

Factors Affecting Retention of Child Health Card in a Rural Area

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ABSTRACT

Background: The child health card is a tool used by Health Management Information System in Nepal. It contains records on immunization, vitamin A and a weight-for-age growth chart. The objective of this study was to identify the magnitude of and the factors affecting retention of child health card.

Methods: A cross sectional descriptive design using quantitative methodology was applied. Divyapuri VDC was selected purposively and simple random sampling was applied to obtain a sample of 282 households with children between one to 36 months. Information was collected by interview with mothers of one to 36 months children and by observation of child health cards. Descriptive analysis was performed to assess the magnitude of retention of child health card. Then, bivariate analysis was performed; odds ratio and corresponding 95% confidence interval were used to test the significance of association. Logistic regression model was used for control of confounding.

Results: Only 41% of the mothers produced child health card at the time of survey. For about 7% respondents, child health card was not issued and only 45% of the respondents who were issued child health card have retained it. Younger age group of the child, mothers living nearer to health facility, mothers with knowledge on use of child health card for recording immunization and recording growth monitoring; and mothers who were explained child health card by health worker were found significantly higher odds of retaining it.

Conclusions: The retention of child health card was low in the study area. Health workers should be trained to educate mothers on retention and use of child health cards.

Keywords: child health card, factors, retention.

INTRODUCTION

The Child Health Card (CHC) is a tool used in Health Management Information System (HMIS) to maintain records and evaluate child health status for under five year children in Nepal. The card includes records on immunization, vitamin A and a growth chart for growth monitoring.¹ Every child attending a public health institution or primary health care outreach clinic should be issued the CHCs, the first time that he or she is seen or after delivery of the baby in case of institutional delivery. The mother should keep the card at home and bring it to the health facility on every visit about the child.²

The concept of a special health and weight chart was first promoted by David Morley in 1962.³ Distribution and plotting of child health cards is the major strategy of Ministry of Health and Population (MoHP) to address Protein Energy Malnutrition (PEM) in Nepal.⁴ A study in Nepal showed low retention and use of CHC which makes difficult for both the mother and health worker to monitor the growth of children.⁵ Therefore, this study assessed the magnitude of retention of CHC and explored the factors affecting the retention of CHC.

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METHODS

This cross sectional descriptive study using quantitative methodology was conducted in Divyapuri VDC of Nawalparasi district of Nepal from August to September 2010. The ethical approval was taken from Department of Community Medicine and Family Health, Institute of Medicine, Kathmandu. Verbal informed consent was taken from the each participant. The study population was children between one to 36 months and their mothers. Children under one month old were excluded as considering the time to issue the card.

Sampling unit was household with child of one to 36 months. The name list of mothers of children between one to 36 months were obtained from the Vitamin A register of Female Community Health Volunteers (FCHVs) and the name list of children were also obtained from the immunization register and nutrition register in the local health institution. The lists were discussed with the FCHVs of respective wards to obtain the sampling frame, a full list of households with children between one to 36 months. From the sampling frame of 607 households, 282 were randomly selected using a simple random sampling technique.

Technique of data collection was interview with mothers of children between one to 36 months and observation of CHCs. The tools used was questionnaire which included some structured questions, some open ended questions for exploration and a space to record the observation of produced CHCs. The tools were pretested and necessary modifications were made before being used for data collection. Where households did not wish to participate in the study or the mother of the child could not be traced on one repeated visit, household in the sampling frame near to the sample household was selected and studied. Only one child from a household was included in the study. In the case of the households having more than one eligible child, the youngest one was selected.

Data analysis was done as per the objectives of the study. Data checking, compiling and editing were done manually on the same day of data collection. The data derived from interviews using the questionnaire was entered and analyzed in SPSS version 17.0. All the data were rechecked and cleaned after entry, to ensure quality. The descriptive analysis was performed to assess the magnitude of retention of CHC and to explore the factors affecting retention of CHC; chi-square test was used for the test of association and unadjusted Odds ratio was calculated to estimate the effect size. The variables which were significant at 95% confidence interval ($p < 0.05$) in bivariate analysis were put into

binary logistic regression model using backward LR method for multivariate analysis.

The final model was tested using the Hosmer and Lemeshow goodness of fit. Ethical clearance for research was taken from the ethical committee at Department of Community Medicine and Family Health, Institute of Medicine. Permissions from VDC and local health institution were taken and objectives of the study were clearly explained to each of the respondents and data were collected only after their consent.

RESULTS

A total of 282 respondent mothers from 282 households were interviewed. The mean age of the respondent mothers was 24.7(± 4.8) years. The mean age of the study children was 19.3(± 9.8) months (Table 1).

Among the respondents 118(42%) produced and 143(50.7%) could not produce the CHC at the time of survey while 21(7.4%) of respondents answered that the CHC was not issued for their children. The respondents for whose children the card was not issued were excluded in analysis of retention of CHCs. Among the 261 respondents who were issued CHCs, only 118(45.2%) had retained it at the time of survey.

Table 1. Socio-demographic characteristics of the respondents.

Characteristics	Number N = 282 (%)
Mother's age group	
<30 years	238 (84.4)
30 years or more	44 (15.6)
Mean age of mother = 24.66 \pm 4.8 years	
Ethnicity of mother	
Brahmin/Chhetri	112 (39.7)
Advantaged Janajaties	13 (4.6)
Disadvantaged Janajaties	128 (45.4)
Dalits	29 (10.3)
Education of mother	
No schooling	53 (18.8)
Primary	69 (24.5)
Secondary	84 (29.8)
SLC or more	76 (27.0)
Mean number of children = 1.9 \pm 1.0	
Sex of the child	
Male	137 (48.6)
Female	145 (51.4)
Age of the child	
1-12 months	89 (31.6)
13-24 months	105 (37.2)
25-36 months	88 (31.2)
Mean age of the child = 19.3 \pm 9.8 months	

Table 2. Factors affecting retention of child health card.

Characteristics	CHC retained	CHC not retained	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Type of family				
Nuclear	34	62	0.5 (0.3-0.9)	
Joint and extended	84	81	-	
Mother's age (Continuous Variable)			0.9 (0.9-0.9)	
Education of mother				
SLC or more				
Secondary	43	33	2.5 (1.1-5.5)	
Primary	37	46	1.6 (0.7-3.4)	
No schooling	24	37	1.3 (0.6-2.9)	
	14	27	-	
Age of the child				
25-36 months	19	63	0.3 (0.1-0.5)	0.1 (0.0-0.2)
13-24 months	39	58	0.1 (0.1-0.2)	0.3 (0.1-0.5)
1-12 months	60	22	-	-
Birth order of child				
Third or more	19	38	0.4 (0.2-0.8)	
Second	35	51	0.6 (0.3-1.0)	
First	64	54	-	
Distance to health facility				
More than one hour	17	16	1.0 (0.5-2.2)	0.5 (0.2-1.3)
30 min to one hour	33	59	0.5 (0.3-0.9)	0.5 (0.2-0.9)
Less than 30 minute	68	68	-	-
Knowledge on use of CHC- For recording immunization				
Yes	115	128	4.5 (1.2-15.9)	7.8 (1.4-43.7)
No	3	15		-
Knowledge on use of CHC- For recording growth monitoring				
Yes	24	11	3.0 (1.4-6.5)	7.3 (2.5-21.3)
No	94	132		-
Health worker ever explained card to respondents				
Yes	29	12	3.5 (1.7-7.3)	3.2 (1.3-7.4)
No	89	131		-

The adjusted analysis using logistic regression model showed that age group of children 13-24 months (OR=0.3, 95% CI=0.1-0.5) and 25-36 months (OR= 0.1, 95% CI=0.0-0.2) have significantly lower odds of having retention of CHC as compared to age group one to 12 months. This study also showed 30 minutes to one hour walking distance to health facility (OR=0.5, 95% CI=0.2-0.9) had significantly lower odds of having retention of CHC as compared to less than 30 minute distance to health facility.

Knowledge of respondent on use of CHC as recording immunization (OR=7.8, 95% CI=1.4-43.7) and recording growth monitoring (OR=7.3, 95% CI=2.5-21.3) were significantly associated with retention of CHC. Similarly, respondents who were ever explained on CHC by health worker (OR=3.2, 95% CI=1.3-7.4) have three times higher odds of CHC retained as compared to those who were not explained.

DISCUSSION

About 40% of the respondents produced CHC at the time of survey in the study area which was lower than the reports of a study done by CARE Nepal in 2007 in another Terai district of Nepal i.e. 51.2% in Kanchanpur but higher than three mountainous districts (16.3% in Doti, Bajhang and Dadeldhura) reported by the same study.⁵ Reports from other developing countries showed 49% retained family health card in Bangladesh, 66% retained CHC in Uganda and 74.3% retained CHC in Tanzania at the time of survey.⁶⁻⁸ This study also showed that more than seven percentages of the children were not issued CHC at the time of survey. It shows that the health system has not reached to all the targeted children and these children are at high risk of illness and malnutrition.

The final model after multivariate analysis showed that younger age of the child, walking distance to health facility within 30 minutes, good knowledge of mother

on use of CHC for recording immunization and recording growth monitoring and education on CHC by health workers to mothers have significantly higher odds of retention of CHC.

The positive association of younger age of the child with retention of CHC might be because many mothers do not keep records carefully once the children complete the vaccination schedule at the age of about one year or might be due to their poor knowledge regarding the use of CHC for growth monitoring after 12 months of age.

Another significant association between distance to health facility and retention of CHC should be carefully interpreted. Being nearer to health facility increases the likeliness of health service utilization and also growth monitoring service utilization. This could have provided opportunity for health worker to educate mothers on retention and use CHC.

Different to the result shown by similar study in Uganda, place of delivery was not statistically significant with retention of CHC in this study.⁷ Similarly, utilization ANC and PNC services are not seen as determinants of retention of CHC. This may be because these opportunities have not been utilized properly in the health facility to educate mothers on importance and advantages of CHC.

The sex of the household head was not statistically significant with retention of CHC similar to the result of a study in Kampala, Uganda.⁷ The study also showed mother's education and occupation not statistically significant factor to retention of CHC similar to result of study in Uganda.⁷ But a study in Tanzania reported mother's education and mother's occupation as the determinants of the card possession.⁸

Sex of the child was not significant with retention of CHC showing no gender difference in retention. The result of this study is similar to the result of study in Uganda regarding Child's birth order which showed not statistically significant to determine retention of CHC.⁷

Knowledge of mother on use of CHC for both recording immunization and recording growth monitoring were statistically significant with retention of CHC but this study being a cross sectional study, the temporality of association, whether the knowledge had increased the retention of CHC or retention of CHC had increased the knowledge of mother is very difficult to ensure. Here the both are plausible but the education on CHC by health worker to mother was also statistically significant with retention of CHC. These two interrelated associations show that knowledge on CHC actually preceded the retention of CHC. It shows the need and importance of awareness and education program to increase the retention of CHC.

In the study area, among the 261 respondents 84.3% respondents claimed that they did not receive any information on CHC by health worker. Even in United Kingdom, Some parents (22%) indicated that they had not been given a satisfactory explanation as to how to use the personal child health records at the time it was issued to them.⁹ The poor education on CHC by health worker to mother indicates the need to encourage health worker to educate mothers on use of CHC and importance. The role of education and training on retention and use of CHC was found effective in improving maternal knowledge and use of CHC in studies in other developing countries.^{10,11} This also indicates the need of training and orientation to health worker to use CHC for education purpose.

The study was confined in only one village development committee. Therefore, the results should be interpreted cautiously while generalizing in a wider context. However, the results provided very useful clues to conduct more specific studies.

CONCLUSIONS

This study showed that the retention of CHC was very low in the study area. Younger age of the child, nearer distance to health facility, knowledge of mother on use of CHC for recording immunization, knowledge of mother on use of CHC for recording growth monitoring, education on CHC to mothers by health worker were the factors positively associated with retention of CHC. The education program on retention and use of CHC to mothers by health workers in the study area should be conducted to increase the retention of CHCs. It also showed that health workers should be provided training on use of CHC for education purpose.

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