

## EVALUATION OF NURSING MOTHERS' ABILITY TO INTERPRET THE GROWTH MONITORING CHART IN PRIMARY HEALTH CARE FACILITIES IN JOS

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### ABSTRACT

#### **Objective:**

To determine the knowledge of nursing mothers in the interpretation of growth monitoring curves and assessing those factors that are responsible for the differences in their knowledge in the Primary Care facilities

#### **Study Population/Method:**

Three hundred and twenty women were studied which were selected from Jos University Teaching Hospital (JUTH), Primary Health Clinic, Nasarawa and Tudun Wada, all in Jos North LGC of Plateau State. A structured questionnaire was used to obtain personal information on the mother and source of information on growth monitoring chart. A graphic representation of the growth curve was presented to each nursing mother for interpretation.

#### **Result:**

The interpretation of growth monitoring was correct in 40.6% of mothers for rising curve, 37.2% for flat curve, and 45.3% for falling curve. There is statistically significant difference between the correct interpretation of growth curve by mothers from family health clinic compared with the other two PHC facilities.

#### **Conclusion:**

Mothers should be involved in a formal method of training focus on group discussion and demonstration of growth monitoring and nutritional promotion. Key- Words: Growth monitoring curve, growth, and mothers.

### INTRODUCTION

The growth chart has been developed over the years. In Nigeria in the 1950's, David Morley developed a chart relating the weight of a child to its age which became known as the "growth chart" in Ile-Ife.

This is a simple clinic and home based technology in which the child's weight is plotted monthly on the record chart and the points joined up to form the child's growth curve. The direction of the curve obtained from plotting the weight of the child, relative to the diagonal curves, is of key importance, it can be used to predict the nutritional and health status of a child before symptoms of illness are noticed.

The growth chart, therefore, affords both the health worker and the mother the opportunity to take steps early before malnutrition becomes apparent, helping to restore the child to normal growth. For the growth chart

to be useful, it needs to be clearly understood not only by the health worker, but also by the mother, because the home based chart should be kept by her and brought to the clinic whenever her baby is ill.

A correct interpretation to a correctly plotted chart by the mother shows that she understands reasonably the concept of growth and the fullness of the chart. This is very important in successful growth monitoring. It is also important to note that when the health worker gives pieces of advice and counsels the mother on how to take care of the child, it is the mother who actually provides the health care services at home. Therefore, she should be fully involved in growth monitoring activities and not just an observer.

This study was aimed at determining the knowledge of nursing mothers in the interpretation of growth monitoring curves and assessing those factors that are responsible for the differences in knowledge in the Primary Health Care facilities.

### METHODOLOGY

This study was carried out in three (3) Primary Health Care facilities in Jos, Jos North Local Government Area of Plateau State. These facilities are Family health clinic, (Jos University Teaching Hospital), Nasarawa and Tudun Wada Primary Health Centres.

The Family health clinic has an average daily attendance of one hundred and fifty (150) mothers from different socio-economic strata, who attend the clinic. Services are offered to mothers from Dilimi, Gangare, Rikkos mainly but mothers from all over Jos North LGA and Jos South LGA are also in attendance. Nasarawa PHC center is located in a semi-urban settlement with mothers mainly from the lower socio-economic strata. The average daily attendance is about seventy (70) mothers, while Tudun Wada PHC center has an average daily attendance of about fifty (50) mothers.

Services offered in all the facilities are growth monitoring, immunization, nutritional counseling and treatment of sick children. Nasarawa and Tudun Wada PHC centres also offer family planning services. Systematic sampling technique was used to proportionately select three hundred and twenty (320) nursing mothers into the study over a period of one month. These were distributed as follows: JUTH (186), Nasarawa (80) and Tudun Wada (54), nursing mothers over one month when data were generated.

A structured questionnaire was used to obtain personal information on the mother and source of information on growth monitoring chart. A graphic representation of the growth curve was presented to each nursing mother for interpretation. All the information selected were obtained by one researcher to prevent inter-observer variation in the assessment of the mother's knowledge. Secondary data were also obtained on the number and category of staff in each facility, types of clinical activities offered in a week and facilities available for growth monitoring in each health center.

All completed questionnaires were analyzed using EPI-INFO computer software. Frequencies and mean values of discrete and continuous variables were calculated while chi-square test was used to determine the association between knowledge of Nursing Mothers to correctly interpret the growth monitoring chart and the health facilities they attend.

**RESULTS**

Three hundred and twenty (320) nursing mothers were assessed to evaluate their ability in the interpretation of the growth monitoring chart. 186 (58.1%), 80 (25%) and 54 (16.9%) were recruited from Family Health Clinic (JUTH), Nasarawa and Tudun Wada Primary Health Care (PHC) clinics respectively.

Mean age, literacy rate, mean length of time growth monitoring was first heard and the proportion of mothers with growth monitoring cards at home from the three health facilities, showed that the Nursing Mothers selected were comparable. The interpretation of growth monitoring curve was correct in 130 (40.6%) of mothers for rising curves; 119 (37.2%) for flat curve and 145 (45.3%) for falling curve (Tables 2,3,4).

There is statistically significant difference between the correct interpretation of growth curves by mothers from family health clinic (JUTH) compared with the other two PHC facilities (tables 5 & 6).

**TABLE 1: BASELINE INFORMATION OF NURSING MOTHERS BY PHC FACILITY**

BASELINE INFORMATION	PRIMARY HEALTH CARE FACILITY		
	JUTH	NASSARAWA	TUDUN WADA
Mean Age (YRS)	26.9 ± 0.46	25.7 ± 0.70	24.6 ± 1.1
Literacy Rate (%)	56.5	76.3	57.4
Mean Length Time GM Was Heard (YRS)	2.6 ± 0.11	0.94 ± 0.09	2.3 ± 0.22
Proportion with GM Card at Home (%)	41.9	77.5	70.4

GM=GROWTH MONITORING  
YRS=YEARS

**TABLE 2: INTERPRETATION FOR A RISING GROWTH CURVE**

INTERPRETATION	PRIMARY HEALTH CARE			
	JUTH FREQ %	NASARAWA FREQ %	TUDUN WADA FREQ %	TOTAL FREQ %
Correct	125 (39.1)	2 (0.6)	3 (0.9)	130 (40.6)
Wrong	23 (7.2)	8 (2.5)	6 (1.9)	37 (11.6)
No Idea	38 (11.8)	70 (21.9)	45 (14.1)	153 (47.8)
TOTAL	186 (58.1)	80(25.0)	54(16.9)	320 (100.0)

**TABLE 3: INTERPRETATION FOR A FLAT GROWTH CURVE**

INTERPRETATION	PRIMARY HEALTH CARE			
	JUTH FREQ %	NASARAWA FREQ %	TUDUN WADA FREQ %	TOTAL FREQ %
Correct	105 (32.8)	8 (2.5)	6 (1.9)	119 (37.2)
Wrong	45 (14.1)	(0.0)	1 (0.3)	46 (14.4)
No Idea	36 (11.2)	72 (22.5)	47 (14.7)	155 (48.4)
TOTAL	186 (58.1)	80 (25.0)	54 (16.9)	320 (100.0)

**TABLE 4: INTERPRETATION OF FALLING GROWTH CURVE**

INTERPRETATION	PRIMARY HEALTH CARE			
	JUTH FREQ %	NASARAWA FREQ %	TUDUN WADA FREQ %	TOTAL FREQ %
Correct	138 (34.1)	2 (0.6)	5 (1.6)	145 (45.3)
Wrong	18 (5.6)	6 (1.9)	4 (1.6)	29 (9.1)
No Idea	30 (9.4)	72 (22.5)	44 (13.7)	146 (45.6)
TOTAL	186 (58.1)	80 (25.0)	54 (16.9)	320 (100.0)

**TABLE 5: COMPARISON OF THE CORRECT INTERPRETATION OF GROWTH MONITORING CURVES BETWEEN JUTH AND NASSARAWA PHC FACILITIES**

GROWTH CURVE	PRIMARY HEALTH CARE FACILITY		P - VALUE (x <sup>2</sup> df,P)
	JUTH FREQ %	NASARAWA FREQ %	
Rising	125 (39.1)	2 (0.6)	93.0,df=1,P<0.001
Flat	105 (32.8)	8 (2.5)	49.5,df=1,P<0.001
Falling	138 (43.1)	2 (0.6)	114.7,df=1,P<0.001

**TABLE 6: COMPARISON OF THE CORRECT INTERPRETATION OF GROWTH CURVES BETWEEN JUTH AND TUDUN WADA CLINIC**

GROWTH CURVE	PRIMARY HEALTH CARE FACILITY		P - VALUE X <sup>2</sup> df, P
	JUTH FREQ %	NASARAWA FREQ %	
Rising	125 (39.1)	3 (0.9)	64.9, df=1,P<0.001
Flat	105 (32.8)	6 (1.9)	34.6,df=1,P<0.001
Falling	138 (43.1)	5 (1.6)	72.2,df=1,P>0.001

**DISCUSSION****Interpretation of Growth Monitoring Charts by Nursing Mothers**

In Nigeria, the objective of the National Growth Monitoring Plan is to develop at Federal, State and Local Areas locally relevant, planned, implemented, acceptable and sustainable growth monitoring programmes<sup>(2)</sup>. Successful growth monitoring however depends on factors other than just bringing the services to mothers, whenever possible efforts should be made to involve them.

In this study, the level of knowledge of nursing mothers in the correct interpretation of various growth monitoring curves was below 50% (tables 2,3,4). This is lower than the UNICEF report of a Ghanaian study which indicated that 66% of near illiterate mothers could interpret the growth chart correctly<sup>(3)</sup> and that of the Zambian study which reported that 73% of mothers could interpret the growth curve<sup>(4)</sup>.

The result from this study might be an indication of the lack of an organized training programme for nursing mothers on growth monitoring activities and the failure of the health workers to understand the growth charts<sup>(5,6)</sup>.

Although the growth chart has been known for many years as a home-based record, many others do not have such records at home and even when they do, lack adequate knowledge on its significance<sup>(7)</sup>. This observation has been confirmed by our study, which showed that 55.6% of the nursing mothers interviewed had their growth charts at home. The lack of knowledge on growth chart has been agreed by some authors as due to the way the weights were plotted<sup>(7,8)</sup>.

One study in West Africa suggested that mothers understand the chart more easily if the weights were plotted not as a dot, but as bars<sup>(8)</sup>. This observation could be an area of research in order to promote mothers participation in growth curves.

The teaching method adopted for training mothers on growth monitoring could be another reason for poor knowledge on growth monitoring curves. Therefore there is need to adopt an appropriate method for teaching mothers on growth curves. A similar study has demonstrated the effectiveness of group approach to teaching mothers in the community<sup>(9)</sup>.

The group learning approach clearly has great potential for accelerating the creation of awareness about growth monitoring. Therefore there is need to extend growth monitoring activities to communities rather than concentrating on a clinic based programme. The introduction of TALC direct recording scales at community level could be a better method of encouraging community participation for growth monitoring activities<sup>(10)</sup>.

**CONCLUSION AND RECOMMENDATION**

The assessment of nursing mothers' knowledge on growth monitoring curves has been found to be poor in all the PHC facilities studied. Although these

facilities have enough resources to coordinate a clinic-based growth monitoring programme.

There is need to involve mothers in a formal method of training, focus group discussion and demonstration on growth monitoring and promotion. Community based growth monitoring and nutrition education should be introduced along with these clinic-based programmes. There should be political commitment of Government at Federal, State and Local Government levels in Primary Health Care programmes, so that activities like growth monitoring and promotion will contribute to the reduction of nutritional problems in children.

#### References

1. WHO. A Growth Chart for International use in Maternal and Child Health Care-Primary Health Care Personnel. WHO, Geneva, 1978.
2. FMOH. Strengthening Primary Health Care at Local Government Level. The Nigerian Experience, 1988.
3. UNICEF. State of the World's Children 1985. Oxford. Oxford University Press, 1984.
4. Msefula D. How Can Growth Monitoring and Special Care of Underweight Children be Improved in Zambia. *Tropical Doctor*. 1993; 23(3) 107-112.
5. David Morley. Mothers monitor growth. *Tropical Doctor*. 1993;23(3) 98-100.
6. Editorial. What happened to growth monitoring? *Lancet*. 1992;11: 149.
7. Morley D; Woodland M. See How They Grow: In Monitoring Child Growth for Appropriate Health Care in Developing Countries ELBS 1986.
8. Lapido, Patricia, Bankole and Na'omi: Is the Educational Function of the Under Fives Weight Chart Optional? Papers read to the 2 Int. Paediatric Conference, Ibadan, 1976.
9. Abdul-Sattar Yoosuf. Group-learning by mothers about Primary Health Care. *World Health Forum*, 1993: 14(1) 20-22.
10. Morley D, Nickson P; Brown R. TALC. Direct Recording Scales (letter) *Lancet* 1991: 338: 1600.