International Journal of Community Medicine and Public Health
Nyang'echi EN et al. Int J Community Med Public Health. 2020 Jan;7(1):22-27
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20195827

Original Research Article

Uptake of routine growth monitoring among children under 9 months in Nyamira County, Kenya

Edna Nyanchama Nyang'echi[1]*, Andre Yitambe[1], Kenneth Kibaraa Rucha[1], Justus O. S. Osero[2]

[1]Department of Health Management and Informatics, [2]Department of Community Health and Epidemiology, School of Public Health and Applied Human Sciences, Kenyatta University, Kenya

Received: 13 September 2019
Revised: 12 October 2019
Accepted: 02 December 2019

***Correspondence:**
Dr. Edna Nyanchama Nyang'echi,
E-mail: ednanyangechi@gmail.com

ABSTRACT

Background: The health and nutritional status of children can be assessed through routine growth monitoring (RGM). This provides opportunities for implementation of interventions aimed at reducing under five mortality rates, infectious diseases and malnutrition. The objective of the study was to find out the level of uptake of routine growth monitoring among caregivers of children aged below 9 months in Nyamira County, Kenya.
Methods: This was a cross-sectional study.
Results: Only 21.1% of the caregivers consistently took their children for RGM. About 78.9% of caregivers had skipped RGM visits for their children in the last eight months at least once or more. About 45.8% of caregivers skipped RGM visits twice, 31.7% thrice, 20.4% once and 2.1% skipped four times. Uptake of RGM was not significantly associated with caregivers' level of education (p=0.052), marital status (p=0.099), occupation (p=0.081), monthly income (p=0.941), distance to nearby health facility (p=0.774) and place of residence (p=0.330). Caregivers who skipped RGM visits gave various reasons including forgetting to come again dates (91.5%), child not sick (77.5%), healthcare providers advising them not to go for RGM since there was no scheduled vaccination (67.6%), among others.
Conclusions: There is need for healthcare providers capacity building on their role in improving RGM since most of them discourage caregivers unless for those with scheduled immunization. Policy makers and implementers in the health sector should formulate relevant policies especially targeted at reminding caregivers on monthly RGM for their children aged below 9 months.

Keywords: Routine, Growth monitoring, Children, Health, Nutrition

INTRODUCTION

Growth monitoring is the serial weighing and measuring of the length/height and head circumference (if child is less than 2 years old) of a child and graphing both measurements on a growth chart.[1] Routine growth monitoring offers an opportunity for various discussions including breastfeeding, healthy eating and active living with children, prompt detection of problems in children, preventive and promotive care.[2] It is important to routinely monitor the growth of children below two years using all the three WHO recommended measurements including weight-for-age, length-for-age and weight-for-length as well as head circumference since they enable identification of problems such as underlying chronic diseases, feeding practices and recent and sudden illnesses.[3] Growth failure among children aged 0-24 months has critical lifetime consequences.[4] Caregivers in

the rural areas of Ethiopia gave various reasons on why they missed growth monitoring sessions as scheduled in their children's clinic cards including: workload, child not sick to seek care and health workers not telling them to attend these sessions.[5] A study done in Ghana found out that routine growth monitoring among children offered an opportunity for implementation of interventions aimed at reducing under five mortality rates, infectious diseases and malnutrition.[6] Majority (98.1%) of mothers in Ghana believed that taking their children monthly to the clinic for weight measurement was important.[7] A study by conducted in Kiambu County, Kenya found out that there was low utilization of growth monitoring services among children aged 12-59 months.[8] In Nyamira County, only 39% of children aged 6-59 months received Vitamin A supplementation and 13% of them are stunted.[9] This is most likely due to low uptake of routine growth monitoring (RGM) in the County. This study therefore aimed at determining the level of uptake of RGM among caregivers of children aged below 9 months in Nyamira County, Kenya.

METHODS

This was a cross-sectional study involving caregivers of children aged below 9 months in Nyamira County, Kenya. Nyamira County was selected using purposive sampling since it has same characteristics just like any other County in Kenya. The study was conducted for two months between December 2018 and February 2019. Questionnaires with both closed and open-ended questions were used to obtain information from the 180 caregivers involved in the study. Approval to conduct the study was obtained from Kenyatta University Graduate School. Ethical clearance was obtained from Kenyatta University Ethics and Review Committee. Research permit was sought from national commission for science, technology and innovation (NACOSTI). Further approval was sought from ethics and review committee in Nyamira County. The study sought informed consent from the respondents before proceeding with the research. Statistical package for social sciences (SPSS) version 23 was used for the analysis of the quantitative data collected and chi-square test was used to test the relationship between the dependent and independent variables and the relationship was deemed significant when p value was less than 0.05 at 95% confidence level. Content analysis was done for qualitative data and similar categories of data arranged into sub-themes and themes. Results were then presented as narrations or direct quotes which were then triangulated with the quantitative data.

RESULTS

Socio-demographic and economic characteristics of the study participants

The study results revealed that the general mean age of the caregivers was 26 years, minimum age 15 years while maximum age was 38 years with majority of them aged 26 years (Table 1). Study results showed that 100% of the caregivers were female (Table 2). More than 80% of the caregivers were married (Table 2). The study results showed that 38.9% of the caregivers were housewives, 38.3% peasant farmers, 16.1% business persons and 6.7% employed (Table 2). About 43.3% of the caregivers earned a monthly income of less than KSh. 5 000 and 37.2% of them were dependents (Table 2). About 50.6% of the children were female and 49.4% male (Table 2).

Table 1: Caregivers' age (n=180)

Variable	Count
Age (years)	
Mean	26
Mode	26
Minimum	15
Maximum	38

Accessibility to health facility and place of residence of caregivers

Most of the caregivers (62.2%) accessed their health facilities within a radius of between 2-5 km (Table 3). Majority of the study participants (63.3%) resided in their rural areas (Table 3).

Table 2: Socio-demographic and economic characteristics of the study participants (n=180).

Variable	Frequency (N)	Percentage (%)
Gender		
Female	180	100
Education level		
Primary	66	36.7
Secondary	78	43.3
Tertiary/college	36	20
Marital status		
Single	21	11.7
Married	159	88.3
Occupation		
Peasant farmer	69	38.3
Housewife	70	38.9

Continued.

Variable	Frequency (N)	Percentage (%)
Business person	29	16.1
Employed	12	6.7
Monthly income (in KSh.)		
<5000	78	43.3
5000-10000	21	11.7
>10000	15	8.3
None	67	37.2
Gender of child		
Female	91	50.6
Male	89	49.4

Table 3: Place of residence of caregivers and accessibility to health facility (n=180).

Variable	Frequency (N)	Percentage (%)
Distance from caregivers' residence to health facility (km)		
<2	45	25
2-5	112	62.2
>5	23	12.8
Place of residence of caregivers		
Rural	114	63.3
Urban	66	36.7

Level of uptake of routine growth monitoring

Since this was a health facility-based study done at the 9th month when children were receiving measles 1 vaccine, all the caregivers (100%) had taken their children for regular growth monitoring at least once.

Proportion of caregivers who consistently took their children for RGM in the last eight months

The study revealed that only 21.11% of the caregivers who consistently took their children for RGM. About 78.9% of the caregivers were not consistent in taking their children for RGM (Figure 1).

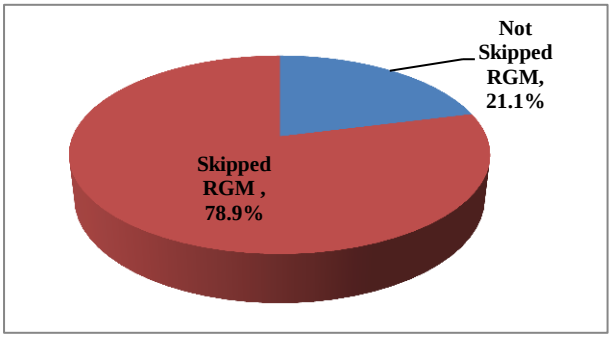

Figure 1: Proportion of caregivers who took their children for RGM for the last eight months.

Proportion of caregivers who skipped RGM visits for the last eight months

The study revealed that 78.9% of caregivers skipped RGM visits for their children in the last eight months (Figure 1). The study established that there was no significant association between; caregivers' level of education and skipping RGM visits ((χ^2=9.132; df=4; p=0.052); caregivers' occupation and skipping RGM visits (χ^2=6.706; df=3; p=0.081); caregivers' monthly income and skipping RGM visits (χ^2=0.492; df=4; p=0.941); distance from caregivers' place of residence and skipping RGM visits (χ^2=0.514; df=2; p=0.774) (Table 4).

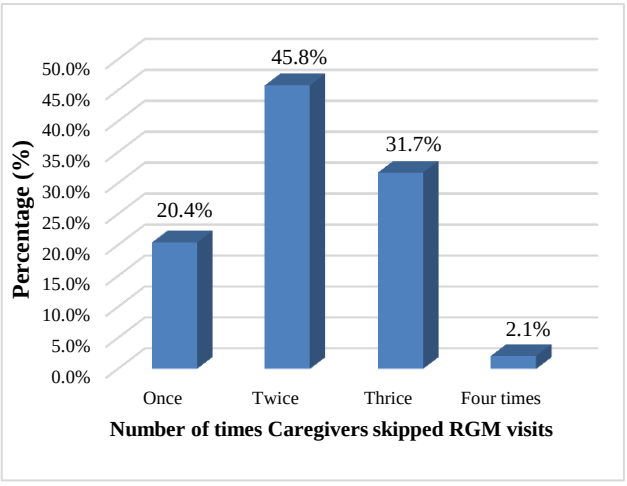

Figure 2: Number of times caregivers skipped RGM visits for the last eight months.

Number of times caregivers skipped RGM visits for the last eight months

When the caregivers who had skipped RGM for their children were asked to indicate the number of times they had skipped RGM visits for the last 8 months, 45.8%

reported to have skipped twice, 31.7% thrice, 20.4% once and 2.1% four times (Figure 2). The study established that there was no significant association between; caregivers' level of education and the number of times they skipped RGM visits (p=0.064); caregivers' marital status and the number of times they skipped RGM visits (χ^2=6.041; df=3; p=0.099); caregivers' occupation and the number of times they skipped RGM visits (p=0.882); caregivers' monthly income and the number of times they skipped (p=0.063); distance from caregivers' place of residence and the number of times they skipped RGM visits (p=0.442); caregivers' place of residence and the number of times they skipped RGM visits (χ^2=3.381; df=3; p=0.330); gender of the child and the number of times they skipped RGM visits (χ^2=4.592; df=3; p=0.208) (Table 5).

Caregivers' reasons for skipping RGM

The study revealed several reasons why caregivers skipped RGM visits. Majority of the caregivers (91.5%) said that they forgot "To Come Again" (TCA) dates. Other reasons given included; children were not sick to be taken for RGM visits (77.5%), Healthcare provider said there was no need since no vaccine was scheduled (67.6%) among other reasons (Table 6).

Table 4: Relationship between socio-demographic, economic characteristics of the study participants and skipping RGM visits.

Socio-demographic/economic characteristics	Skipping RGM visits		Significance
	Yes	No	
	N (%)	N (%)	
Education level			
Primary	54 (81.8)	12 (18.2)	χ^2=9.132; df=4; p=0.052
Secondary	66 (84.6)	12 (15.4)	
Tertiary/college	22 (61.1)	14 (38.9)	
Occupation			
Peasant farmer	55 (79.7)	14 (20.3)	χ^2=6.706; df=3; p=0.081
Housewife	58 (82.9)	12 (17.1)	
Business person	23 (79.3)	6 (20.7)	
Employed	6 (50)	6 (50)	
Monthly income (in KSh.)			
<5000	61 (79.2)	17 (22.1)	χ^2=0.492; df=4; p=0.941
5000-10000	16 (76.2)	5 (23.8)	
>10000	11 (73.3)	4 (26.7)	
None	54 (80.6)	13 (19.4)	
Distance from caregivers' residence to health facility (km)			
<2	34 (75.6)	11 (24.4)	χ^2=0.514; df=2; p=0.774
2-5	89 (79.5)	23 (20.5)	
>5	19 (82.6)	4 (17.4)	

Table 5: Relationship between socio-demographic, economic characteristics of the study participants and the number of times caregivers skipped RGM visits.

Socio-demographic/ economic characteristics	Number of times caregivers skipped RGM visits				Significance
	Once	Twice	Thrice	Four times	
	N (%)	N (%)	N (%)	N (%)	
Education level					
Primary	5 (9.3)	30 (55.6)	17 (31.5)	2 (3.7)	p=0.064*
Secondary	18 (27.3)	29 (43.9)	18 (27.3)	18 (28.3)	
Tertiary/college	6 (27.3)	6 (27.3)	10 (45.5)	0 (0)	
Occupation					
Peasant farmer	11 (20)	24 (43.6)	19 (34.5)	1 (1.8)	p=0.882*
Housewife	11 (19)	28 (48.3)	17 (29.3)	2 (3.4)	
Business person	5 (2.2)	12 (52.2)	6 (26.1)	0 (0)	
Employed	2 (33.3)	1 (16.7)	3 (50)	0 (0)	
Marital status					
Single	0 (0)	10 (58.8)	6 (35.3)	1 (5.9)	
Married	29 (23.2)	55 (44)	39 (31.2)	2 (1.6)	

Continued.

Socio-demographic/ economic characteristics	Number of times caregivers skipped RGM visits				Significance
	Once	Twice	Thrice	Four times	
	N (%)	N (%)	N (%)	N (%)	
Monthly income (in KSh.)					
<5000	13 (21.3)	30 (49.2)	15(24.6)	3 (4.9)	
5000-10000	0 (0)	11(68.8)	5 (31.2)	0 (0)	p=0.063*
>10000	4 (36.4)	2 (18.2)	5 (45.5)	0 (0)	
None	12 (22.2)	22 (40.7)	20 (37)	0 (0)	
Distance from caregivers' residence to health facility (km)					
<2	6 (17.6)	16 (47.1)	12 (35.3)	0 (0)	p=0.442*
2-5	20 (22.7)	40 (45.5)	28 (31.8)	1 (1.1)	
>5	3 (15.8)	9 (47.4)	5 (26.3)	2 (10.5)	
Caregivers' place of residence					
Rural	22 (23.2)	40 (42.1)	30 (31.2)	3 (3.2)	χ^2=3.381; df=3; p=0.330
Urban	7 (14.9)	25 (53.2)	15 (31.9)	0 (0)	
Gender of child					
Male	16 (22.9)	29 (41.4)	25 (35.7)	0 (0)	χ^2=4.592; df=3; p=0.208
Female	13 (18.1)	36 (50)	20 (27.8)	3 (4.2)	

*Fisher exact test.

Table 6: Caregivers' reasons for skipping RGM visits for the last eight months (n=142).

Reasons for skipping RGM visits	Frequency (N)	Percentage (%)
Forgot TCA	130	91.5
My child was not sick	110	77.5
Healthcare provider said there was no need since no vaccine was scheduled	96	67.6
Healthcare provider did not say	90	63.8
I did not find reason for doing it	84	59.2
I had a busy schedule at home/work	80	56.3
Health facility is far	60	42.3
Striking nurses	56	39.4
My partner is not supportive	45	31.7
Healthcare provider sent me back because I went a day prior to TCA	15	10.6

DISCUSSION

Socio-demographic characteristics of the study participants

Overall, a total of 180 caregivers were enrolled into the study. The study results revealed that majority of the caregivers were aged 26 years. This is consistent to a similar study done in Nyamira County, Kenya which found out that majority of the mothers of children 10-59 months who attended RGM were aged between 21-26 years.[10] This study found out that all the caregivers (100%) who participated in the study were female. This finding agrees to another study done in Ethiopia which revealed that 92.3% of the caregivers were biological mothers of the children.[11] The study revealed that majority (88.3%) of the caregivers was married. This agrees to the findings of previous studies which found out that more than half of the mothers who take their children for RGM visits are married.[10-12] These findings could be because partners in marriage tend to encourage one another to take their children for monthly growth monitoring.

Uptake of RGM among caregivers of children aged below 9 months

The study revealed low level of uptake of RGM with only 21.1% of the caregivers taking their children for RGM monthly. This finding is consistent to another study conducted in Ghana which found out that there was low level in using growth monitoring services with only 13.6% of the caregivers reported to have attended child welfare clinic for growth monitoring as recommended.[13] In Europe, only 29% of respondents reported to have used WHO recommended reference standard growth charts.[14] A similar study conducted in Kiambu County, Kenya found out that there was low utilization of growth monitoring services among children aged 12-59 months.[8] This study found out various reasons why caregivers skipped RGM visits including; child was not sick (77.5%), health providers discouraging them from taking their children for RGM visits since there was no vaccine scheduled (67.6%) and never told by their Health providers that they should take their children for RGM monthly (63.8%). This concurs to the findings of another study done in the rural areas of Ethiopia in which

caregivers gave various reasons on why they missed growth monitoring sessions as scheduled in their children's clinic cards including: workload, child not sick to seek care and health workers not telling them to attend these sessions.[5] A similar study conducted in Zambia also revealed that growth monitoring had performed poorly because of various reasons such as weak monitoring and supervision, lack of motivational package attached to the growth monitoring programme and poor practices among health workers.[15]

CONCLUSION

The study found out that uptake of RGM was low with only 21.1% of the caregivers taking their children for RGM. One of the major factors contributing to low uptake of RGM was caregivers forgetting TCA dates. Policy makers and implementers in the health sector should formulate relevant policies especially targeted at reminding caregivers on monthly RGM for their children aged below 9 months.

ACKNOWLEDGEMENTS

Our special gratitude goes to all persons who worked with us to ensure success of this work. We are greatly indebted to the Management of Nyamira County, Ministry of Health for allowing us to collect data from the various health facilities in the County and all the caregivers who accepted to be part and parcel of the study giving us sincere information making the study possible. We thank you all.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Nyang'echi EN, Yitambe A, Rucha KK, Osero JOS.Uptake of routine growth monitoring among children under 9 months in Nyamira County, Kenya. Int J Community Med Public Health 2020;7:22-7.