A study regarding awareness among mothers of children from 12 months to 23 months about growth charting and its determinants in rural area of Amritsar district

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Abstract

Despite of various nutritional health programmes, malnutrition among children remains the big health problem in India. Even after the universalization of ICDS, India has biggest burden of malnourished children in the world. Suboptimal utilization of services by mothers is a big challenge before all programmes. Utilization of services also depends upon the awareness regarding the service and its perceived usefulness among beneficiaries. Therefore, the present study was conducted to know the awareness about the growth chart and its determinants among rural mothers. Study was conducted on 186 mothers selected from three villages. Chi square test and F test were applied wherever necessary. Results showed low level of awareness (38.17%) among the mothers regarding growth charting. Majority of mothers reported peripheral health functionaries i.e. ASHA (36.62%) & Anganwari worker (39.44%) as source of information. Distance from Health facility did not affect the knowledge of mothers. However, socio economic status and educational level of mothers were significantly associated with presence of awareness among mothers.

Introduction:

Health is a positive attribute of life. Maximally attainable and acceptable level of health for all people is our goal. The future of nation is the future of its children. If the limited resources in health sector are to be preferentially applied to any segment of population, it logically flows to children and mothers. 43% of Indian children under five years are underweight and 48% (i.e. 61 million children) are stunted due to chronic undernutrition. India accounts for more than 3 out of every 10 stunted children in the world.[1] The National Family Health Survey (NFHS) in India reported the prevalence of underweight among children younger than 3 years in 2005–2006 to be nearly 46%, a figure representing only a marginal decline from the rates recorded in 1992–1993 (51%) and 1998–1999 (47%).[2-5]

Weight for age is the most widely used index for assessment of under nutrition in clinical practice and the only one used by the Integrated Child Development Services (ICDS) programme in India. Under ICDS programme a vast network of anganwadi centres and workers known as Anganwadi workers (AWW) has been established to monitor children's growth by weighing at monthly intervals and plotting it on growth chart.[6]

The World Health Organization has recommended use of growth chart for the close monitoring of children's growth.[7,8] Studies of childhood growth have revealed that early detection of faltering growth is valuable as it facilitates quick intervention by mothers and doctors through better health care and appropriate nutritional changes.[8]

The availability of this tool does not automatically translate to its use. Knowledge of its meaning and usefulness and its acceptance by the mothers who are directly in charge of childcare is necessary. Wide use of the growth chart suggests that mothers accept full responsibility for their children's care.[9]

Many specific factors could be determinants of growth chart use. Use of any tool depends about the awareness regarding the tool and its perceived usefulness. Therefore, this study was conducted to assess the awareness of mothers regarding growth chart and its usefulness.

Keywords: Awarness, Growth chart, Mothers, Growth Monitoring

Materials and Method: The study was carried out in Verka Block of District Amritsar which is the rural field practice area attached to the department of Community Medicine, Government Medical college, Amritsar.

All the villages of the block were listed and were categorized according to following 3 categories (Depending upon presence of Government health centre within the geographical boundaries of village)

    i.   With subsidiary health centre
    ii.   With sub centre
    iii.   With no health centre

One village from each category was selected randomly by drawing lottery .These villages were Mudhal (With subsidiary health centre), Sanghana (With sub centre), Dhaulkalan (With no public health centre).

TYPE OF STUDY   :   Cross Sectional

STUDY POPULATION   :   Mothers of 12 months to 23 months old children

STUDY PERIOD   :   January 2012 to May 2012

SAMPLING METHOD   :   Stratified Random Sampling

All the houses of chosen areas were visited & numbered and inquired about 12 months to 23 months old children. Help of ASHA worker, Anganwadi worker was sought. Total children of required age group were186. Single author interviewed all mothers after taking informed consent. Information obtained was recorded by the author on a pretested questionnaire in the vernacular language (i.e. language in which the respondent could understand the best). At the end of the study, the recorded information was compiled and analyzed with the help of Epi info (7.1). Chi square test and F test were applied wherever necessary and valid conclusions were drawn. Approval from the institutional ethical committee was taken beforehand.

Criteria for socio-economic status was taken as per Kuppuswamy's scale (2012) (According to CPI index during 2012 for Agriculture and rural labour).[10]

Awareness about growth charting was considered if an individual fulfilled the following criteria

1. Awareness about the existence of growth chart
2. Awareness about parameters taken during charting (i.e. Age of child & Weight)
3. Awareness about the usefulness of growth charting

Results:

The study was carried out in three villages of Verka Block of District Amritsar. Mothers of children from 12 months to 23 months participated in the study (Figure 1). Total 186 mothers were interviewed.

Table no. 1 shows distribution of study subjects according to place of residence. Out of total 186 mothers, 30.11% belong to Dhaulkalan, 48.39% belong to Saghana and 21.51% belong to Mudhal. The distance of Mudhal, Saghana and Dhaulkalan from block headquarter i.e. PHC Verka is 5 km, 18 Km & 14 km respectively.

Table no. 2 summarizes various socio demographic factors of mothers. None of the mothers was under 18 years age. Majority (86.56%) of mothers were in 18-29 years age group. There was no statistically significant difference in distribution of mothers according to age groups among villages.

Out of total 186 mothers, 95.16% belonged to Sikh religion and 4.84% belonged to Hindu religion. Difference in distribution of mothers according to religion among villages was not found to be statistically significant.

Among total mothers, majority (61.83%) belonged to schedule caste followed by general (31.18%) and backward caste(6.99%). Majority of mothers in Dhaulkalan and Mudhal belonged to scheduled caste i.e. 62.50% & 70% respectively. Statistically, distribution of population of Saghana village is significantly different from other villages as majority belonged to general caste (52.50%).

According to kuppuswamy Scale, out of total 186 mothers, majority were in upper lower class (58.60%) followed by upper middle class (27.96%). The scenario was similar in all three villages with slight difference. Statistically, difference in distribution according to socio economic class among three villages was not significant. Majority of mothers belonged to joint families (70.97%) and rest were in nuclear families (29.03%). Statistically, difference in the distribution according to type of family among the three villages was not significant.

Majority of mothers (29.57%) who participated in the study were illiterate followed by high school (22.83%), Primary school (20.97%), Middle school (12.9%), Intermediate (11.83%) and graduate (2.15%). Pattern of distribution according to educational status of mothers was found to be same in all three villages.

Table no. 3 shows that only 38.17% mothers had any kind of knowledge and 61.83% mothers were completely unaware about growth chart. In Dhaulkalan, only 33.93% mothers had knowledge. Same scenario was found in Saghana and Mudhal where only 35.00% and 42.22% mothers respectively were aware about charting of growth. Statistically, this difference in distribution was not found to be significant.

Table no. 4 represents distribution of socio demographic characteristics of mothers in relation to their awareness about growth charting. Among illiterate mothers, only 18.18% mothers were aware about charting of growth. Among Primary educated, 38.46% mothers were aware about it. Percentages of mothers who were aware about growth charting, were 37.50%, 54.76%, 59.09% and 25% in middle school educated, high school educated, intermediate school educated and graduate mothers respectively. It seemed that awareness about growth charting was more in high-educated mothers and this difference in distribution was found to be statistically significant.

Among mothers who belonged to Upper middle class, majority (57.69%) were aware about growth charting. On the other side, majority of mothers from lower socioeconomic class (66.67%) were unaware about the growth chart and its benefits. It was observed that mother form higher socioeconomic class were more aware about growth charting in comparison to mothers from lower socioeconomic class and this difference in distribution was found to be statistically significant.

Table no. 5 shows distribution according to source of knowledge regarding benefits of growth monitoring. Out of total 71 mothers, 97.18% persons reported family as a source of information about growth monitoring followed by AWW & ASHA i.e. 39.44% & 36.62% respectively. Other health functionaries like Health assistants (Male & Female), trained dais, pharmacist and doctors (Government & Private) also educated 28.17% mothers regarding gowth charting.

It was observed that health functionaries were reported as source of knowledge more in villages with health centre than village without any health centre in the geographical boundaries. However, this difference was significant only in case ASHA, Anganwadi worker and other health functionaries.

Discussion

Growth monitoring of children is basic component of the nutritional services provided through an anganwadi centre. It is recommended that children age 0-35 months be weighed monthly and older children be weighed quarterly. Anganwadi worker has responsibility to weigh each child every month, record and maintained growth card. She has to create awareness regarding benefits of growth monitoring.

This study reported that a small proportion of mothers (38.17%) were aware about growth charting. Study done by Gopaldas et al. (1990) reported only 1% mothers could understand growth charting in rural areas of India.[11] Similar findings were obtained by N Al Nahedh et al. (2003) in Saudi Arabia where 35.80% mothers were aware about growth charting.[12] However, this finding was very less in comparison to study by Ben-Joseph EP et al. (2009) in USA where 98% parents had seen the chart before and 53% parents were able to identify all chart features.[13] In Ilorin, Nigeria a study done by Fagbule et al. (1990) reported 54% mothers being aware of growth charting.[14]

In the present study, there was no significant difference in the awareness of mothers among the villages. Therefore, distance from health centres did not affect the awareness of mothers about growth charting. This may be due to the presence of anganwadi centre in every village as growth charting is primarily Anganwadi worker's responsibility. However, proximity of health centre may help peripheral worker in working properly. Proximity of health centre makes it easier to convince mothers regarding growth charting and early intervention in case of

deviation. Due to the proximity of health centre, it is also easy to review the performance of peripheral workers on regular basis. It may be a possible reason for better performance of peripheral workers in villages with health centre within the geographical boundaries in this study.

This study reported peripheral workers i.e. ASHA and Anganwadi worker as the major source of information about growth charting especially in villages with health centre. However, it was noted in the study that only a small proportion mothers were given information by health functionaries. Health education is a responsibility of peripheral workers but lack of incentives for these activities might be a factor for their relatively poor performance. This study reported very deficient working of ANMs in study village in relation to education of mothers about growth charting. ANM, being the most peripheral salaried worker, is fully responsible for providing services and education at most peripheral points of health care delivery system.

In the study, educational status of mothers and socioeconomic status of families were significantly associated with presence of awareness of growth charting. These findings are in coherence with many other studies. Seven studies reported data separately for literate or educated and non-literate or non-educated caregivers (Grant & Stone 1986;[15] McAuliffe et al. 1993;[16] Senanayake et al.1997;[17] Musaiger et al 2001;[18] N. Al-Nahedh et al 2003;[11] Ben-Joseph EA et al 2009[12]). The results provide clear evidence that literate women are much better at comprehending the test cards. Four other studies mentioned similar results but did not report quantitative evidence (Owen & Owen 1983;[19] Gopaldas et al. 1990;[10] Owusu & Lartey 1992;[20] Rasheed et al. 1996[21]). One study mentioned that they found no differences related to maternal education (Hughson et al. 1988).[22]

Musaiger & Abdulkhalek (2001)[18] and Ben-Joseph EA et al (2009)[12] reported similar findings in relation to role of socio economic status on awareness regarding growth charting i.e. low socio economic status predisposes unawareness of growth monitoring.

Conclusion

Findings of this study reported low level of knowledge regarding growth charting among mothers. This low level of knowledge among mothers emphasized need of revamping of health education policy in India.

This should not be perceived as education buys awareness. However, the more educated mother is more likely to appreciate the need to monitor her children's growth. The educated mother understands the consequences of any faltering of growth in her children. Such knowledge also makes the mother an active participant in decisions regarding the diet, feeding and child health practices needed to achieve normal growth. There is growing awareness of value of improving communication between health workers and families as a means of substantiating the potential of educational interventions to reduce the burden of malnutrition.

Whether growth charts have any role in shaping attitudes of health functionaries about nutrition problems and effective counseling? This matter is beyond the scope of our study. This raised question needs to be addressed through further focused studies. Improving programmes requires close attention to the process, better feedback system and a quick redressal system.

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Table 1: Distribution of mothers according to place of residence

Place of residence	No. of participants		Distance from PHC
	No.	%	
Dhaulkalan	56	30.11%	5 Kms
Saghana	40	48.39%	18 Kms
Mudhal	90	21.51%	14 Kms
Total	186	100%	

Table 2: Socio demographic characteristics of mothers in the study sites (N=186)

	Dhaul Kalan		Saghana		Mudhal		Total		P Value
	%	No.	%	No.	%	No.	%	No.	
Age Of Mothers									
< 18 Years	0	0%	0	0%	0	0%	0	0%	>0.05
18 - 24 Years	22	39.29%	16	40.00%	42	46.67%	80	43.01%	
25 - 29 Year	28	50.00%	22	55.00%	31	34.44%	81	43.55%	
30 - 34 Years	6	10.71%	0	0%	13	14.44%	19	10.22%	
> 34 Years	0	0%	2	5.00%	4	4.44%	6	3.23%	
Religion									
Sikh	53	94.64%	37	92.50%	87	96.67%	177	95.16%	>0.05
Hindu	3	5.36%	3	7.50%	3	3.33%	9	4.84%	
Caste									
General	18	32.14%	21	52.50%	19	21.11%	58	31.18%	<.05
Backward Caste	3	5.36%	2	5.00%	8	8.89%	13	6.99%	
Scheduled Caste	35	62.50%	17	42.50%	63	70.00%	115	61.83%	
Scheduled Tribe	0	0%	0	0%	0	0%	0	0%	
Socio – Economic Status									
Upper Middle	16	28.57%	16	40.00%	20	22.22%	52	27.96%	>0.05
Lower Middle	10	17.86%	3	7.50%	9	10.00%	22	11.83%	
Upper Lower	30	53.57%	19	47.50%	60	67.67%	109	58.60%	
Lower	0	0.00%	2	5.00%	1	1.11	3	1.61%	
Type Of Family									
Joint	37	66.07%	33	82.50%	62	68.89%	132	70.97%	>0.05
Nuclear	19	33.93%	7	17.50%	28	31.11%	54	29.03%	
Education Status Of Mothers									
Graduate OR Post Graduate	1	1.79%	1	2.50%	2	2.22%	4	2.15%	>0.05
Intermediate/Diploma	5	8.93%	6	15.00%	11	12.22%	22	11.83%	
High School	10	17.86%	12	30.00%	20	22.22%	42	22.58%	
Middle School	8	14.29%	4	10.00%	12	13.33%	24	12.90%	
Primary School	14	25.00%	4	10.00%	21	23.33%	39	20.97%	
Illiterate	18	32.14%	13	32.50%	24	26.67%	55	29.57%	

Table 3: Distribution of mothers according to presence of awareness about growth chart (N=186)

Village	Awareness about Growth Charting					
	Present		Absent		Total	
	No.	%	No.	No.	%	No.
Dhaulkalan	19	33.93%	37	66.07%	56	100%
Saghna	14	35.00%	26	65.00%	40	100%
Mudhal	38	42.22%	52	57.78%	90	100%
Total	71	38.17%	115	61.83%	186	100%

χ^2 =1.223,   df = 2,   p>0.50

Table 4: Distribution of mothers according to socio-demographic characteristics in relation to awareness about growth charting (N=186)

	Awareness about growth charting						P Value
	Present		Absent		Total		
	No.	%	No.	%	No.	%	
Education of mother							
Graduate OR Post graduate	1	1.41% (25.00%)	3	2.6% (75.00%)	4	2.15% (100%)	<0.05
Intermediate/diploma	13	18.31% (59.09%)	9	7.83% (40.91%)	22	11.83% (100%)	
High school	23	32.39% (54.76%)	19	16.52% (45.24%)	42	22.58% (100%)	
Middle school	9	12.68% (37.50%)	15	13.04% (62.50%)	24	12.90% (100%)	
Primary school	15	21.13% (38.46%)	24	20.87% (61.54%)	39	20.97% (100%)	
Illiterate	10	14.08% (18.18%)	45	39.13% (81.82%)	55	29.57% (100%)	
Socioeconomic status							
Upper middle	30	42.25% (57.69%)	22	19.13% (42.31%)	52	27.96% (100%)	<0.05
Lower middle	8	11.27% (36.36%)	14	12.17% (63.64%)	22	11.83% (100%)	
Upper lower	32	45.07% (29.36%)	77	66.96% (70.64%)	109	58.60% (100%)	
Lower	1	1.41% (33.33%)	2	1.74% (66.67%)	3	1.61% (100%)	
Total	71	100% (38.17%)	115	100% (61.83%)	186	100% (100%)	

*Bracketed values denote row percentage.

Table 5: Distribution of mothers according to source of information regarding growth charting

Source Of Information	Dhaulkalan (N=19)		Saghana (N=14)		Mudhal (N=38)		Total (N=71)		P value
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	
ANM	1	5.26%	0	0%	3	7.90%	4	5.63%	>0.05
ASHA	2	10.52%	6	42.86%	18	47.37%	26	36.62%	<0.05
AWW	3	15.78%	5	35.71%	20	52.63%	28	39.44%	<0.05
Family / Community Member	17	89.47%	14	100%	38	100%	69	97.18%	>0.05
Person conducted Delivery	1	5.26%	5	35.71%	6	15.79%	12	16.90%	>0.05
Other HF	11	57.90%	3	21.43%	6	15.79%	20	28.17%	<0.05

*Multiple Responses were permitted