

A Study of Awareness and Utilization of Growth Charts among Mothers of Children Aged 9 to 24 Months Attending the Immunization OPD of A Tertiary Care Teaching Hospital in Aurangabad

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ABSTRACT

Introduction: The WHO has recommended use of growth chart (GC) for close monitoring of children's growth. However, the availability of this tool does not automatically translate to its use. Knowledge of its meaning, usefulness and acceptance by the mothers who are directly in charge of childcare is necessary.

Aim: To find out the extent of utilization of growth charts among mothers of children aged 9 to 24 months attending the immunization outpatient department (OPD) of a tertiary care teaching hospital in Aurangabad.

Materials and Methods: The study was carried out in the immunization OPD, which comes under the Department of Community Medicine, MGM Medical College and Hospital, Aurangabad. It was a cross sectional, descriptive study. The study population included all mothers of children aged between 9 to 24 months who attended the immunization OPD. Face to face interview was conducted with help of a structured questionnaire.

Results and Conclusion: Awareness was found to be low i.e. 21.11% among the respondents. Health personnel were involved in explaining growth charts to only 13% of the respondents. Only 15.60% of the respondents knew the correct use of growth charts. The utilization of growth charts was found to be only 01.84%. Association was found to be highly significant between awareness about growth charts and education, socioeconomic status and occupation of mothers, as also, knowledge about growth charts and education of mothers.

Keywords: Awareness, Children, Growth charts, Immunisation

INTRODUCTION

The children are the rock on which our future will be built. Children are the greatest asset of any nation. Growth and development of children has fundamental importance in a country's overall progress. The National Policy for Children adopted by India in 1974, states that – "It shall be the

policy of the state to provide adequate services to children, both before and after birth and through the period of growth, to ensure their full physical, mental and social development. The State shall progressively increase the scope of such services so that, within a reasonable time, all children in the country enjoy optimum conditions for their

balanced growth.”^[1] Acknowledging this importance, the Integrated Child Development Services (ICDS) was launched in 1975 in India. It comprehensively offers an integrated package of services to address the basic need of children below 6 years, adolescent girls and mothers from disadvantaged community since last four decades. The program has three components of services namely health, nutrition, and pre-school education.^[2] Today, even after the universalization of ICDS, India has biggest burden of malnourished children in the world. According to UNICEF, at national level, 28% of children born are low birth-weight. The proportion of under 5 children who are severely under-weight is 15.8%, and 42.5% are severely or moderately under-weight. 48% of under 5 children are moderately and severely stunted. Proportion of wasting (moderate and severe) is 19.8%.^[3] The statistics for Maharashtra are slightly different. According to latest data from National Family Health Survey 4 (NFHS 4) (2015-16), the percentage of under-5 children who are stunted (height for age) is 34.4% and percentage of under-5 children who are wasted (weight for height) is 25.6%.^[4] Growth chart, first designed by David Morley, is helpful in the longitudinal follow-up (growth monitoring) of a child, so that changes over time can be interpreted. Early detection of faltering of growth is valuable. Growth chart is one of the easiest to understand tool for growth monitoring. It can detect growth faltering weeks to months before the clinical signs of malnutrition set in, providing ample time for intervention.^[5] It has been recommended by World Health Organisation (WHO) and is being used under the ICDS in India. One of the steps propounded by WHO for health workers is – “Plot the measurements on the chart, show it to the mother and explain to her how her child is growing. Link this conversation to the child’s feeding, care, protection and stimulation.”^[6]

However, the availability of growth charts does not automatically translate to its

use. The awareness, understanding and acceptance of growth chart by the mother are a pre-requisite, as she is directly in charge of child health care.

With this in view, current study was undertaken to find the awareness and utilization of growth charts among mothers attending the immunisation OPD of a tertiary care teaching hospital.

Aim:

To find out the extent of utilization of growth charts among mothers of children aged 9 to 24 months attending the immunization OPD.

Objectives:

1. To estimate the proportion of study respondents who are aware of growth charts.
2. To report the extent of utilization of growth charts among the study respondents.
3. To describe the perception of usefulness of growth charts among the study respondents.

MATERIALS AND METHODS

Research Setting and Study Area: The study was carried out in the immunization OPD, which comes under the Department of Community Medicine, MGM Medical College and Hospital, Aurangabad.

Study Period: November 2016 – January 2017.

Study Design: Cross-sectional descriptive study.

Study population: The study population includes all mothers of children aged between 9 to 24 months who attended the immunization OPD from 1st December to 31st December 2016.

Study Instrument: A structured questionnaire was prepared consisting of basic demographic information, questions regarding awareness, knowledge, utilization and perception of usefulness. Likert scale was used wherever necessary.

Inclusion and Exclusion Criteria: Mothers who were present at the time of data

collection and who were willing to participate in the study.

Interview of Respondents: The mothers were explained the purpose of study and informed consent was obtained. Face to face interview was conducted in a language the respondent understands, after answering all their doubts, if any, regarding the study. The interview was carried out in a separate room to ensure privacy.

Data Entry and Analysis: Data was entered in MS Excel 2010 and was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 software. Wherever necessary, the appropriate tests of significance were used to find out significant difference. A two tailed p value of less than 0.05 was considered statistically significant.

OBSERVATIONS AND RESULTS

Total 109 mothers were interviewed. Their age ranged from 17 to 32 years with mean of 24.20 years and standard deviation of 4.33. Maximum belonged to 18-24 years group (58.71%). The mean age of their children was 14.98 months with standard deviation of 4.02. Also, maximum belonged to 13-16 months group (33.94%). There were total 52 female and 57 male children. The number of live children per woman varied from 1 to 4. Of the total mothers, 76 were homemakers, while 33 were working mothers. None of the respondents was illiterate, maximum possessed high school certificate (52.29%). According to the modified Kuppaswamy socio-economic classification, none belonged to the lower socio-economic class, maximum belonged to the lower middle class (46.78%). 54(49%) carried MGM immunisation card, 39(36%) carried cards from other private hospitals, 13(12%) had Government mother and child protection card, while 3(3%) did not have any card.

23(21.11%) of the respondents were aware of growth charts, while remaining 86(78.89%) had never heard of or seen the growth chart before. 14(13%) reported that a health personnel (doctor/nurse) had

explained the importance of growth chart to them.

Regarding knowledge about growth charts, 17(15.60%) reported the method used to plot the growth chart correctly. Only 2 (01.84%) of the charts were ever marked.

Of all the respondents who were aware of growth charts, 6(26.08%) thought that growth chart are extremely useful, 12(52.18%) thought that they are useful, 2(08.70%) reported that they cannot decide while 3(13.04%) thought that they are somewhat useful. None of the mothers thought that the growth charts are not useful at all.

The association between carrying the Mother & Child Protection Card and the kind of occupation of mother was not found to be significant ($X^2_{(df=2)} = 0.0867$, $p = 0.908$).

Table 1 shows association between awareness about growth charts and education of mothers is highly significant ($X^2_{(df=5)} = 164$, $p < 0.001$).

Table 1. Association between Awareness about Growth Charts and Education of Mothers

Education of mothers	Awareness regarding growth charts		Total
	Yes	No	
Illiterate	00	00	00
Primary School Certificate	00	03	03
Middle School Certificate	04	10	14
High School Certificate	02	55	57
Post High School Diploma	04	13	17
Post/Graduation	12	5	17
Professional	01	00	01
Total	23	86	109

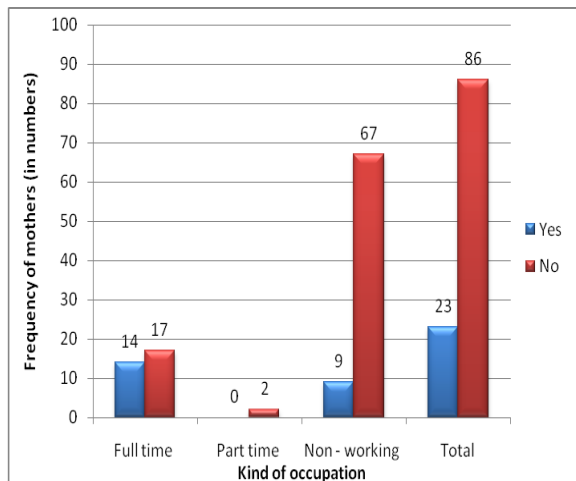
Table 2 shows association between awareness about growth charts and socio-economic status (according to Modified Kuppaswamy Classification) was found to be significant ($X^2_{(df=3)} = 11$, $p = 0.012$).

Table 2. Association between Awareness regarding Growth Charts and Socio-economic Status

Socioeconomic Status	Awareness regarding growth charts		Total
	Yes	No	
Upper	01	00	01
Upper Middle	15	31	46
Lower Middle	06	45	51
Upper Lower	01	10	11
Lower	00	00	00
Total	23	86	109

The association between awareness about growth charts and number of living children was found to be not significant ($X^2_{(df=3)} = 1.84, p = 0.606$).

The association between awareness about growth charts and occupation of mothers was found to be highly significant ($X^2_{(df=2)} = 15.2, p = 0.000$).



Graph 1. Awareness regarding Growth Charts and Occupation of Mothers

Table 3 shows the association between knowledge about growth charts and education of mothers to be significant ($X^2_{(df=5)} = 18.1, p = 0.003$).

Table 3. Association between Knowledge regarding Growth Charts and Education of Mothers

Education of Mothers	Knowledge Regarding Growth Charts		Total
	Yes	No	
Illiterate	00	00	00
Primary School Certificate	00	03	03
Middle School Certificate	02	12	14
High School Certificate	03	54	57
Post High School Diploma	06	11	17
Post/Graduation	05	12	17
Professional	01	00	01
Total	17	92	109

Association between knowledge about growth charts and socioeconomic status of mothers was found to be not significant ($X^2_{(df=3)} = 7.32, p = 0.062$).

Association between utilization of growth charts and education of mothers was also found to be not significant ($X^2_{(df=5)} = 2.20, p = 0.820$).

Association between utilization of growth charts and socioeconomic status of

mothers was not significant ($X^2_{(df=3)} = 2.32, p = 0.509$).

DISCUSSION

Overall awareness was found to be very low (23, 21.11%) in this study which is consistent with the findings of a study conducted by Deepak Upadhyay et al titled "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". Their 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%) & Anganwadi worker (39.44%) as source of information. Socio economic status and educational level of mothers were significantly associated with presence of awareness among mothers, which is again consistent with our findings. [7]

Another study conducted by Akash Malik et al in a north-east district of Delhi, reported that growth monitoring was being carried out in only 28 (68.3%) out of 41 Anganwadi centers. This is consistent with low utilization of growth charts reported in our study. [8]

Study by Behzad Shams et al titled "Comparison of growth and nutritional evolution stages in infants with working mothers and infants with housewife mothers in Isfahan", reported that growth monitoring charts of the infants with housewife mothers were better than those of infants with working mothers in three out of seven age groups studied. In our study also there was a significant association between awareness regarding growth charts and occupation as well as education of mothers. This may be because better education and working outside gives better chances of exposure of mother to health education. [9]

In a study conducted by Vasundhara M K, Harish B N et al survey of 52 Anganwadi workers and 156 mothers of ICDS beneficiary children was carried out in Nelamangala, Bangalore. It was found

that 53.50 % of the 2507 growth charts were plotted satisfactorily. 86.53 % of the mothers were aware of the growth monitoring of Anganwadi workers and 61% knew it was conducted monthly. 42% reported that Anganwadi workers explained the meaning of growth monitoring and the importance of weighing procedures. These findings are in contrast with the findings in our study. ^[10]

In an article by D. Roberfroid, G. H. Peltó and P. Kolsteren; 20 studies from Asia (8), Africa (8) and Latin America / Caribbean (4) were reviewed. The results of the 14 non-intervention, cross-sectional studies provided convincing evidence that a third to three-fourth of carers in developing countries do not understand the growth charts. Literacy has a strong effect on women's ability to interpret the charts. We have got similar results. ^[11]

Limitations

Results of our study cannot be generalized as it is a hospital based study. Qualitative and quantitative assessment of all the factors responsible for under-utilization were not studied, especially the attitude of health care workers towards utilization of growth charts. Detailed enquiry regarding the perception towards growth charts was not done. Institution wise, private and government, analysis could have been done.

Recommendations

A community based study needs to be undertaken to find out the awareness and utilization of growth charts. There should be effective implementation of policy regarding the plotting of growth charts in the institute. Strengthening of communications between health care workers and mothers should be done. Health care workers must educate mothers regarding growth charts. This could be done with help of posters depicting the importance of growth charts which can be displayed in local language in OPDs. Community level IEC activity emphasizing the importance of growth charts can be arranged. Capacity building can be

undertaken by arranging for training and motivation of health care workers along with parental counseling.

CONCLUSION

Awareness was found to be low i.e. 21.11% among the respondents. Health personnel were involved in explaining growth charts to only 13% of the respondents. This finding highlights the apathy of health personnel towards using growth charts. Only 15.60% of the respondents knew the correct use of growth charts. The utilization of growth charts was found to be only 01.84%. Perception of usefulness reported was as follows: 06 respondents thought that growth charts are extremely useful, 12 thought they are useful, 02 said they cannot say, 03 thought they are somewhat useful, while none reported that growth charts are not useful at all. Association between following was found to be highly significant: awareness and education; awareness and socioeconomic status; awareness and occupation, knowledge and education. Association between following was found to be not significant in: carrying the Mother & Child Protection Card and kind of occupation; awareness and number of living children; knowledge and socioeconomic status; utilization and education; utilization and socioeconomic status.

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Conflict of Interests: None.

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