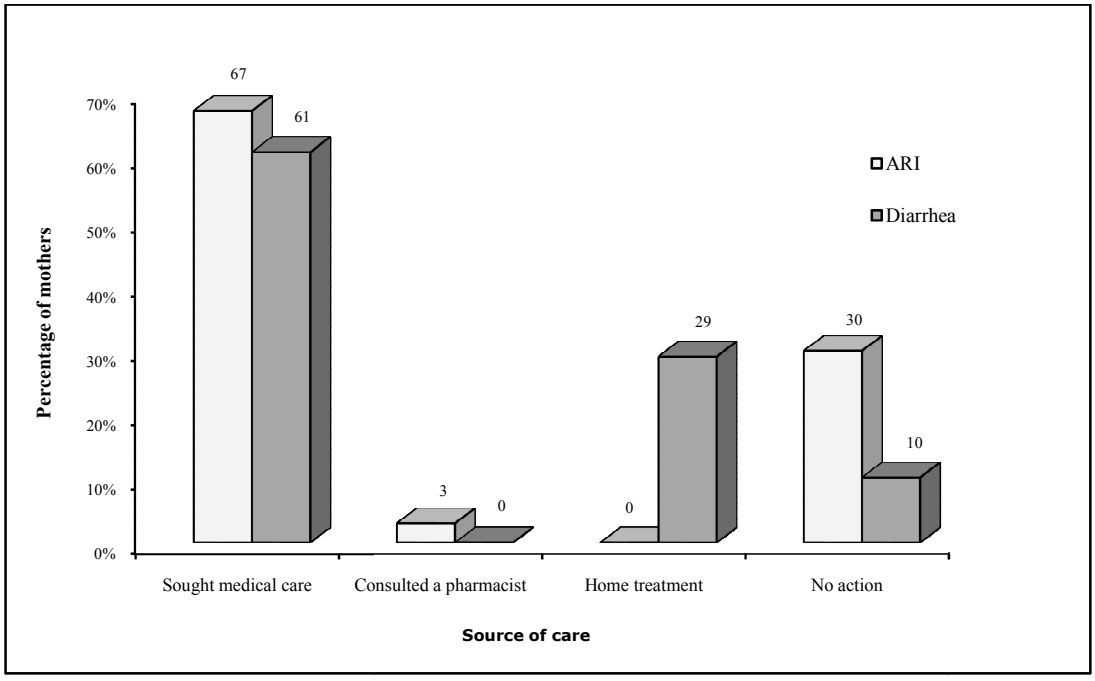

Fig. 3. Care seeking pattern for childhood illnesses

Table 2 shows the associations between healthcare-seeking behaviour and key variables.

According to the bivariate analysis, significant associations were observed between "prompt care seeking" and educational level of mothers (P=0.008), place of residence (P=0.006), child gender (P=0.042), household wealth level (P=0.012), distance to the health facility (P=0.009), mothers' knowledge of child danger signs (P=0.018) and perceived severity of illness (P<0.001). According to logistic regression analysis, mothers from urban area, who had a boy child, who belonged to the third wealth level and above and who knew at least four or more childhood danger signs were more likely to seek prompt medical care than the others, with the odds ratio of (OR=6.09, 95% CI: 1.14-41.72), (OR=4.95, 95% CI: 1.42-17.2), (OR=6.02, 95% CI: 1.77-20.4), and (OR=2.01, 95% CI: 1.04-7.22), respectively. However, mothers' level of education and perception of illness were no longer significant after adjusted to the other factors.

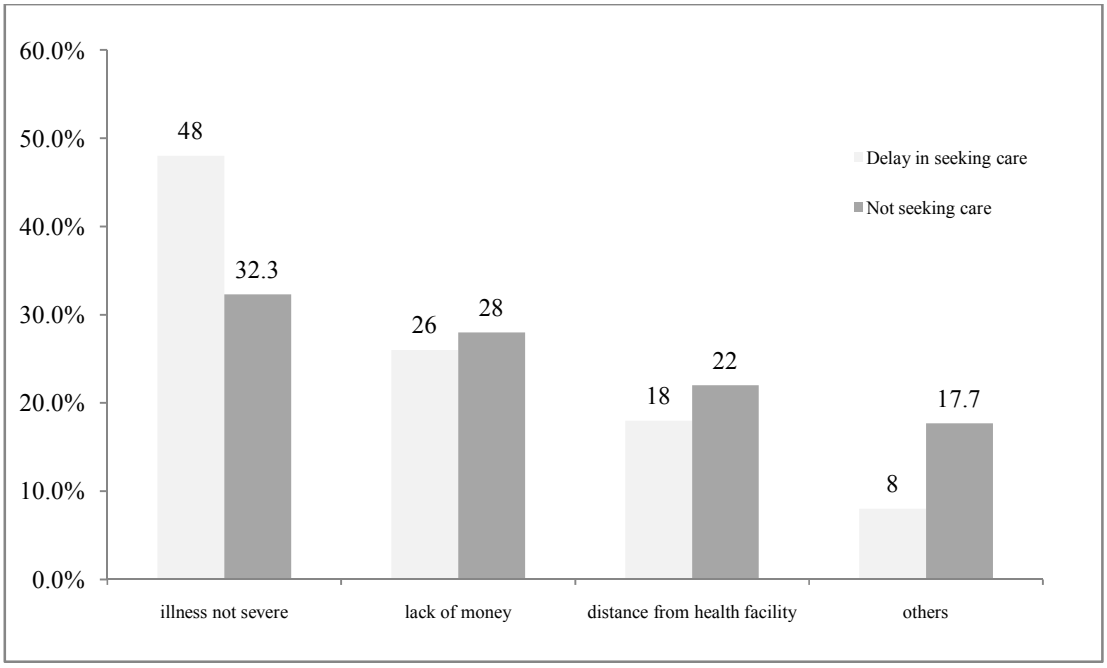

Fig. 4. Reasons for delaying and not seeking medical care

Table 1. Care seeking behaviour of mothers by childhood illness

Variables	ARI (N =67, 11.2%)	Diarrhea (N = 69, 11.5%)	Total (N=136, 22.6%)
Children taken to health facilities			
Yes	45 (67.1)	42 (60.9)	87 (64.0)
No	22 (32.8)	27 (39.1)	49 (36.0)
Type/place of facility/care			
Hospital	30 (66.6)	28 (66.6)	58 (66.7)
Polyclinic	1 (2.2)	1 (2.4)	2 (2.3)
Health centre	5 (11.1)	7 (16.7)	12 (13.8)
Ambulance	7 (23.3)	4 (9.5)	11 (12.6)
Home visit by nurse	2 (4.4)	2 (4.8)	4 (4.6)
Time of care seeking after onset of illness			
Within 1st day	24 (53.3)	30 (71.4)	54 (62.1)
After 2nd day	16 (35.6)	9 (21.4)	25 (28.7)
After 3rd day +	5 (11.1)	3 (7.2)	8 (9.2)

Table 2. Predictors of care seeking behaviour "prompt medical care" by logistic regression analysis

Variables	Prompt medical care		Chi-square (P-value)	Adjusted OR (95% CI)
	Yes (54)	No (33)		
Age of mother (years)				
< 21	5 (9.3)	3 (9.1)	0.078 (0.96)	
21 - 34	45 (83.3)	27 (81.8)		
> 35	4 (7.4)	3 (9.1)		
Educational level				
Secondary +	18 (33.3)	3 (9.1)	6.57 (**0.008**)	3.79 (0.51-28.3)
Primary 4-year/8-year	36 (66.7)	30 (90.9)		
Residence				
Urban	21 (38.9)	4 (12.1)	7.16 (**0.006**)	**6.90 (1.14-41.72)***
Rural	33 (61.1)	29 (87.9)		
Mother employed				
Yes	4 (7.4)	2 (6.1)	0.058 (0.58)	
No	50 (92.6)	31 (93.9)		
Age of the child (months)				
0 - 5	7 (13.0)	8 (24.3)	4.49 (0.1)	
6 – 11	15 (27.8)	12 (36.3)		
12 - 23	32 (59.2)	13 (39.4)		
Gender of the child				
Male	39 (72.2)	16 (48.5)	3.83 (**0.042**)	**4.95 (1.42-1.72)***
Female	15 (27.8)	17 (51.5)		
Number of siblings (0-5years)				
1	38 (70.4)	21 (63.6)	0.42 (0.33)	
> 1	16 (29.6)	12 (36.4)		
First child				
Yes	23 (42.6)	9 (27.3)	2.067 (0.11)	
No	31 (57.4)	24 (72.7)		
Wealth quintiles				
Third and above	31 (57.4)	10 (30.3)	6.039 (**0.012**)	**6.02 (1.77-20.4)****
First and second	23 (42.6)	23 (69.7)		
Distance to health facility				
No/some problem	38 (70.3)	14 (42.4)	6.65 (**0.009**)	3.74 (0.94-13.4)
Big problem	16 (29.7)	19 (57.6)		
Knowledge of danger signs				
≥ 4 signs	13 (24.1)	16 (48.5)	5.49 (**0.018**)	**2.01 (1.04-7.22)***
< 4 signs	41 (75.9)	17 (51.5)		
Perception of illness				
Not severe	19 (32.8)	23 (69.7)	2.87 **(0.000)**	1.57 (0.82-10.33)
Severe	36 (67.2)	10 (30.3)		

** P-value <0.05, ** P-value <0.01*

4. DISCUSSION

Prompt and appropriate care-seeking practices have the potential to substantially reduce child mortality in areas where common childhood illnesses are a major problem. Such care-seeking practices can play a preventative role for many deaths attributed to care-seeking delays and not seeking care [15]. In this study we found that prompt care was sought for only 40.6% of sick children. Additionally, we found that in the majority of the cases health-care seeking practices started on the second and subsequent days. Such findings indicate a clear need for improvement in child healthcare-seeking practices in the Diber region in Albania. Similar findings were reported from other countries [16,17] whereas; better practices were recorded from studies in Commonwealth of Independent States (CIS) countries [18,19]. In agreement with these studies, our work also suggests that a lacking of appropriate healthcare-seeking practices may be accounted for by differences by suboptimal accesses to health facilities,

educational backgrounds, cultural factors and socioeconomic status.

In the current analysis mothers' education, perceived severity of illness and knowledge of child danger signs, gender of the child, residence, distance to health facility, and wealth index, were significantly related to prompt health care.

The ability of mothers to recognize signs and symptoms of severe illness is believed to be an important predictor of timely and appropriate care seeking. One of the strategies of IMCI to reduce the under-5 child mortality is education of the mother on home care of the child during illness and after recovery, and on the signs of severe illness for which the child should be taken immediately to a health provider. From our findings resulted that mothers' knowledge of danger signs was poor. Knowledge of four or more danger signs was strongly associated with prompt care. Evidence from other studies suggests that community-based intensive behavioural communication strategies complementing clinic-based IMCI programs can reinforce mothers' perception of illness severity and increase timely use of qualified providers [20].

The results of logistic regression analysis indicated that prompt care seeking was positively associated with male sex of the child. The gender bias could be explained with the cultural beliefs among the male-dominated society of north Albania were the male child is considered the future torch bearer of the family, similar with the studies from Asia [21].

Our study also found the place of residence as a determinant factor where urban mothers were more likely to apply appropriate care seeking practices than rural mothers, particularly in timely care seeking. Such differences between urban and rural mothers could be explained by the proximity and lesser time needed to get to the health facility in urban areas. Enabling factors such as wealth index also appeared to affect timely and appropriate care-seeking practices likely due to the fact that poverty imposes a serious constraint on a family's choices about how to treat children's illnesses.

Our study found a high rate of utilization of public health facilities where 64% of children were taken to a public health facility or provider for advice or treatment. This high rate of utilization might be attributable to the free-of-charge public health service for children up to 18 years in Albania, and partly attributable to the regular outreach activities by primary health care staff for immunization and health promotion. Our results are consistent with national data from ADHS where care from health facilities was sought for 66% of children with common childhood illnesses as ARI, fever and diarrhoea. Contrary to the high utilization of public health services in this study area, studies in Pakistan, Guatemala, and Vietnam [22,23,24] showed a lack of confidence in public health services by the people. The reasons were mainly a lack of health staff, low quality of service, and a shortage of drugs. In addition, the quality of service provided has a substantial impact on the type of providers sought to treat children's illnesses [25]. Most of the mothers in our study were more likely to choose a public hospital over a public health centre or ambulance as a consequence of better quality of service provided by district hospitals. Moreover, a non-functional referral system and no gate-keeping mechanisms make it easier for patients to bypass primary care facilities to seek care from hospitals [26,27].

5. CONCLUSION

In conclusion, the prevalence of appropriate health-seeking behaviour for the preventable childhood illnesses in Northeastern Albania communities is not adequate. Gender of the child, place of residence, household wealth index and knowledge of child danger signs are the predictors of prompt care seeking. Reinforcement of community-based IMCI programs and tailored behaviour change strategies may improve mothers' care seeking behaviour and their ability to recognize danger signs of childhood illness.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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