Study of Death among Children Below Five Yearsof Age and Its Correlation with Health Care Utilization and Place of Residence. Using Verbal Autopsy as a Tool in Deharadun

Sushil Dalal[1], Kiran Pande[2], Neetu Pippet[3], Vishal Modgil[4]

[1] Professor dept of Community Medicine MMU Amballa, [2]Assistant Professor dept of OBG MMU Mullana Ambala, [3]Additional SMO State Headquarter Ayushman Bharat Panchkula, Haryana, [4]Additional SMO state headquarter Ayushman Bharat Panchkula, Haryana

Abstract

Children, one of the most vulnerable part of the population, face unusually high health risks as they grow. Children are the promise and future of every nation and the core of development. But it has been observed that even after so many efforts by governments of developing countries we are far behind to achieve hundred percent health care utilization by under-five population. Keeping this in view, this study was conducted to find out any correlation in-between child mortality of under-five years of age with health care utilization and place of residence. using verbal autopsy as a tool in Dehradun.

Methodology: The survey was done on all the houses of the deceased children residing in our field practice areas by visiting their houses.

Results: Among the 83 deaths reported, 38 received no treatment, 10 were treated by quakes, 19 and 16 under five – children were treated in government and private hospital respectively.

Conclusion: Our study shows that by utilization of health care facilities we can remarkably reduce under five mortality.

Keywords: *MDG-4, deceased children, mortality rate, health care, under-utilized*

Background

India is one among the 60 LMICs where reduction of child mortality rate has not progressed steadily towards achieving MDG-4. In India, infant mortality rate (IMR) and under-five mortality rate (U5MR) were 50 and 64 respectively per 1000 births during the year 2009 according to sample registration system (SRS) in India[1]. One of the reasons for slow decline in child mortality in India could be unequal distribution of healthcare resources and difficulties in access to health care[2].One of the reasons for slow progress in achieving MDG-4 in many LMICs is the socioeconomic inequities existing in these countries. These inequities may also affect access to and utilization of available health care services[3] and time taken in seeking of medical care as well as selection of appropriate health care provider for acute childhood illnesses[4,5]. Studies from various countries suggest that health care seeking is inappropriate and health services are often under-utilized during childhood illnesses [6,7,8]. Studies have reported that high cost of treatment is a major deterrent to seek care[9,10]. Mothers' perceptions about symptoms and their severity[11,12,13] mother's beliefs about childhood illnesses[14] and mothers' ability to recognize the danger signs[15] are some important factors determining health care-seeking behavior or utilization of health care services. Studies on utilization

Corresponding author:
Dr Kiran Pande
Assistant Professor Dept of OBG MMU mullana Ambala. E-mail: drsushildalal123@gmail.com

of health services during childhood illness have reported that a significant proportion of children are not taken for medical care[16].

Material and Method

The study was undertaken for one year in the field practice areas of department of community medicine HIHT Dehradun after taking approval of institutional ethical committee. The total population registered under Rural Heath Training Centre (Rajeev Nagar) & Urban Health Training Centre was 12,588 and12,930 respectively out of which under five children were 1297 at RHTC and 1325 at UHTC.

All deaths except still births registered with Rural and Urban Health Training Centre were included in the study. When a child died, the mother or the respondent was questioned in detail about the health care utilization and place of residence of children prior to death. A drafted questionnaire (English version) developed by WHO, was modified suitably, as well as certain variables were added to find out any relation in-between under five children death and health care facility utilization with place of residence[17]. The information so collected, was first coded and then entered in the computer. The analysis was done by using SPSS software. Appropriate statistical methods (proportion and chi – square test) were applied as per requirement.

Result

Table 1 distribution of deceased children by age, sex and place of residence (n=83)

Age of deceased children	**Rural (%)**	**Urban (%)**	**Totaldeaths (%)**	**Chisquar value**	**Degree of freedom**	**P value**
0-28 days	17 (43.6)	15(34.1)	32(38.6)	3.219	2	>0.05
29-<365 days	12(30.8)	10(22.7)	22(26.5)			
365 days-< 5Yrs	10(25.6)	19(43.2)	29(34.9)			
Sex of deceased children						
Male	18(46.2)	26(59.1)	44(53.0)	1.389	1	>0.05
Female	21(53.8)	18(40.9)	39(47.0)			

Table 2: Distribution of children by heath care utilization and place of residence (n=83).

Health care utilization	Place of Residence					
	Rural		Urban		Total	
	No.	%	No.	%	No.	%
No treatment	19	50.0	19	50.0	38	100.0
	48.7		43.2		45.8	
Quack	5	50.0	5	50.0	10	100.0
	12.8		11.4		12.0	
Govt. hospital	9	47.4	10	52.6	19	100.0
	23.1		22.7		22.9	
Private practitioner / Private hospital	6	37.5	10	62.5	16	100.0
	15.4		22.7		19.3	
Total	39	47.0	44	53.0	83	100.0
	100.0		100.0		100.0	

(X^2 =0.754; df=3 ; p>0.05)

Present study shows that in rural area out of 39 deaths, 19(48.7 %) children were not treated for their illness whereas 5 (12.8 %) were shown to a quack,3(7.7%) children were seen by a private practitioner,9(23.1 %) children were taken to government hospital while only 6 (15.4 %) children were taken to private hospital. Thus in the rural area, majority of children (48.7 %) received no treatment whereas only 15 (38.5%) children were taken to government hospital. In urban areas, 19 (43.2 %) children were not treated for their illness whereas 5 (11.4 %) were taken to a quack, 10 (22.7 %) were taken to government hospital and 12 (22.7 %) were taken to private hospital. Reasons for not seeking treatment were, either the illness was not considered serious in most of the cases, or there was financial constraints and lack of time or long waiting period. There is need for better health care delivery system and that too within reach of general population.

A Study done by Garg et al (1993) [18] on neonatal mortality in Meerut district found that 42.8 % of neonates who died did not receive treatment for an illness before their death. 11.9 % of neonates who died but received some treatment, were treated in hospital. A study done by Kumar et al (1982) [19] found that doctors (RMP) and qualified Doctor of Modern Medicine were consulted in 30.7 % babies. In 48.8 % both health workers and doctors were consulted for the treatment of terminal illness. No health worker was consulted in 19.7 % cases. Only in less than half of the cases a consultation was obtained from a health facility available close to home like sub center or a primary health center. Only 8.8 % of infants were taken to Tehsil, District or teaching hospital, so need to strengthen health care at home is greater during the neonatal period because 73.8 % of newborns were never shown in a health Centre or hospital. Study done by Awasthi and Panda (1996) [20] found that urban slums preferred those health care providers who so ever is the closest one available. Most often the parents take

the child to a non-governmental dispenser who may not be qualified Practitioner. Whereas Bhandari N et al (2002) [21] reported in his study that the first week deaths commonly (61 %) occurred within 24 hours of recognition of illness which might have been to a short time for effective interventions by care providers. Only six of 45 neonates were advised by primary health care providers for hospitalization. Similarly, 25 (41%) of 61 older infants who had severe malnutrition, sepsis, meningitis, diarrhoea or pneumonia or other illness were referred to hospital.

Conclusion

Our study as well as studies from different parts of globe especially developing countries came to this conclusion that maximum utilization of health care facilities can remarkably help in reducing under five children mortality and moreover, we should make our health facilities more efficient and patient friendly.

Conflict of Interest – none

Source of Funding- self

Ethical Clearance – taken from ethical committee

References

1. Office of Registrar General ISRSS Maternal & Child Mortality and Total Fertility Rates, 2011.
2. Deogaonkar M Socio-economic inequality and its effect on health care delivery in India: Inequality and health care. Electronic Journal of Sociology 2004.
3. Ghosh R. Child mortality in India: a complex situation. World Journal of Pediatrics 2012; 8: 11–18.
4. Herman E, Black RE, Wahba S, Khallaf N Developing strategies to encourage appropriate care-seeking for children with acute respiratory infections: an example from Egypt. Int J Health Plann Manage 1994; 9: 235–243.
5. Thind A. Analysis of health services use for respiratory illness in Indonesian children: implications for policy. J Biosoc Sci 2005; 37: 129–142.
6. Srivastava N, Awasthi S, Agarwal G 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: 61.
7. Thind A Health service use by children in rural Bihar. J Trop Pediatr 2004; 50: 137–142.
8. Fosu GB Childhood morbidity and health services utilization: crossnational comparisons of user-related factors from DHS data. Soc Sci Med 1994; 38: 1209–1220.
9. Andersen RM Revisiting the behavioral model and access to medical care: does it matter? J Health Soc Behav 1995; 36: 1–10.
10. Selvaraj SKA. Deepening Health Insecurity in India: evidence from National Sample Surveys since 1980s. Econ Polit Wkly 2012; 55–60.
11. Sreeramareddy CT, Shankar RP, Sreekumaran BV, Subba SH, Joshi HS, et al. Care seeking behaviour for childhood illness–a questionnaire survey in western Nepal. BMC Int Health Hum Rights 2006; 6: 7.
12. International Institute for Population Sciences MI National family health survey (NFHS-3), 2005–06.
13. Tinuade O, Iyabo RA, Durotoye O. Health-care-seeking behaviour for childhood illnesses in a resource-poor setting. J Paediatr Child Health 2010; 46: 238– 242.
14. Uzochukwu BS, Onwujekwe EO, Onoka CA, Ughasoro MD Ruralurban differences in maternal responses to childhood fever in South East Nigeria. 2008 (3).
15. Zaidi SS, Seidlein LV, Nizami SQ, Acosta C, Bhutta ZA. Health care utilization for diarrhoea and fever in 4 urban slums in Karachi. J Coll Physicians Surg Pak 2006,16: 245–248.
16. Nuruddin R, Hadden WC, Petersen MR, Lim MK. Does child gender determine household decision for health care in rural Thatta, Pakistan? J Public Health 2009; 31: 389–397.
17. Development of verbal autopsy standards. Available from URL:http://www.who.int/whosis/mort/verbal autopsy standards 1.pdf.
18. Garg SK, Mishra VN, Singh JV. Neonatal mortality in Meerut district. Indian J Med Sci 1993; 47(9):22-5.
19. Kumar V, Datta N, Saini SS. Infant mortality in a rural community development block in Haryana.

Indian Journal of Pediatrics 1982:49(401):795 – 802.

20. Awasthy S, Pande VK, Glick H.Under-fives mortality in the urban slums of Lucknow. Indian J Pediatr 1996;63:363-8.

21. Bhandari N, Bahl R, Taneja S, Martines J , Bhan MK. Pathways to infant mortality in urban slums of Delhi, India: implications for improving the quality of community and hospital based programmes. Health Popul Nutr 2002; 20:148-55.