

ORIGINAL RESEARCH ARTICLE

AWARENESS REGARDING DEVELOPMENTAL MILESTONES OF UNDER 3 YEARS CHILDREN AMONG MOTHERS AT A TEACHING HOSPITAL, CHITWAN

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ABSTRACT

Background: The growth of a child is the most important requirements for mental and physical development as well as social integrity. Knowledge of developmental milestones is essential for assessing normal development and to identify any delay in development. Mothers, who are usually taking care of the child, must have adequate knowledge regarding growth and development of child. The objective of this study was to assess the awareness regarding developmental milestones of under 3 years children among mothers at a teaching hospital, Chitwan.

Methods: A descriptive, cross-sectional research was conducted among 104 mothers attending different pediatric departments of Chitwan Medical College & Teaching Hospital. Non-probability, convenience sampling technique was used to select the sample. Structured interview schedule was used for data collection and data were analyzed by using descriptive and inferential statistics.

Results: The study revealed that more than half (52.95%) of respondents belonged to 20-29 years, 74% were Hindu, 58.7% belonged to urban area. Only 25% of the respondents had adequate level of awareness. Most of the mothers had awareness regarding social development & play (66.67%) followed by motor development (57.14%), physical development (50%), cognitive development (50%), & language development (50%).

Conclusions: Majority of mothers have inadequate level of awareness regarding developmental milestones.



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INTRODUCTION

Developmental milestones are the functional skills that children are capable of doing at certain ages in relation to physical, cognitive, social, and emotional and language domains. Normal child development varies across cultures and environments.¹ Developmental delay occurs when a child exhibits a significant delay in the acquisition of milestones or skills, in one or more domains of development.²

About 5% of the world's children 14 years and below age have some form of disability or developmental delay.³ The number of children with disabilities globally is estimated at almost 240 million.¹

Maternal knowledge and caregiving practice have been found to be related to child development. Several caregiving factors influencing child development have been found including cognitive stimulation, caregiver sensitivity and responsiveness to the child, and caregiver effect.⁴

Developmental milestones knowledge among mothers is

having its own importance in nurturing child, helps in early identification of developmental delay and could be in turn early addressed upon.⁵ Delay in recognition of symptoms and help seeking due to lack of awareness and access to proper medical care and prevalent false beliefs were the leading reason for late diagnosis in Nepal.⁶

Survey conducted in Nepal showed that only 65.2% children age between 36-59 months are developmentally on track in at least three of the following four domains: literacy-numeracy, physical, social-emotional & learning.⁷ In Nepal, with very limited access to child development service or screening programme, identification of developmental delay is mainly dependent upon the family. In such context, mother's knowledge on child development is crucial for early identification and interventions.

METHODS

A cross-sectional design was used to assess the awareness regarding developmental milestones of under 3 years children among mothers of infants attending different pediatric

departments (pediatric outpatient department, pediatric ward and immunizations clinic) of Chitwan Medical College, Teaching Hospital. The population included all the mothers of infants attending these departments. Sample size was calculated using Cochran, 1997. Non-probability, convenience sampling technique was used to collect data from 104 mothers of infants who met the criteria of having under 1-year child and were willing to participate in the study.

Data were collected using structured interview schedule. The instrument consisted of two sections: Socio-demographic information which consisted 21 questions, and awareness regarding developmental milestones which consisted 38 questions; further divided into 5 categories: physical growth (4), motor development: gross and fine motor development (14), cognitive development (8), language development (6), social development (6). Every right response was given a score of “1” and every wrong response was given a score of “0”. The level of awareness was interpreted as: good (score of $\geq 65\%$), average (score of 36-64%), and below average (score of $\leq 35\%$). The content validity of the research instrument was established by literature review, consulting with subject experts and research advisor. Research instrument was pretested on 10% of total sample size and those mothers were excluded during data collection.

Ethical approval was obtained from Chitwan Medical College Institutional Review Committee (CMC-IRC). Formal written permission was taken from Chitwan Medical College and Teaching hospital. Informed consent was taken from each respondent prior to data collection and the purpose of the study was clearly explained. Privacy of the respondents was maintained during data collection by keeping in separate corner and respondent's confidentiality was maintained by keeping information secured. Data was collected by the researcher herself from 2021/12/12 to 2021/12/30. About 25-30 minutes was taken to collect data from each respondent.

Obtained data were analyzed using descriptive statistics (frequency, percentage, mean and standard deviation) for socio-demographic information. Inferential statistics (chi square) was used for measuring the association between respondents' awareness regarding developmental milestones and selected variables.

RESULTS

Table 1 shows the frequency and percentage distribution of socio-demographic information of 104 respondents. Regarding the age of mother, 52.9% belonged to 20-29 years, cent-percent respondents were living with husband, 74% followed hinduism, 63% belonged to Brahmin/Chhetri, 58.7% were from urban area, all of the respondents were literate, 52.9% had studied up-to basic level and 26% respondents were employed. Majority (71.1%) of respondent's spouse had studied up-to secondary level & above, 26.1% were employed, 84.6% respondents had monthly income sufficient for a month, 61.5% were residing in nuclear family, 53.8% had single child,

youngest child was male in 51% and 53.8% of these children were aged between 6 months to 1 year.

Table 1: Table 1: Socio-demographic characteristics

n=104

Variables	Frequency (%)
Age (in completed years)	
20-29 years	55 (52.9)
30-39 years	49 (47.1)
Mean age \pm S. D= 26.56 \pm 3.017 Max=34, Min=21	
Religion	
Hinduism	77 (74)
Others	27 (26)
Ethnicity	
Brahmin /Chhetri	66 (63)
Others	38 (37)
Place of residence	
Urban	61 (58.7)
Rural	43 (41.3)
Educational level	
Up to basic level	55 (52.9)
Secondary & above	49 (47.1)
Husband's educational level	
Up to basic level	30 (28.9)
Secondary & above	74 (71.1)
Occupation	
Employed	27 (26)
Self employed	77 (74)
Husband's occupation	
Employed	28 (26.1)
Self employed	76 (73.9)
Monthly family income	
Adequate for month	88 (84.6)
Inadequate for month	16 (15.4)
Types of family	
Nuclear	64 (61.5)
Joint	40 (38.5)
Number of children	
1	56 (53.8)
2 or more	48 (46.2)
Sex of youngest child	
Male	53 (51)
Female	51(49)
Age of youngest child	
Birth to 6 months	48 (46.2)
6 months to 1 year	56 (53.8)

Table 2 shows the obstetric characteristics of the respondents. Cent percent respondent had hospital delivery, 76.9% had spontaneous vaginal delivery, 8.7% respondents had pregnancy related illness, 96.2% of infants were born at term, 3.8 % respondents had complications during delivery, 9.6% babies had newborn issues after birth and 94.2% babies' birth weight was 2.5 kg. or more.

Regarding the source of information on developmental milestones 100% of the mothers had received information on

developmental milestones of children. Among them 74.7% of mothers received information from family members/ friends, 64.2% received information from health personnel and 5.3% from social media.

Table 2: Respondents' obstetric history and source of information n=104

Variables	Frequency (%)
Mode of delivery	
Spontaneous vaginal delivery	80 (76.9)
Caesarean section	24 (23.1)
Illness during pregnancy	
Yes	9 (8.7)
No	95 (91.3)
Gestational age at birth	
Term	100 (96.2)
Preterm	4 (3.8)

Complications during delivery	
Yes	4 (3.8)
No	100 (96.2)
Problem for new born after birth	
Yes	10 (9.6)
No	94 (90.4)
Child weight at birth	
Less than 2.5 kg.	6 (5.8)
2.5 kg. or more	98 (94.2)
Sources of Information*	
Family member/friends	71 (74.7)
Health personnel	61 (64.2)
Mass media	39 (41.1)
Social media	5 (5.3)

*Multiple responses

Table 3: Respondents' awareness on different domains of developmental milestones

n=104

Domains	No. of items	Max. possible scores	Obt. Scores (min-max)	Median Scores	Median %	IQR(Q3-Q1)
Physical development	4	4	1-3	2	50	1.7
Motor development	14	14	3-10	8	57.1	3.7
Cognitive development	8	8	1-7	4	50	4
Language development	6	6	1-6	3	50	4.7
Social development & play	6	6	1-5	4	66.6	2
Total	38	38	7-31	21	52.6	16.2

Table 3 presents that most of the mothers had awareness regarding social development & play (66.6%) followed by motor development (57.1%) and 50% had awareness in physical development, cognitive development & language development.

Table 4 represents respondents' level of awareness regarding developmental milestones which showed that only 25% had good level of awareness, majority 66.3% of them had average level of awareness & 8.7% had below average level of awareness. It was categorized as; adequate level of awareness (good) and inadequate level of awareness (average and below average) for further analysis. So, 25% of respondents had adequate level of awareness and 75% had inadequate level of awareness.

Table 5 shows that there was no statistically significant association between level of awareness and selected variables.

Table 4: Respondents' level of awareness on developmental milestones

Level of awareness	Frequency %
Good ($\geq 65\%$)	26 (25)
Average (36-64%)	69 (66.3)
Below average ($\leq 35\%$)	9 (8.7)
Total	104 (100)

DISCUSSION

Respondent's awareness regarding different domains of developmental milestones revealed that most of the mothers had awareness regarding social development and play (66.6%) followed by motor development (57.14%) and 50% were aware about cognitive, language and physical development. Similar findings were reported in other study⁸ which revealed that 55.7% had knowledge in language development, 53.2 in physical development, 48.6% in gross motor development and least 21% in social development. Contrary findings were reported in the other study⁹ that revealed mother had good knowledge in motor domain (89.4%) followed by language (85.5%), cognitive (83.6%) and social domain (78%). Another study¹⁰ revealed that 44% had awareness in physical development, social development 20%, emotional 10% and cognitive 17% which is also in contrast to this study. The difference might be attributed to the fact that these studies were conducted in different settings.

Current study showed that the areas of least awareness about motor development of a child were appropriate age to walk upstairs (16.3%) and eat with spoon (34.5%). Similar findings were seen in the other study¹¹ that revealed mothers correctly responded to the questions related to the appropriate age to let child walk upstairs (26.4%) and eat with spoon (23.9%). In this study 41.3% of the mothers correctly responded that in utero child brain begins to develop, contrary to this another study¹² showed that that only 16.33% mothers responded to

Table 5: Association between level of awareness and selected variables

n=104

Variable	Level of Awareness		χ^2	p-value
	Adequate No. (%)	Inadequate No. (%)		
Age (in years)				
20-29	12(21.8)	43(78.2)	0.630	0.427
30-39	14(28.6)	35(71.4)		
Religion				
Hinduism	19(24.7)	58(75.3)	0.17	0.897
Others	7(25.9)	20(74.1)		
Ethnicity				
Brahmin /Chhetri	18(27.3)	48(72.7)	0.498	0.481
Others	8(21.1)	30(78.9)		
Residence				
Urban	18(29.5)	43(70.5)	1.599	0.206
Rural	8(18.6)	35(81.4)		
Level of education				
Up to basic level	12(21.8)	43(78.2)	0.630	0.427
Secondary & above	14(71.4)	35(28.6)		
Spouse education				
Up to basic level	7(23.3)	23(76.7)	0.62	0.803
Secondary & above	19(25.7)	55(74.3)		
Occupation				
Employed	6(22.2)	21(77.8)	0.150	0.698
Self employed	20(26.0)	57(74)		
Spouse occupation				
Employed	7(25.0)	21(75.5)	0.00	1.00
Self employed	19(25.0)	57(75.0)		
Types of family				
Nuclear	14(21.9)	50(78.1)	0.867	0.352
Joint	12(30.0)	28(70.0)		
Number of children				
One	13(23.2)	43(76.8)	0.206	0.650
Two or more	13(23.2)	35(72.9)		
Age of child				
Birth- 6 months	12(25.0)	36(75.0)	0.00	1.00
6 months-1 year	14(25.0)	42(75.0)		
Source of information				
Health personnel	15(24.6)	46(75.4)	0.13	0.908
Others	11(25.6)	32(74.4)		

Significance level at <0.05. same question correctly.

The study found that only 25% of mothers had good level of awareness, 66.3% of them had average level of awareness and only 8.7% had below average level of awareness. These findings were supported by the study⁵ where it was found that 13.3% had good knowledge, 75.9% had average knowledge, and only 10.8% had poor/below average knowledge. Another study⁸ also revealed similar findings where 53% of mothers had good knowledge score followed by 26% average, 12% below average score and least 9% had excellent knowledge regarding developmental milestones of child. The findings were almost similar with yet another study¹³ which showed that 62% of the mothers had inadequate knowledge and 26% of them had moderately adequate knowledge whereas only 12% of them

had adequate knowledge. The similarities might be because of the fact that none of the awareness programs address the developmental milestone achievements of the children in all of these settings.

CONCLUSION

Only a quarter of mothers have good awareness on developmental milestones of under 3 years children. Majority have inadequate level of awareness regarding developmental milestones. The awareness was comparatively higher in the domains of social development & play than other domains. None of the selected variables have statistically significant association with level of awareness. Mothers should be given

proper awareness regarding the developmental milestones of children so developmental problems are identified early and timely interventions are done.

CONFLICT OF INTEREST: None

FINANCIAL DISCLOSURE: None

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