

PUBLIC OR PRIVATE: WHERE AND WHY ARE ILL NEONATES SOUGHT OUT FOR HEALTH CARE?

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ABSTRACT

Introduction

Care seeking behavior is a process of taking actions in the pursuit of health gain and obtaining treatment. Various factors influence mothers to choose public or private health care facilities for neonatal health and illness, which may help policy makers to achieve the Universal Health Coverage (UHC).

Objective

The study aimed to find out the factors associated with maternal care-seeking behaviors of their neonates' health and illness.

Methodology

A cross-sectional study was carried out among 248 mothers having neonates up to six months with the history of illness during their neonatal period, selected by applying 30 cluster sampling strategy. We entered data and then analyzed in SPSS with chi-square test and logistic regression analysis.

Result

Majority of ill neonates (68%) were sought out in public health facilities in Jumla. A few (6%) were taken to private facilities whereas more than one-fourth (28%) were either sought out nowhere or treated at home traditionally. Proportion of fever and acute respiratory infections (ARI) among neonates was almost half (46.4%) and one-fifth (19%), respectively. Multivariate logistics regression showed that mothers with primary education and above had an odds of 25 (95% CI, 1.44-333.0), with a self-decision had an odds of 11.29 (95% CI, 2.26-56.00), and walking distance of ≤30 minutes to health facility had an odds of 104.2 (95% CI, 3.80-2821.4), for seeking out the remedy in public health facilities for their neonates.

Conclusions

The study concluded that more than half neonates were ill from different diseases and more than two-thirds of them were taken to public health facilities to seek out for remedy. Maternal education having at least primary level, with a self-decision, and less distance to health facilities were the probable factors of choosing public health facilities for seeking out the remedy for neonatal illness. Nonetheless, further studies with larger sample size and stronger designs are warranted for a firmer conclusion.

KEYWORDS

Care seeking, Illness Behavior, Nepal, Neonate, Remote, Primary health care, Universal health coverage



INTRODUCTION

A behavior is the internally coordinated responses of an individual, to internal as well as external stimulus, which is changeable.^{1,2} Health care seeking behavior has emerged as a tool to tackle perceived health and illness by taking remedial actions.³⁻⁶ People seek health services for health protection and control.⁷

Worldwide under-five deaths was 6.6 million in 2012, in which 44% of deaths occurred during neonatal period.⁸ Neonatal death rate of Nepal in 2011 was 33 per 1000 live births and the mountain region had the highest.⁹ Amid this, we aimed to find out the factors associated to care-seeking behavior of neonatal illnesses to public or private health facilities in Jumla district of Nepal.

METHODOLOGY

A community-based cross-sectional study was conducted asking mothers having neonates up to six months. We interviewed using a pretested semi-structured questionnaire from July to Dec, 2015. WHO/EPI 30 cluster sampling method was applied to reach 248 mothers with a minimum of seven in each cluster. In order to catch up with the required participants to include, snowballing strategy was applied in clusters. Ethical approval was taken from Nepal Health Research Council with the registration number of 240/2015 and verbal consents were taken from mothers. Descriptive analyses were carried out to describe socio-demographic, knowledge, and practice variables after entering data in SPSS version 16. Outcome variables were dummied as public and private facilities whereas we also included home/traditional treatments in private facilities. Variables significant at $p < 0.1$ in bivariate analyses were entered into multivariate logistic regression to find out adjusted odds ratios. Mother's perceived satisfaction, afford ability, and accessibility of health services were measured on five-point Likert scales and indexed with adding the values.

RESULTS

Among the 248 enrolled, 153 neonates were found ill during their neonatal life. Almost half (49.2%) were born from mothers aged 20–24 years followed by adolescent (15–19 years) mothers (21.4%). Male (51.2%) and female neonates were nearly equal.

Among the ill neonates, almost half (48%) suffered from fever followed by ARI including pneumonia (18.2%), diarrheal disease (14.2%), neonatal Jaundice (5.4%) and other diseases (14.2%)

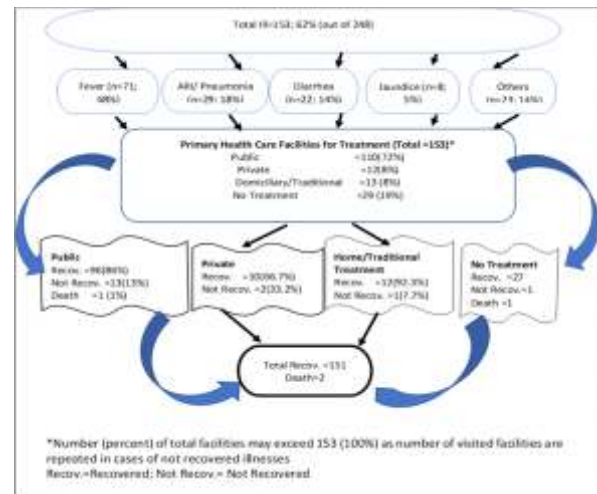


Figure 1: Neonatal treatment-seeking behaviors and outcomes

Among the ill (n=147), more than two-thirds (68.2%) sought out in public health facilities and more than six out of every seven (86%) of them got cured, and thirteen percent needed further treatment (Figure 1).

Table 1. Accessibility, Perceived Satisfaction and affordability of health services

Variable	Public n (%)	Private n (%)	Total n (%)	X ² -statistic (p-value)
Maternal Perceived Satisfaction of services (n=124)[@]				
Poor	18(90.0)	2(10.0)	20(17.5)	0.52 (.47)
Good	87(83.65)	17(16.35)	104(82.5)	
Maternal Perceived Access to Health Facilities (n=124)[@]				
Poor	51(86.44)	8(13.56)	59(47.6)	0.26 (.60)
Good	54(83.08)	11(16.92)	65(52.4)	
Walking Distance (n=124)[@]				
≤30 minutes	74(81.32)	17(18.68)	91(73.4)	2.97 (.08)
>30 Minutes	31(93.94)	2(6.06)	33(26.6)	
Maternal Perceived Affordability to Cure (n=124)[@]				
Not affordable	36(75.0)	12(25.0)	48(38.7)	5.65 (.017)*
Affordable	69(90.79)	7(9.21)	76(61.3)	

[@]include both first (119) and second (5) time seeking; *significant at .05 level

Out of 124 (including both first and second time) ill neonates, 105 visited to public and 19 visited to private health facilities. Only perceived afford ability was found significant for the difference in public and private facilities to seek care ($p = .017$) (table 1). In subsequent analyses, we checked out the factors affecting mothers' preference to public or private HFs to seek out the care. We explored the socio-demographic characteristics, service-related characteristics and neonatal illness or disease, time and distance related factors, to find the strength of association.

Table 2. Bivariate analysis of socio-demographic characteristics with care seeking behavior

Factor	Type of health facilities		Chi-square statistic	P-value	UOR	(95%CI)
	Public	Private				
Caste (n=119)						
Brahmin/Chhetri	73(86.9)	11(13.1)	1.755	0.185	1.966	(0.715-5.410)
Dalit ^a	27(77.14)	8(22.86)				
Maternal age (n=119)						
≤22 years	56(88.89)	7(11.11)	2.352	0.125	2.182	(0.793-6.004)
>22 years	44(78.57)	12(21.43)				
Maternal education(119)						
Up to primary	50(73.53)	18(26.47)	13.05	0.001 [#]	18	(2.315-142.0)
Above primary	50(98.04)	1(1.96)				
occupation(n=119)						
Agriculture	83(82.18)	18(17.82)	1.713	0.3 [#]	1	(0.46- 29.412)
Non-agriculture	17(94.44)	1(5.56)				



Birth order (n=119)						
1 st & 2 nd	73(86.9)	11(13.1)	1.122	0.289	1	(0.001-1.592)
3 rd & above	27(77.14)	8(22.86)			0.58	
Sex of child (n=119)						
Female	49(83.05)	10(16.95)	0.083	0.773	0.86	(0.325-2.306)
Male	51(85.0)	9(15.0)			1	

^θ including 1 Lama; [#]Fisher's exact test; *Significant at p<0.05
Table 2 shows that mothers having upto primary level education were 18 times (UOR: 18.0; 95%CI: 2.32-142.0) more likely to visit public health facilities than those having above primary level.

Table 3: Bivariate analysis of care seeking behavior and related factors

Factor	Type of health facilities		Chi-square statistic	P- value	UOR	95% CI
	Public	Private [§]				
Disease type (n=124) [@]						
Diarrhea/Jaundice/ Others	45(91.84)	4(8.16)	3.2	0.081 [#]	2.813	(0.874-9.05)
ARI/Fever	60(80.0)	15(20.0)			1	
Severity stage (n=124) [@]						
Mild/Moderate	78(82.98)	16(17.02)	0.864	0.561 [#]	1	
Severe/very severe	27(90.0)	3(10.0)			1.845	(0.499-6.849)
Delay diagnosis (n=124) [@]						
≤3 Days	88(84.62)	16(15.38)	0.002	1.000 [#]	0.971	(0.255-3.699)
>3 Days	17(85.0)	3(15.0)			1	
Reason for seeking health facilities (n=124) [@]						
Self-decided	86(89.58)	10(10.42)	7.886	0.005 [*]	4.074	(1.457-11.39)
Recommended	19(67.86)	9(32.14)			1	
Waiting time (n=124) [@]						
≤15 Minutes	69(84.15)	13(15.85)	0.462	0.497	0.685	(0.228-2.052)
>15 Minutes	36(87.8)	5(12.2)			1	

[#]Fisher's exact test; [§] Home treated are also included; ^{*} Significant at p <0.05; [@] sample were taken both first (119) and second (5) time seeking

Table 3 shows that public health facilities were likely to visit more than four times (OR=4.074; 95%CI: 1.457-11.394) among the self-decided mothers compared to recommended by others.

Table 4: Bivariate analysis of service factors with care seeking behaviour

Factor	Type of health facilities		Chi-square statistic	P- value	UOR	95% CI
	Public	Private [§]				
Knowledge about danger sign (n=119)						
Fair knowledge	89(86.41)	14(13.59)	3.218	0.073	2.89	(0.872-9.57)
Poor knowledge	11(68.75)	5(31.25)			1	
Distance of nearest health institution (n=119)						
≤30 Minutes	80(88.89)	10(11.11)	7.886	0.005 [*]	4.074	(1.457-11.39)
>30 Minutes	20(68.97)	9(31.03)			1	
Place of delivery (n=124)						
Home	28(75.68)	9(24.32)	3.193	0.074	1	
Health institution	77(88.51)	10(11.49)			2.445	(0.899-6.623)
At least 1 PNC visit (n=124)						
Yes	81(86.17)	13(13.83)	0.799	0.732	1.625	(0.556-4.75)
No	23(79.31)	6(20.69)			1	
Satisfaction (n=124)						
Less satisfied	18(90.0)	2(10.0)	0.149	0.657	1	(0.265-7.194)
More satisfied	87(92.55)	7(7.45)			1.381	

[#]Fisher's exact test; [§]Home treated are also included; ^{*} Significant at p<0.05; [@] sample were taken both first (119) and second (5) time seeking

and half times (OR: 3.6; 95%CI: 1.281-10.036) when walking distance was ≤30 minutes to health facilities from home compared to the private ones (table 4).

Public health facilities were likely to visit more than three



Table 5: Multivariate logistic regression analysis for factors associated to CSB

Factor	Type of Health Facilities		AOR (95%CI)	P Value
	Public	Private [§]		
Maternal education (n=119)				
Up to primary	50(73.53)	18(26.47)	1	*0.022
Above primary	50(98.04)	1(1.96)	25 (1.44-333.0)	
Place of delivery (n=124)				
Home delivery	28(75.68)	9(24.32)	1	0.865
Health institution	76(88.51)	10(11.49)	0.862(0.156-4.762)	
Disease type (n=124)				
Diarrhea/ Jaundice/ Others	45(91.84)	4(8.16)	8.17 (1.10-64.68)	*0.047
ARI/Fever	60(80.0)	15(20.0)	1	
Decision-making (n=124)				
Self-decided	86(89.58)	10(10.42)	11.29 (2.26-56.00)	*0.03
Recommended	19(67.86)	9(32.14)	1	
Walking distance to nearest HFs (n=119)				
≤30 Minutes	80(88.89)	10(11.11)	104.2(3.8-2821.4)	**0.007
>30 Minutes	20(68.97)	9(31.03)	1	
Knowledge about danger sign(n=119)				
Good	89(86.41)	14(13.59)	1.7 (0.27-11.4)	0.083
Poor	11(68.75)	5(31.25)	1	

*Significant at $p < 0.05$; ** Significant at $p < 0.01$; [§]Home treated are also included

Multivariate analysis showed that mothers having above primary education were 25 times more likely; more than eight times more likely of those born in health institution; more than 11 times more likely of those of self-decided mothers; and more than 104 times of those having ≤ 30 minutes of walking distance compared to their counterparts (table 5).

DISCUSSION

Mothers having even above primary education, delivered in health institution; having self-decision; and less walking distance between home and health facility were found as major determinants of choosing either private or public health facility for seeking out neonatal illnesses.

In this study all the mothers were Hindu (98%), which was higher than national average (84.2%).⁹ The percentage of Hilly Brahmin (14.2%) was also found to be higher than national figure (14.2%).⁹ Similarly, hilly Chhetri and Dalit including one Janajati also followed the same pattern (43.35% vs 19.2% and 27% vs 24.9%) respectively.⁹

Maternal literacy in this study was 92.1 percent which was higher than national (66.7%) and Western Mountain figure (41.9%). Similarly, mothers having secondary education or higher was more than national figure and western mountain region (42.3% vs 42.8% vs 20.6%).⁹

This study revealed that 84.3% mothers were involved in agriculture, which was higher than national figure (75.1%) and less than western mountain (88.7%), whereas mothers involved in professional/technical/managerial activities was found to be 3.2%, which is higher than western mountain sub-region (2.2% and less than the national figure (4.3%).⁹

This study showed that 62% of the neonates were reported to have suffered from any kind of illness. This finding is higher than the findings from India,¹⁰ Bangladesh,¹¹ Kaski district of Nepal,¹² and, Lucknow of India¹³⁻¹⁴ where the proportions remained between 28 to 51%. This may be due to the difference in altitude and other climate related factors.

Among the ill neonates, this study showed that the majority had fever (46.4%), followed by ARI (19%), diarrheal diseases (14.4%), Jaundice (5.2%) and others (15%). Similar type of study conducted in Bangladesh found that fever was most common (21%), followed by breathing difficulty (11%) which is inconsistent with the present study.¹¹ Similarly, study conducted in Kaski, Nepal revealed jaundice (55%); followed by ARI (26%); diarrhea (6%); systemic infection or fever (7%) and others (6%)¹². A similar study in India revealed ARI (29%), diarrhea (16%), and jaundice (4%).¹⁰ Similarly, in a study among rural Uganda children under 24 months, 37.9% had an episode of fever, 40.3% had diarrhea, and 37.4% had URTI in last 2 weeks before the survey.¹⁵ However, our study finding is inconsistent with a study conducted in Bangladesh where, 6% of the neonates had cold or fever.¹¹ This inconsistency might be the higher altitude of Jumla, where cold and low temperature related illnesses like ARI/pneumonia are more prevalent.

This study showed that 72% ill neonates were checked in public health facilities, followed by 8% each at home and private facilities whereas 19% did not seek anywhere. A similar type of study conducted in Kaski district of Nepal revealed 46% ill neonates were taken to private clinic; followed by 34% in public or community hospitals and 20% to private hospital or nursing home.¹² This inconsistency might have been observed due to the remoteness, poor availability and accessibility of current study area. Also



similar study in India (Lucknow) showed that community-based non-government dispensers (NGDs) were leading health providers (37.6%); followed by government practitioners (36%); and 19 percent non government consultants.¹⁰ Another study carried out among under-five children in Pakistan showed that 70 percent consulted private health providers followed by 29 percent with government health providers and one percent consulted for alternate care provider.¹⁶

This study revealed that illness beliefs and care seeking were observed from multiple providers and use of traditional healer or home remedies for care seeking is rampant in our setting. This is consistent with other studies such as, carried out in rural Ghana^{17,18} and India.¹³ Similarly, another study conducted in western Nepal found that 8.9% children were sought to the traditional healer or given home remedies which is consistent with this study.¹⁹ Another study, carried out in Gwalior, showed that 32.4% of neonates were sought to traditional healers, which is inconsistent with this study.²⁰

Although occupation and income were marginally ($p=0.05$) and significantly ($p=0.04$) associated respectively with maternal perception of seeking when to take children to hospital¹⁶, present study did not go with this. Birth order, in the study, did not show any association with care seeking practices, however, it was found associated with neonatal morbidity.¹¹ This may be due to insufficient sample based on specific explanatory variables, and so, suggested accordingly.

CONCLUSIONS

Majority of ill neonates (72%) were sought out in public

health facilities. Less than one-fifth (16%) were either taken to private facilities or treated traditionally at home. Surprisingly, nearly one-fifth (19%) were sought out no where for treatment. Maternal education above primary level, mothers having self-decision, and the health facilities within 30 minutes' distance were the determinants of visiting public health facilities. To add top of this, a larger sample size based on each explanatory variable is warranted before reaching the firm conclusions.

LIMITATION OF THE STUDY

The study was carried out in Jumla district, and so, generalizable with limitation. Moreover, probably due to smaller sample size, larger confidence intervals have been observed in most explanatory variables.

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CONFLICT OF INTEREST

Authors declare that they have no conflict of interests.

FINANCIAL DISCLOSURE

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REFERENCES

- Toates FM. The control ingestive behaviour by internal and external stimuli-A theoretical review. *Appetite*. 1981;1;2(1):30-50. DOI: [https://doi.org/10.1016/so195-6662\(81\)80035-9](https://doi.org/10.1016/so195-6662(81)80035-9).
- Ahmed SM, Adams AM, Chowdhury M, Bhuiya A. Gender, socioeconomic development and health-seeking behaviour in Bangladesh. *Social science & medicine*. 2000;51(3):361-71. DOI: [https://doi.org/10.1016/S0277-9536\(99\)00461-X](https://doi.org/10.1016/S0277-9536(99)00461-X)
- Bahrami MA, Atashbahar O, Shokohifar M, Montazeralfaraj R. Developing a valid tool of treatment seeking behavior survey for Iran. *J Novel Appl Sci*. 2014;3(6):651-60. [LINK]
- Ezeaka CV, Ugwu RO, Mukhtar-Yola M, Ekure EN, Olusanya BO. Pattern and predictors of maternal care-seeking practices for severe neonatal jaundice in Nigeria: a multi-centre survey. *BMC Health Serv Res*. 2014;14:192. DOI: <https://doi.org/10.1186/1472-6963-14-192>
- Chowdhury HR, Thompson SC, Ali M, Alam N, Yunus M, Streatfield PK. Care seeking for fatal illness episodes in Neonates: a population-based study in rural Bangladesh. *BMC pediatrics*. 2011;11(1):88. DOI: <https://doi.org/10.1186/1471-2431-11-88>
- MacKian S. A review of health-seeking behaviour: Problems and prospects. *Health Systems Development Programme*. 2003. [LINK]
- Ward H, Mertens TE, Thomas C. Health seeking behaviour and the control of sexually transmitted disease. *Health Policy and planning*. 1997;12(1):19-28. DOI: <https://doi.org/10.1093/heapol/12.1.19>
- UNICEF, WHO, World Bank. Levels & Trends in Child Mortality: Report 2013. 2013. [LINK]
- MOHP, New ERA, Macro International Inc. Nepal Demographic Health Survey 2011. Ministry of Health and Population: Kathmandu, Nepal: 2012 Mar, 2012. [LINK]
- Srivastava NM, Awasthi S, Agarwal GG. Care-seeking behavior and out-of-pocket expenditure for sick newborns among urban poor in Lucknow, northern India: a prospective follow-up study. *BMC health services research*. 2009;9(1):61. DOI: <https://doi.org/10.1186/1472-6963-9-61>
- Ahmed S, Sobhan F, Islam A, Barkat-e- Khuda. Neonatal morbidity and care-seeking behaviour in rural Bangladesh. *J Trop Pediatr*. 2001;47(2):98-105. DOI: <https://doi.org/10.1093/tropej/47.2.98>
- Adhikari C, Sharma BP, Subedi S. Out-of-Pocket and Catastrophic Expenditure of Neonatal Health Care in Kaski District, Nepal. *Economic Journal of Development Issues*. 2016:1-21. DOI: <https://doi.org/10.3126/ejdi.v21i1.19020>
- Awasthi S, Srivastava NM, Pant S. Symptom-specific care-seeking behavior for sick neonates among urban poor in Lucknow, Northern India. *Journal of Perinatology*. 2008;28:S69-S75. DOI: <https://doi.org/10.1038/jp.2008.169>



14. Srivastava NM, Awasthi S, Mishra R. Neonatal morbidity and care-seeking behavior in urban Lucknow. *Indian Pediatr.* 2008;45(3):229-32. [LINK]
15. Mbonye AK. Prevalence of childhood illnesses and care-seeking practices in rural Uganda. *The Scientific World Journal.* 2003;3:721-30. DOI: <http://dx.doi.org/10.1100/tsw.2003.52>
16. Rehman A, Shaikh BT, Ronis KA. Health care seeking patterns and out of pocket payments for children under five years of age living in KatchiAbadis (slums), in Islamabad, Pakistan. *International journal for equity in health.* 2014;13(1):30. DOI: <https://doi.org/10.1186/1475-9276-13-30>
17. Hill Z, Kendall C, Kirkwood B, A. E. Recognizing childhood illnesses and their traditional explanations: exploring options for care-seeking intervention in the context of the IMCI strategy in rural Ghana. *Trop Med Int Health* 8(7):668-76. DOI: <https://doi.org/10.1046/j.1365-3156.2003.01058.x>
18. Bazzano AN, Kirkwood BR, Agyemang CT, Agyai SO, Adongo PB. Beyond symptom recognition: care-seeking for ill newborns in rural Ghana *Trop Med Int Health.* 2008;13:123-8. DOI: <https://doi.org/10.1111/j.1365-3156.2007.01981.x>
19. Sreeramareddy CT, Shankar RP, Sreekumaran BV, Subba SH, Joshi HS, Ramachandran U. Care seeking behaviour for childhood illness- a questionnaire survey in western Nepal. *BMC International Health and Human Rights.* 2006;6(7). DOI: <https://doi.org/10.1186/1472-698X-6-7>
20. Sharma N, Sahu D. Care takers Health Seeking Behaviour for Acute Respiratory Infection in children. *Indian Journal of Basic and Applied Medical Research.* 2014;3(2):426-31. [LINK]

