

# Health Seeking Behavior of Mothers toward Acute Respiratory Tract Infection in Under-five Children in a Rural Area in Goa, India

Priydarshni P. Gadekar<sup>1\*</sup>, Vanita G. Pinto Da Silva<sup>2</sup>

<sup>1</sup>Junior Resident, Department of Community Medicine, Goa Medical College, Bambolim, Goa, India, <sup>2</sup>Associate Professor, Department of Community Medicine, Goa Medical College, Bambolim, Goa, India

## Abstract

**Background:** One of the major causes for mortality and morbidity among under-five children with acute respiratory tract infections (ARI) is a delay in seeking health care by the mothers. Even though early treatment in ARI has the potential to substantially reduce child mortality, health care seeking behavior (HCSB) is lacking among mothers of under-five children in developing countries. Mother needs to identify the danger signs of ARI and to seek prompt treatment. The aim of this study was to assess mothers' health-seeking behavior for ARI in under-five children in a rural area in Goa, India.

**Methods:** A community-based cross-sectional study was carried out on a sample of 302 mothers in Sanquelim town in Goa from June to August 2020. A systematic random sampling method was used for sample selection. Data were entered using Epidata Version 3.1 and transferred to SPSS version 22 software for analysis. Odds ratio (OR) with  $P < 0.05$  and 95% confidence interval (CI) was used to show the strength of association.

**Results:** A total of 302 mothers were enrolled in the study by systematic random sampling. It was observed that 237 (77.4%) mothers sought treatment from a qualified medical practitioner. Mothers with a male child had odds of seeking health care 4.40-fold (OR: 4.40, 95% CI: 2.510, 7.730) higher than the girl child. Mothers with parity of one had odds of health-seeking 0.359-fold (OR: 0.359, 95% CI: 0.197, 0.655) lower than mothers with parity of two and above. Mothers who were married had odds of seeking healthcare 41-fold (OR: 41.488, 95% CI: 13.95–123.334) than mothers who were single/divorced/widowed. Mothers with higher educational status were 2.08-fold (OR: 963, 95% CI: 0.336–2.757) likely to seek health care than those with no formal education. It was also observed in the current study that mothers with a sick child less than a year were 3-fold (OR = 1.78, 95% CI: 1.02, 4.13) more likely to seek healthcare than those whose child was >1 year. It was observed that 33 (11%) mothers sought health care for their sick child within a day of onset of illness, whereas 97 (32%) mothers availed of health care in <3 days of symptom onset and 172 (57%) mothers availed health care after 3 days of symptom onset. Hence, in the current study, it was observed that there was delayed HCSB of mothers toward ARI in under-five children in a rural area in Goa.

**Conclusions:** It was observed in the current study that there was a delay in seeking healthcare by the mothers for their sick child with ARI. Age and sex of the child, marital status of the mother, level of education, and parity were associated with the mother's HCSB for under-five children with ARI.

**Key words:** Health seeking behavior, Acute respiratory tract infection, Mothers

## INTRODUCTION

Acute Respiratory tract infection (ARI) in under-five children is one of the major public health problems

accounting for 15–30% of all under-five deaths in India.<sup>[1,2]</sup> It has been estimated that respiratory infections account for 6% of the total global burden of disease.<sup>[3]</sup> Furthermore, every year at least 300 million episodes of ARI occur in India, out of which about 30–60 million are moderate to severe ARI. Globally, every sixth child with ARI is Indian and every fourth child who dies due to ARI is from India.<sup>[4]</sup>

ARI accounts for 30–50% of visits to health facilities and 20–40% of hospital admissions.<sup>[5,6]</sup> Most of the infants die despite the implementation of evidence-based interventions such as Integrated Management of Childhood

Access this article online



www.ijss-sn.com

Month of Submission : 09-2021  
Month of Peer Review : 10-2021  
Month of Acceptance : 11-2021  
Month of Publishing : 11-2021

**Corresponding Author:** Dr. Priydarshni P. Gadekar, Department of Community Medicine, Goa Medical College, Bambolim, Goa, India.

Illnesses that put a substantial premium on early diagnosis and management of infants with ARI.<sup>[7]</sup> This calls for investigations into factors that may be associated with increased infant morbidity and mortality including delayed health-seeking. Studies suggest that common causes of under-five morbidity and mortality in developing countries could substantially be reduced with timely healthcare-seeking behavior (HCSB) of their families.<sup>[8,9]</sup> The survival of an infant from the physical stressors associated with acute illness is dependent on the identification of cues for the illness, time lag, and the decision to seek expert help by the mother “the so-called health-seeking behavior.”<sup>[10]</sup> A large number of children under 5 years of age die of ARI without ever reaching a health facility due to delays in seeking health care. The WHO has estimated that seeking health care on time could reduce child deaths due to acute respiratory infections by 20%.<sup>[7]</sup> Even though early treatment in ARI has the potential to substantially reduce child mortality in developing countries, HCSB is lacking among mothers of under-five children in India.<sup>[11]</sup> This calls for investigations into factors that may be associated with increased infant morbidity and mortality including delayed health-seeking.

To decrease mortality and morbidity due to ARI in under-five children at the community level, it is important to study the HCSB of mothers for acute respiratory infection. Hence, the current study seeks to assess the proportion of mothers seeking health care for ARI in under-five children, from a registered medical practitioner and to determine factors influencing mother’s HCSB.

## METHODS

A cross-sectional study was conducted in Sanquelim town to assess mother’s HCSB for children under 5 years with ARI. The current study was conducted from June to August 2020.

Sanquelim is a town in Bicholim Taluka of the North Goa, India. The study participants were chosen from 9 different localities in Sanquelim town namely Navelim, Harvalim, Honda, Karapur, Surla, Cudnem, Viridi, Amona, Podocem. The study population comprised of mothers who were residents of Sanquelim for a minimum duration of 1 year before the commencement of the study and had at least one child under 5 years of age. Data were collected in a structured questionnaire on sociodemographic characteristics, HCSB among mothers with children under 5 years of age and various factors affecting healthcare-seeking.

Sociodemographic variables were age, marital status, religion, education, employment, sex of the child,

socioeconomic status, and parity. Child-related factors were the sex and age of the child.

### Inclusion Criteria

Mothers who had at least one under-5-year-old child and living in Sanquelim for at least 1-year duration before the commencement of the study. The mothers of under-five children who had ARI in the last 1-month recall period and were willing to give informed consent were included in the current study.

### Exclusion Criteria

Mothers who are not willing to give informed consent for participating in the study and those who were not permanent residents of Sanquelim for the last 1 year were excluded from the study.

### Sample Size Determination

With an estimated proportion of health care seeking taken as 50% among mothers of under-five and  $d = 6\%$ , the sample size was calculated using the formula,

$$n = \frac{4 p q}{d^2} \quad n = \frac{4 \times 0.5 \times 0.5}{0.0036}$$

$$n = \frac{4 \times 0.5 \times 0.5}{0.0036}$$

$n = 277$ , rounded to  $n=302$ .

### Operational Definition

Health seeking behavior was defined as a mother who took treatment for her child with ARI at a health facility - hospital, health center, private clinic from a registered medical practitioner.

The factors which were assessed in the present study were child-related (age, sex) maternal factors (age, marital status, socioeconomic status, education, and parity).

The study was commenced in June 2020 after getting approval from the Institutional Ethics Committee of Goa Medical College.

### Data Collection

Face-to-face interviews were conducted using a structured questionnaire. A systematic random sampling technique was used for the selection of mothers from the household. Data were entered into EpiData version 3.1, and data analysis was performed using IBM SPSS Statistics version 22. The associations between independent variables and Health seeking behavior in terms of health care sought or not were tested for significance using the Chi-square test, and the odds ratio (OR) was estimated

**RESULTS**

**Sociodemographic Characteristics of Respondents**

A total of 302 mothers whose children aged under five (birth–59 months) were recruited in the study, making the response rate of 100%. The mean age of the mothers was 27 ± 6 SD years. Out of the total mothers 196 (64.9%) were Hindu by religion followed by 67 (22.2%) were Muslims and 39 (12.9%) were Christian. Of the total mothers, 269 (89.40%) of them had attended formal education and out of which the majority of the mothers had completed their primary schooling 114 (42.4%) and 89 (33.10%) mothers had attained secondary education and above. It was observed that 102 (33%) mothers were housewives while 96 (31.7%) of the mothers were farmers by occupation. Of the total number of mothers 256 (84.76%) were married while 46 (15.3%) were single/divorced/widowed [Table 1].

**Table 1: Sociodemographic characteristics of the respondents (mothers) 2020 (n=302)**

Mothers characteristics'	n (302)	Percentage
Age (years)		
15–20	36	
21–24	82	
25–30	103	
31–35	57	
>35	24	
Religion		
Hindu	196	64.9
Christian	39	12.9
Muslim	67	22.2
Education		
Illiterate	13	4.3
Primary schooling	129	42.4
Secondary schooling	108	36
Higher education	52	17.3
Occupation		
Housewife	102	33.77
Un skilled	21	6.95
Farmer	96	31.7
Skilled	46	15.2
Professional	37	12.2
Marital status		
Married	256	84.76
Single/Divorced	46	15.23
Socioeconomic status		
Class I	18	5.9%
Class II	49	16.22%
Class III	83	27.5%
Class IV	124	41.06%
Class V	28	9.3%
Age of the child in months		
<6 months	37	12.3%
6–11	67	22.2%
12–23	86	28.5%
24–59	112	37.1%
No of children		
≤2	183	60.5%
>2	119	39.5%
Sex of the child		
Male	169	56%
Female	133	44%

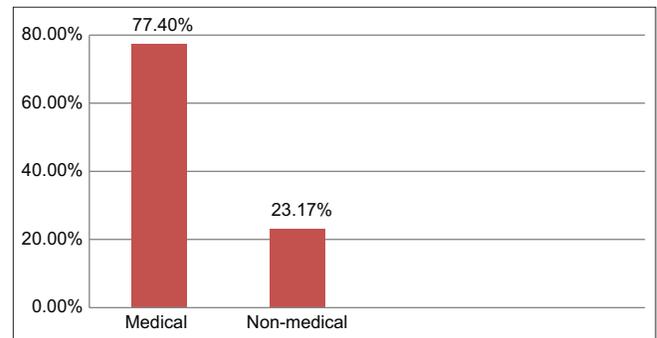
**Perception of the Magnitude of the Child’s Illness and Time Taken by the Mothers to Avail Health Care for Their Sick Child**

The most frequent symptoms perceived by the mothers during their child’s illness were fever 163 (53.9%), cough 128 (42.4%), excessive crying 89 (29.5%), fast breathing 36 (11.9%), and drowsiness 13(4.3%).

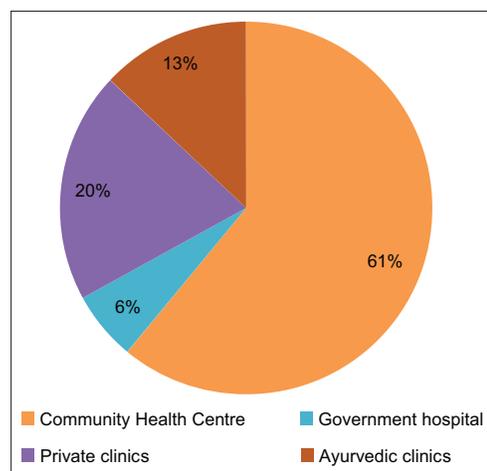
It was observed that 33 (11%) mothers sought health care for their sick child within a day of onset of illness, whereas 97 (32%) mothers availed themselves of health care in <3 days of symptom onset and 172 (57%) mothers availed health care after 3 days of symptom onset. Hence, in the current study, it was observed that there was delayed HCSB of mothers toward ARI in under-five children in a Sanquelim, Goa [Figure 1].

**HCSB of Mothers for Their Sick Child**

Figure 1 depicts the percentage of mothers who have availed of health care. In the present study, 77.4% of mothers sought health care for ARI in under-five children from a registered medical practitioner whereas 23.6% of mothers did not avail treatment. Of the mothers who did not avail health care from a registered medical practitioner sought non-medical health care for their sick child such as home remedies or visiting a traditional healer [Figure 2].



**Figure 1: Health care availed by the mothers**

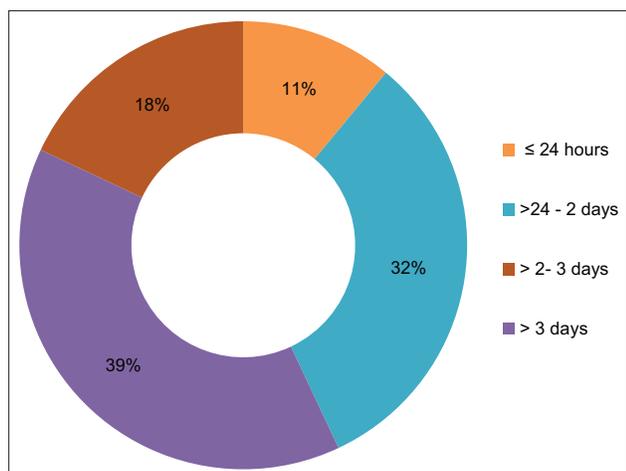


**Figure 2: Various health care facilities visited by mothers**

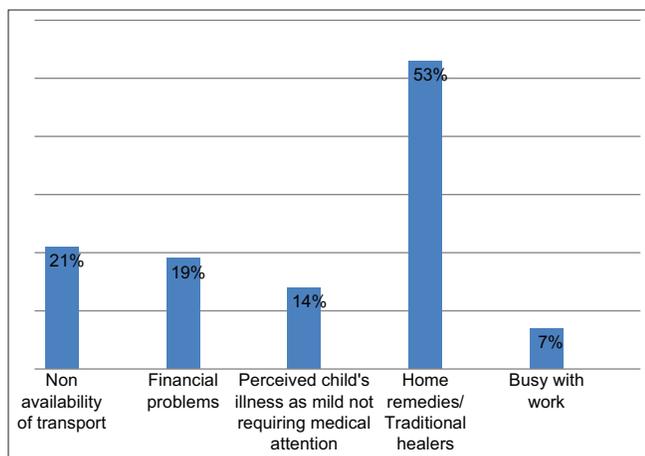
More than half of the mothers who sought health care took their child to a community health center (61%) while 20% of the mothers availed of treatment from private practitioners and very few mothers (6%) took the child to a government hospital [Figure 3].

**Reasons for Not Seeking Health Care by the Mothers for their Sick Child**

Figure 4 shows various reasons why the mother did not seek health care for their child with an ARI. In the current study, of the total mothers who did not seek health care, 34 (53%) of mothers treated their child with home remedies while 14 (21%) of the mothers could not avail treatment during child’s illness due to non-availability of transport. Whereas, nearly one fourth (19%) of the total mothers could not avail health care for their sick child due to financial constraints. Of the total 5 (7%) mothers were unable to seek health care due to busy work schedules [Figure 4].



**Figure 3: Time taken by the mother to seek health care for the sick child**



**Figure 4: Reasons why mother did not seek health care for their child with acute respiratory tract infection**

**Factors Associated with Mothers’ HCSB toward ARI in Under-five Children**

Mothers with a male child had odds of seeking health care 4.40-fold (OR: 4.40, 95% confidence interval [CI]: 2.510, 7.730) higher than the girl child. Mothers with parity of one had odds of health-seeking 0.359-fold (OR: 0.359, 95% CI: 0.197, 0.655) lower than mothers with parity of two and above. Mothers who were married had odds of seeking healthcare 41-fold (OR: 41.488, 95% CI: 13.95–123.334) than mothers who were single/divorced/widowed. Mothers with higher educational status were 2.08-fold (OR: 963, 95% CI: 0.336–2.757) likely to seek health care than those with no formal education. It was also observed in the current study that mothers with a sick child less than a year were 3-fold (OR = 1.78, 95% CI: 1.02, 4.13) more likely to seek healthcare than those whose child was >1 year [Table 2].

**DISCUSSION**

This study primarily aimed to assess the health-seeking behavior of mothers toward ARI in under-five children in Sanquelim, Goa.

In the current study, it was observed that the proportion of mothers seeking healthcare care for ARI in under-five children, from a registered medical practitioner was 77.4% which was similar to the finding reported in a study conducted by Ghosh *et al.*<sup>[11]</sup> among mothers of children in the age group 0–59 months in a rural area in Darjeeling district, in West Bengal which reported the proportion of health-seeking behavior among mothers to be 72.3%.

However, a study conducted by Astale *et al.*<sup>[12]</sup> on Help-Seeking behavior for Children with Acute Respiratory Infection in Ethiopia reported only 27.2% of mothers took their child to a health care facility. A similar study conducted by Wardlaw *et al.*<sup>[13]</sup> reported the prevalence of Health seeking behavior in developing countries to be 54% and South Asia was about 59%.

It was observed in our study that more than half of the mothers who sought health care took their child to the community health center (61%) while 20% of the mothers availed of treatment from private practitioners and very few mothers (6%) took the child to the government hospital. However, in a study conducted by Minz *et al.*<sup>[14]</sup> in an urban slum of Lucknow, the respondents primarily preferred a qualified private practitioner (65.4%), followed by an unqualified private practitioner (26.9%) and a tertiary care health center (7.8%). Another study by Annadurai *et al.*<sup>[15]</sup> in Tamil Nadu reported that around 81.15% of the caregivers preferred a private doctor during any childhood illness and as few as 18.85% preferred a government health center

**Table 2: Factors associated with mothers' health care seeking behavior toward childhood ARI in under five children in Sanquelim, Goa 2020**

Variables	Mothers seeking treatment from health care facility			OR (95% CI)
	Healthcare sought	No healthcare sought	Chi-square	
Marital status				
Married	223	43	0.00	41.488 (13.95–123.334)
Single/Divorced	4	32		
Educational status				0.046 (0.16–0.134)
Illiterate	3	10	0.00	0.322 (0.124–0.837)
Primary schooling	52	77		0.963 (0.336–2.757)
Secondary schooling	67	41		
Higher education	35	17		
Sex of the child			0.000	4.404 (2.510–7.730)
Male	137	32		
Female	95	38		
Parity				
<2	125	58	0.001	2.784 (1.52–5.075)
>2	102	17		

In the current study, mothers with a sick child less than a year were 3-fold (OR = 1.78, 95% CI: 1.02, 4.13) more likely to seek healthcare than those whose children were >1 year. The finding was consistent with the studies by Sreeramareddy *et al.*,<sup>[16]</sup> Dey *et al.*,<sup>[17]</sup> Sankarapandian *et al.*,<sup>[18]</sup> and Page *et al.*<sup>[19]</sup> who had shown that the younger the age group of children, more health care utilization than others. In our study, we observed that female children had lower odds of being taken to a health facility during the time of illness. A study done by Sreeramareddy *et al.*<sup>[16]</sup> had shown similar findings, wherein a female child had lower odds of being taken to healthcare providers (AOR 0.87, 95% CI: 0.78–0.97) which is consistent with the findings in our study which shows that female children had lower odds while a male child had higher odds of seeking health care. A study by Yerpude *et al.*<sup>[20]</sup> done among the rural population of Gujarat had a difference in the health-seeking behavior with male children given earlier access and better care toward the ailments in comparison to their female counterparts.

In the present study, mothers with higher educational status were 2.08-fold (OR: 963, 95% CI: 0.336–2.757) likely to seek health care than those with no formal education. Similar findings were observed in a study conducted by Manna *et al.*<sup>[21]</sup> wherein, there was a significant association between education and health-seeking behavior among mothers.

Our study reported that of the total mothers who did not seek health care, 34 (53%) of mothers treated their child with home remedies while 14 (21%) of the mothers could not avail treatment during child's illness due to non-availability of transport. Whereas, nearly one fourth (19%) of the total mothers could not avail health care for their sick child due to financial constraints. Of the total 5 (7%) mothers were unable to seek health care due to busy work

schedules. A study conducted by Mishra *et al.*<sup>[22]</sup> revealed that the reasons for not seeking healthcare were mainly due to the use of home remedies suggested by family members and neighbor's (48.79%), loss of wages (17.07%), previous experience with the health services (17.07%), and lack of knowledge about the danger signs of acute childhood illness (17.07%).

## ACKNOWLEDGMENTS

The authors would like to thank all the staff members of Primary health center Sanquelim for their valuable support and the study participants for their cooperation during the study.

## DECLARATIONS

### Ethical Approval

Approval taken from Institutional Ethics Committee of Goa Medical College, Bambolim.

## REFERENCES

1. Sultana M, Sarker AR, Sheikh N, Akram R, Ali N, Mahumud RA, *et al.* Prevalence, determinants and health care-seeking behavior of childhood acute respiratory tract infections in Bangladesh. *PLoS One* 2019;14:e0210433.
2. Lal S. Epidemiology of communicable diseases and related national health programmes. In: *Textbook of Community Medicine*. 3<sup>rd</sup> ed. New Delhi: M/S CBS Publishers & Distributors; 2011.
3. World Health Organization. *Global Estimate of Incidence of Clinical Pneumonia Under Five Years Old*. Geneva, Switzerland: World Health Organization; 2004.
4. Prajapati B, Talsania N, Sonaliya KN. A study on the prevalence of acute respiratory tract infections (ARI) in under-five children in urban and rural communities of Ahmedabad district, Gujarat. *Natl J Community Med* 2011;2:255-9.
5. Kallander K. *Case Management of Childhood Fevers in the Community*:

- Exploring Malaria and Pneumonia Care in Uganda. South Korea: Division of International Health, Department of Public Health Sciences; 2005.
6. Sharma D, Kuppusamy K, Bhoorasamy A. Prevalence of acute respiratory infections (ari) and their determinants in under five children in urban and rural areas of Kancheepuram district, South India. *Ann Trop Med Public Health* 2013;6:513.
  7. World Health Organization. Technical Bases for the WHO Recommendations on the Management of Pneumonia in Children at First Level Health Facilities. Geneva: World Health Organization; 2012.
  8. Ajibade B, Amoo P, Adeleke M, Oyadiran G, Kolade O, Olagunju R. Determinants of mothers health seeking behaviour for their children in a Nigerian teaching hospital. *IOSR J Nurs Health Sci* 2013;1:9-16.
  9. World Health Organization. State of Inequality: Reproductive, Maternal, Newborn and Child Health. Geneva, Switzerland: World Health Organization; 2015. Available from: [http://www.apps.who.int/iris/bitstream/10665/164590/1/97892415\\_64908\\_eng.pdf](http://www.apps.who.int/iris/bitstream/10665/164590/1/97892415_64908_eng.pdf). [Last accessed on 2021 Nov 13].
  10. Wambui WM, Kimani S, Odhiambo E. Determinants of health seeking behavior among caregivers of infants admitted with acute childhood illnesses at Kenyatta national hospital, Nairobi, Kenya. *Int J Pediatr* 2018;2018:5190287.
  11. Ghosh N, Chakrabarti I, Chakraborty M, Biswas R. Factors affecting the healthcare-seeking behavior of mothers regarding their children in a rural community of Darjeeling district, West Bengal. *Int J Med Public Health* 2013;3:12.
  12. Astale T, Chenault M. Help-seeking behavior for children with acute respiratory infection in Ethiopia: Results from 2011 Ethiopia demographic and health survey. *PLoS One* 2015;10:e0142553.
  13. Wardlaw, Tessa M, Johansson EW, Hodge MJ. Pneumonia: The Forgotten Killer of Children. United States: UNICEF; 2006.
  14. Minz A, Agarwal M, Singh JV, Singh VK. Care seeking for childhood pneumonia by rural and poor urban communities in Lucknow: A communitybased crosssectional study. *J Family Med Prim Care* 2017;6:211-7
  15. Annadurai K, Venkatesh S, Ramaswamy J. Healthseeking behaviour on child care among fisherman community of Kovalam village, Tamil Nadu, India. *Online J Health Allied Sci* 2015;14:5.
  16. Sreeramareddy CT, Sathyanarayana TN, Kumar HN. Utilization of health care services for childhood morbidity and associated factors in India: A national cross-sectional household survey. *PLoS One* 2012;7:e51904.
  17. Dey DK, Mishra V. Determinants of choice of healthcare services utilization: Empirical evidence from India. *Indian J Community Health* 2014;26:356-63.
  18. Sankarapandian V, Friberg IK, John SM, Bhattacharji S, Steinhof MC. Reported healthcare utilisation for childhood respiratory illnesses in Vellore, South India. *Int Health* 2011;3:199-205.
  19. Page AL, Hustache S, Luquero FJ, Djibo A, Manzo ML, Grais RF. Health care seeking behavior for diarrhea in children under 5 in rural Niger: Results of a cross-sectional survey. *BMC Public Health* 2011;11:389.
  20. Yerpude PN, Jogdand KS, Shan JH, Thacker KB. A study of factors which determine healthseeking behaviour of mothers for their underfive children in rural area of Gujarat. *Int J Community Med Public Health* 2017-4:4169-73.
  21. Manna B, Nasrin D, Kanungo S, Roy S, Ramamurthy T, Kotloff KL, *et al*. Determinants of health care seeking for diarrheal illness in young children in urban slums of Kolkata, India. *Am J Trop Med Hyg* 2013;89:56-61.
  22. Mishra K, Mohapatra I, Kumar A. A study on the health seeking behavior among caregivers of under-five children in an urban slum of Bhubaneswar, Odisha. *J Family Med Prim Care* 2019;8:498-503.

**How to cite this article:** Gadekar P. P, Da Silva VGP. Health Seeking Behavior of Mothers toward Acute Respiratory Tract Infection in Under-five Children in a Rural Area in Goa, India. *Int J Sci Stud* 2021;9(8):51-56.

**Source of Support:** Nil, **Conflicts of Interest:** None declared.