Health Facility Factors That Influence The Use Of Growth Monitoring Clinic Services By Children Aged Between Twelve And Fifty Nine Months In Rural Area, Machakos County, Kenya

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Abstract: This cross-sectional descriptive study assessed the health facility factors that influence the use of growth monitoring clinic services by children aged between twelve and fifty nine months in rural area in Machakos County, Kenya. Simple random sampling was used to obtain 384 children aged between twelve and fifty nine months to participate in the study. The care givers who brought the children to the health facility to seek heath services responded to the questionnaires. Data was analyzed using Statistical Package for Social Sciences (SPSS) computer packages. Results showed that use of growth monitoring clinic services declined as children grew order. Care givers had low awareness on health facility categories that offered growth monitoring clinic services and maximum age that children under five years old were expected to use growth monitoring clinic services. Results also revealed that minimal health education had ever been given by health care providers to care givers about the importance need to take older children aged between twelve and fifty nine months for growth monitoring clinic services. Majority of the respondents said they used Kangundo Sub-County hospital to seek health services because all services were available. In addition, the respondents said use of growth monitoring clinic services by children aged between twelve and fifty-nine months reduced as children grew older and by the time they are 59 months old only about 23% attend clinic. However, they were quick to say older children were usually taken to the clinic for treatment and not for growth monitoring as the researcher expected. Chi- Square test for significance was x^2 = 9.708, $df = 9$ and p - value 0.375. From the findings of this study, the conclusion was that use of growth monitoring clinic services by children aged between twelve and fifty-nine months reduced gradually as the children grew older as a result of lack of awareness on health facilities that offer growth monitoring clinic services whether older children need clinic services and the availability of all health services in various levels of public health facilities.

Keywords: Health facility, clinic services, growth monitoring, children aged 12 to 59 months, health care provider.

I. INTRODUCTION

Children aged below five years are vulnerable to many health problems ranging from genetic conditions, birth injuries, accidents, nutritional deficiencies and infections. Many children aged below five years die of various childhood illnesses such as Acute Respiratory Infections (ARI), diarrhea and malaria among other childhood illnesses (KNBS, 2015).

The survivors suffer sequels of childhood illnesses such as deafness, blindness and stunted growth for the rest of their lives. Children are born without the ability to take care of themselves. They depend entirely on the care givers and the government to meet their basic needs including health health for their survival (WHO, 2005).

Growth monitoring refers to the strategy that is used globally to assess the health of children below five years of

age (WHO, 2005). Growth monitoring is carried out periodically on children below five years of age in the child health clinic. Weight and sometimes height/length are the anthropometric measurements that are done in the clinic to assess the growth of children below five years of age. The weight and height/ length are usually charted, recorded and plotted in the child health card of each child. Growth monitoring strategy is also used to assess development and acquisition of expected behavior in relation to the age of an individual child based on the World Health Organization standards (WHO, 2007. The health care provider uses the findings to provide interventions and to empower care givers on child care according to need (Child Health Care 2015). Past researches revealed a decline in the use of growth monitoring clinic service by children below five years of age. Hardly any information was available on the children aged 12 to59 months. This study assessed the factors that influenced use of growth monitoring clinic services by children aged 12 to 59 months in rural area in Machakos County, Kenya.

RESEARCH OBJECTIVE

To assess the health facility factors that influenced use of growth monitoring clinic services in rural area, in Machakos County, Kenya.

II. LITERATURE REVIEW

Growth monitory is progressive, regular measurement and recording/charting of weight and sometimes length/height, determining the body size, normal growth, stunting, wasting and underweight/overweight, assessment of acquisition of skills and behaviors based on WHO standards and provision of interventions according to need among children under five years of age (Child Health Care, 2014).

Implementation of growth monitoring strategy was introduced in Africa, Nigeria-West Africa by doctor David Morley a British Pediatrician in 1950s (Morley and Margaret Woodland, 1987). Since that time, growth monitoring has been implemented in many countries globally (WHO, 2011). Kenya embraced the practices of growth monitoring to assess the growth of children under five years ideally monthly (MOH, 2007). Growth monitoring is useful in ensuring that children remain healthy, in identifying the common signs and symptoms of malnutrition, childhood illnesses and their complications; in providing intervention to care givers by health care providers according to needs (Journal of Health Population and Nutrition, 2014).

In Kenya, the Second National Health Sector Strategic Plan for the period 2005 to 2010 that was extended to 2012 (NHSSP II) contains the Essential Package for Health (KEPH) which defines six life cycles or cohorts (stages of growth and development), which served as the basis for planning, implementing and evaluating health programs in Kenya including growth monitoring of children below five years of age. The six cohorts included the early childhood (2 weeks to five years) old children; the subject matter of this research (GOK, 2005). These principles of this plan guided the planning of the Third National Health Sector Strategic Plan

(NHSSP III) for the period 2013 to 2017 (GOK 2012). During the implementation of NHSSP II, the Ministry of Health conducted a research which revealed factors that influenced the use of outpatient department (MOH, 2008). Since the current national health sector plan is base on the previous plan and that during the implementation of the previous plan a decline in utilization of growth monitoring clinic services, there was need to assess whether factors that influenced use of outpatients department were applicable on the use of growth monitoring clinic services in Machakos County.

Growth monitoring health service services were offered to children below five years of age in all public health facilities in urban and rural areas daily for free, yet 52% of children did not use growth monitoring clinic services and little or no information existed to explain whether children aged twelve to fifty- nine months used grow th monitoring clinic services or not. This research assessed health facility factors that influenced use of growth monitoring clinic services by children aged between twelve and fifty- nine months in Machakos County.

III. RESEARCH METHODOLOGY

The research design was cross-sectional descriptive study. The dependent variables constituted use of growth monitoring clinic services while independent variables constituted health facility, Socio and demographic factors as well as care givers. Children aged between twelve and fifty- nine months were study subjects and the respondents were the care givers who brought the children to the clinic to seek health care during the research data collection period. The sample Size was determined in accordance to Fisher *et al.,* 1998. Simple random sampling was used to sample the study area Kangundo Sub- County in Machakos County, Kenya (fig. 1). The study assessed health facility factors influencing the use of growth monitoring clinic services by children aged between twelve and fifty- nine months in rural Kangundo Sub- County, Machakos County, Kenya. Questionnaires were administered on a sample size of 384 subjects to collect primary data from the respondents. Data was analyzed using Statistical Package for Social Sciences (SPSS).
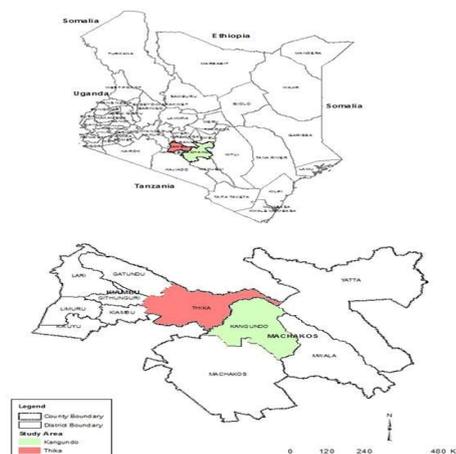

Figure 1: Map of the study area

IV. RESULTS

A. SOCIO- DEMOGRAPHIC CHARACTERISTICS OF THE CHILDREN AND CAREGIVERS

In Kangundo Sub-County, 181 (47.1%) children aged 12 to 59 months were males and 203(52.9%) children were males among the children aged 12 to 59 months .Majority 254(66.1%) children who participated in the study in Kangundo Sub- County were aged 12-35 months and minority 130(33.9%) children were aged 36-59 months (table 1).

Three hundred and forty three (89.3%) respondents indicated they were mothers to the children aged12 to 59 months, 22(5.7%) respondents indicated they were fathers, 8(2.1) were grandmothers, 3(0.8%) were grandfathers and 8(2.1%) were hired caregivers in Kangundo Sub-County (table 1).

Two hundred and sixteen (56.3%) respondents indicated the fathers of the children provided for the upkeep of the children aged 12 to 59 months, 121(31.5%) respondents indicated the mothers, and 47(12.2%) respondents indicated both the father and the mother provided for the upkeep of the children in Kangundo Sub-County (table 1).

Twenty eight (7.3%) respondents indicated they were aged <20 years, 286 (74.5%) respondents were aged 21-30 years, 61(15.9%) respondents were aged 31-40 years and 9 (2.3%) respondents were aged 41-50 years in Kangundo County (fig..2).

Variables	Study location
Sex of study population	Kangundo Sub-County (n=384)
Male	181(47.1%)
Female	203(52.9%)
TOTAL	384(100%)
Age of study population	
12-23 months	142(37%)
24-35 months	112(29.2%)
36-47 months	76(19.8%)
48-59 months	54(14.1%)
TOTAL	384(100%)
Relationship between the child and respondent	
Mother	343(89.3%)
Father	22(5.7%)
Grandmother	8(2.1%)
Grandfathers	3(0.8%)
Hired Caregivers	8(2.1%)
TOTAL	384(100%)
Provider for the upkeep of the child	
Fathers	216(56.3%)
Mothers	121(31.5%)
Father and Mother	47(12.2%)
TOTAL	384(100%)
Sex of those who took child to clinic	
Females	370(96.4%)
Males	14(3.6%)

TOTAL	384(100%)

Table 1 Socio-demographic characteristics of children aged 12 to 59 months in and Kangundo Sub-Counties
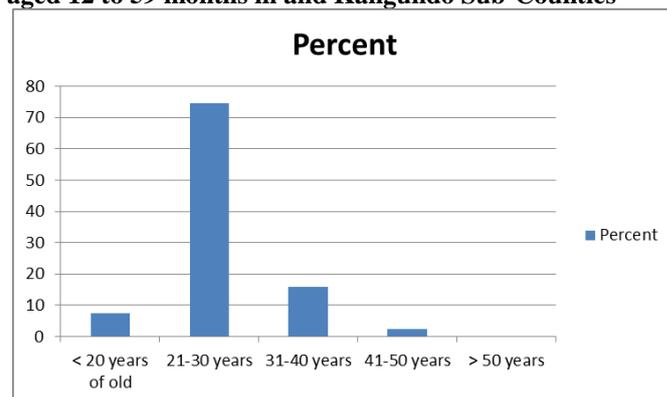

Figure 2: Respondents age in complete years

One hundred and fifty (39.1%) respondents indicated they had primary education 171 (44.5%) respondents had secondary education, 56(14.6%) respondent had college education and 4(1.0%) respondents had university education. Only 3(0.8%) respondents had no formal education in Kangundo Sub-County (table 3).

Thirty, (7.8%) respondents indicated they were teachers, 128(33.3%) were business persons, 150(39.1 %) were domestic workers and 76(19.8%) respondents were in other occupations such as Saloonists and M-Pesa shop attendants in Kangundo Sub-County (table 4)

	Study locations	
	Kangundo Sub-County (n=384	
Respondents level of Education	Frequency	Percent
Primary education	150	39.1
Secondary education	171	44.5
College education	56	14.6
University education	4	1.0
No formal education	3	0.8
TOTAL	384	100

Table 4.3: Respondent highest level of education

	Study locations	
	Kangundo Sub-County (n=384)	
Respondents occupations	Frequency	Percent
Teacher	30	7.8
Business	128	33.3
Domestic work	150	39.1
Others- Saloonists	76	19. 8
TOTAL	384	100

Table 4: Respondents occupations

Three hundred and thirty seven (87.1%) respondents indicated they were married, 30(7.8%) respondents were single, 11(2.7%) respondents were separated and 6(1.6%) respondents indicated they were divorced in Kangundo Sub-County (fig 3).

Three hundred and fifty six (92.7%) respondents indicated they were Christians while 28 (7.3%) indicated they were Muslims in Kangundo Sub-County (fig.4).
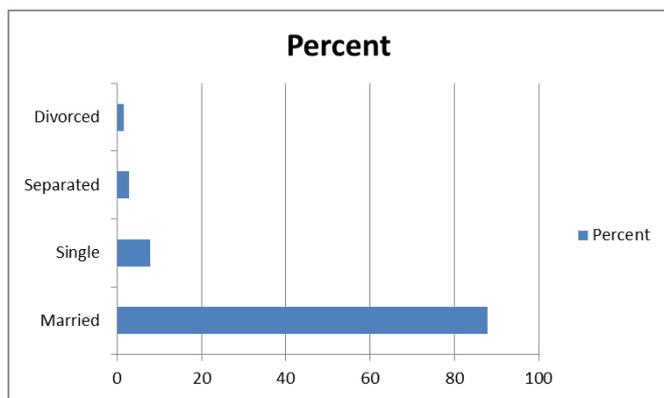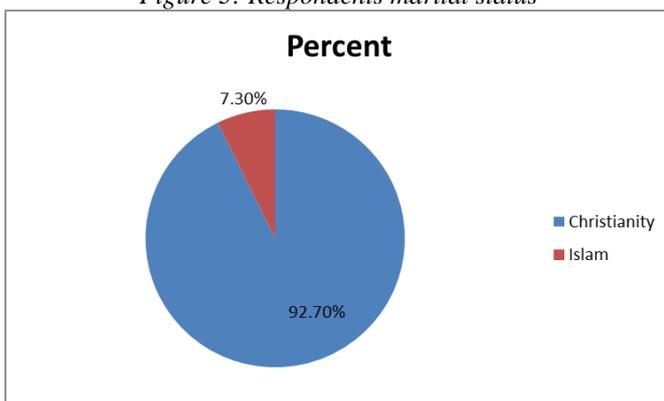
Figure 3: Respondents marital status

Figure 4: Respondent religion

B. AWARENESS AND USE OF GROWTH MONITORING CLINIC SERVICES

Growth monitoring services were offered to children below five years of age in all levels of public health facilities. Respondent knowledge on availability of growth monitoring clinic services in various levels of public health facilities was assessed and various responses were obtained in Kangundo Sub –County (table 4.7)

Twenty two (5.7%) respondents indicated growth monitoring services were offered in the sub- county hospital while 362(94.3%) respondents indicated they did not know whether growth monitoring clinic services were offered to children aged 12 to 59 months in Kangundo Sub- County Hospital. Twelve (3.1%) respondents indicated growth monitoring clinic services where offered in health, while 372 (96.9%) respondents indicated they did not know whether growth monitoring clinic services were offered to children aged 12 to 59 months in the health centre in Kangundo Sub-County. Seventeen (4.4%) respondents indicated growth monitoring clinic services were offered in the dispensary while 367 (95.6 %) respondents indicated they did not know whether growth monitoring clinic services were offered to children aged 12 to 59 months in the dispensary in Kangundo Sub-County (table 3).

Kangundo Sub-County (n=384)	Services were offered	Did not know	Total
Sub- County hospital	22(5.7%)	362(94.3%)	384(100%)
Health centre	12(3.1%)	372(96.9%)	384(100%)
Dispensaries	17(4.4%)	367(95.6%)	384(100%)

Table 3: Awareness of health facilities that offered growth monitoring

All children below five years of age were expected to attend clinic for growth monitoring monthly or as per health care provider instruction until they attained five years age. Respondents were asked to give an estimate of the percentage of children aged 12 to 59 months using growth monitoring clinic services to assess the level of aware on how well they felt they used growth monitoring clinic services in Kangundo Sub- County.

Two hundred and sixty one (68%) respondents indicated <20% of children aged 12 – 23 months attended clinic for growth monitoring clinic services, 24(6.3%) respondents indicated 20 – 40% children age 12 – 23 months attended clinic for growth monitoring, 41(10.7%) respondents indicated 41 – 60% children aged 12 – 23 months attended clinic for growth monitoring, 58(15%) respondents indicated 61 – 80% children aged 12 – 23 months attended clinic for growth monitoring and no respondent indicated more than 80% children aged 12-23 months attended clinic for growth services in Kangundo Sub-County (table 4).

Three hundred and fifty two (91.7%) respondents indicated <20 % children aged 24-35 months attended clinic for growth monitoring clinic services, 10 (2.6%) respondent indicated 21-40% children aged 24-35 months attended clinic for growth- monitoring, 14(3.6%) respondents indicated 41-60% children aged 24-35 months attended clinic for growth-monitoring, 8(2.1%) respondents indicated 61-8o% children attended clinic for growth monitoring and no respondent indicated more than 80% children aged 24-35 months attended clinic for growth monitoring clinic services in Kangundo Sub-County (table 4).

Three hundred and seventy seven (98.2%) respondents indicated <20 % children aged 36-47 attended clinic for growth monitoring clinic services, 7(1.8%) respondents indicated 21-40% children aged 36-47 attended clinic for growth monitoring and no respondent indicated more than 40% children aged 12 to 59 months attended clinic for growth monitoring clinic services in Kangundo Sub- County (table 4.).

Three hundred seventy nine (98.7%) respondents indicated <20% children aged 48-59 months attended clinic for growth monitoring services, 5(1.3%) respondents indicated 21-40 % of children aged 48-59 months attended clinic for growth monitoring and no respondent indicated more than 40% children aged 48-59 months attended clinic for growth monitoring clinic services in Kangundo Sub- County (table 4).

	Study Location	
	Kangundo Sub-County (n=384)	
Respondent opinion on % of children age12 to 59 months utilizing growth monitoring clinic services	**Frequency**	**Percent**
Children aged 12-23 months utilizing growth-monitoring clinic services		
< 20%	261	68
21-40%	24	6.3
41-60%	41	10.7

61-80%	58	15
81-100%	0	0
TOTAL	**384**	**100**
Children aged 24-35 months utilizing growth-monitoring clinic services		
< 20%	352	91.7
21-40%	10	2.6
41-60%	14	3.6
61-80%	8	2.1
81-100%	0	0.0
TOTAL	**384**	**100**
Children aged 36 – 47 months utilizing growth monitoring clinic services		
< 20%	377	98.2
21-40%	7	1.8
TOTAL	**384**	**100**
Children aged 48-59 months utilizing growth monitoring clinic services		
< 20%	379	98.7
21-40%	5	1.3
TOTAL	**384**	**100**

Table 4: Respondent awareness on use of growth- monitoring clinic services by children aged 12 to59 months

All children below five years of age were expected to use growth monitoring clinic services until they were five years old (MOH, 2007). Respondents were asked to state the maximum age at which children below five years of age should use growth monitoring clinic services to assess their awareness that children aged 12 to 59 months should attend clinic for growth monitoring until they were five years old.

Majority two hundred and fifty five 255(66.4%) respondents indicated children should stop using growth monitoring clinic services at <12months of age, 40(10.5%) indicated at 12 months, 49(12.8% indicated at 24 months, 18(4.6) indicated at 36 months, 3(0.8%) indicated at 48 months and 19(5.0%) indicated at 60 month of age in Kangundo Sub-County (table 5).

Maximum age at which children should use growth monitoring clinic services	Study Locations Kangundo Sub-County (n=384)	
	Frequency	**Percent**
< 12months	255	66.4
12 months	40	10.4
24 months	49	12.8
36 months	18	4.6
48 months	3	0.8
60 months	19	5.0
TOTAL	**384**	**100**

Table 5: Maximum age at which children should use growth monitoring clinic service

The 384(100%) respondents were asked to state the best health education topic they had ever been given on child care. Three hundred and thirty six (87.5%)respondents indicated nutrition, six (1.6%) indicated malaria prevention, 30 (7.8%) indicated family planning, 1(0.3%) indicated oral rehydration and only 5(1.3%) respondents indicated they had ever been given health education on growth monitoring in their preferred child health clinic in Kangundo Sub- County (table 6).

Study Sub- county	Kangundo Sub- County	
Best health education on child health care	**Frequency**	**Percentage**
Nutrition	336	87.5
Others example family planning	30	7.8
Malaria prevention	6	1.6
immunization	6	1.6
Oral rehydration	1	0.3
Growth monitoring	5	1.3%
TOTAL	**384**	**100%**

Table 6: Best health education topic ever give on child care in Kangundo Sub- County

C. RELATIONSHIP BETWEEN HEALTH FACILITY FACTORS AND USE OF PREFERRED CLINIC FOR GROWTH MONITORING

In Kangundo Sub-County three hundred and eighty four (384) respondents were asked to give the reasons why they preferred taking children aged 12 – 59 months to the preferred clinic. The responses were; the facility was near their home 114 (29.7%), services were always available 248 (64.6%), facility was clean 11 (2.7%) and clinic staff were kind 10 (2.7%). These responses were cross tabulated with use of growth monitoring clinic services. Majority 248 used the preferred facility because all services were available followed by facility was near their homes. Chi-square test was done to determine the relationship between the reasons and use of clinic services. The results indicated x^2 = 70.275, df = 2, p – value= 0.001. This shows there was relationship between the reasons of and the use of preferred clinic services by children aged 12 – 59 months in Kangundo Sub- County (table 4.18). There was association, null hypothesis was accepted.

In Kangundo Sub-County, three hundred and eighty four (384) respondents were asked to rate the importance of taking children aged 12 – 59 months to clinic. The majority of respondents 275 (71.6%)) indicated taking children of this age group to clinic for growth monitoring was important while the minority indicated it was very important and not important. These responses were cross- tabulated with use and non-use of growth clinic services. Chi- squire test results showed no relationship between the rating of importance taking children to and use of growth monitoring clinic services x^2 =5.522 df =2 p=0.854. The conclusion was that there was no relationship between the rating of importance of taking children to and use of growth monitoring clinic services. (table4.18).

Variable	Category	Used growth monitoring services	Did not use growth monitoring services	χ^2 Test results
Health facility factors	Facility is near home	114(29.7%)	270(70.3%)	χ^2 =4.230
	Service were always available	248 (64.6%)	136(35.4%)	
	Facility is clean	11 (2.8%)	373(97.1)	df=3
	Clinic staff is kind	10 (2.6%)	374(97.4%)	P=0.646
Rating of	Very important	10(2.6%)	374(97.4%)	χ^2=5.522

importance of taking children to clinic	Important	27 (71.6%)	109(28.4%)	df=2 P=0.854

Table 7: Relationship between health facility factors and use of growth monitoring clinic services Kangundo Sub County (n=384)

V. DISCUSSION

The research assessed the health facility factors that influenced use of growth monitoring clinic services by children aged twelve and fifty- nine months in Kangundo Sub-County in Machakos County, Kenya. The findings revealed that the use of growth monitoring clinic services by children aged twelve and fifty- nine months old was low due to health facility factors.

Growth monitoring services were offered to children below five years of age in all levels of public health facilities at no charge. The findings of this research revealed that a large proportion of the respondents/caregivers indicated they did not know whether growth monitoring clinic services were offered to children aged 12 to 59 months in different level of public health facilities. Three hundred and sixty two (94.3%) respondents indicated they did not know whether growth monitoring clinic services were offered to children aged 12 to 59 months in Kangundo Sub- County Hospital. Three hundred and seventy two (96.9%) respondents indicated they did not know whether growth monitoring clinic services were offered to children aged 12 to 59 months in the health centre and 367(95.6%) respondents indicated they did not know whether growth monitoring clinic services were offered to children aged twelve and fifty- nine months in the dispensary in Kangundo Sub-County.

This finding pointed at lack of awareness about availability of growth monitoring clinic services in all levels of public health facilities as a negative influence to the use of growth monitoring clinic services by children aged 12 to 59 months in Kangundo Sub- County. This finding was in agreement with critics of growth monitoring who argued that growth monitoring and promotion does not work because it is not understood and providers rarely do it well (Magasarian, UNICEF, 2007). Hence, since the health care providers did not understand how growth monitoring operated and rarely implemented it well, they would not be expected to help care givers to use growth monitoring clinic services well.

In addition this research revealed children would use the clinic services if they were sure all services were available in the health facility. This finding indicated that caregivers would not use the health facility if they did not know they would get a variety of health services. This finding was in agreement with findings of an earlier research that patient would use outpatients hospital services if all services were available (MOH, 2008).

The results of this research and those of 2009 shed light on decline in the use of growth monitoring clinic services and appear to suggest that Kenya is developing and sustaining a trend in which children aged 12 to 59 months sought health when they were sick and that is the only time when growth monitoring is carried out in a health facility by a trained health care provider (MOPHS, 2006, 2010. This practice should be discouraged. Care givers should be encouraged to adopt healthy seeking behavior to promote health rather than to cure illnesses.

In the view of the researcher the responses were informative and they were an eye opener to the health care providers who plan and implement health care services without the input of the stake holders. The findings of this research is supported by Ministry of Health that Child Survival programme planning and implementation should be anchored on evidence based research findings to make them relevant to the target population (MOH, 2008). This fact was echoed in the devolution of health sector services document (MOH, 2012).

VI. CONCLUSIONS

✓ The growth monitoring clinic services were under utilized by children aged 12 to 59 months in rural area in Machakos County, Kenya.
✓ The major health facility causes of under utilization were lack of awareness of health facilities that provided the growth monitoring clinic services, maximum age that children should use growth monitoring and availability all health services for children aged 12 to 59 months in various levels of public health facilities in rural Machakos County.

VII. RECOMMENDATIONS

Health care providers in growth monitoring clinics should be re-orientated and they should implement growth monitoring to promote and increase the use of growth monitoring clinic services by children aged 12 to 59 months by giving health education to care givers on health facilities and availability that give growth monitoring services in Kangundo Su-County.

VIII. FURTHER RESEARCH

✓ Machakos County Government, and subsequently the Kangundo Sub- County child health policies contents should be reviewed to assess the extent to which growth monitoring to children aged 12 to 59 months is implemented. The research will form the baseline to re-organize growth monitoring services in Machakos County.
✓ Knowledge, Attitude and Practice (KAP) study should be done on growth monitoring clinic services health care providers to assess health facility factors that influence implementation of growth monitoring clinic services for children aged 12 to 59 months. The findings will form the baseline to re- organize, equip and staff/re- orientate health care providers among other aspects of growth monitoring clinic services in Machakos County.

REFERENCES

[1] Biney Gibney, Editor. (2004).Nutrition and Metabolism, The Nutrition Society Text Book services. Blackwell Science Replica Press PVT Ltd Kundli, India pp 112 – 126

[2] Datta Parul (2009). Paediatric Nursing. 2nd edition. Jaypee Brothers Medical Publishers, LTD St Louis, USA Pp 115-140, 195-198.

[3] Fisher A.A., Laing J.E., Stockel J.E. and Townsend J.W. (1998) Hand book for Family Planning Operations Research Design. Population Council.

[4] Government of Kenya (2005), The Second National Health Sector Strategic Plan. NHSSP II – 2005 – 2010 – 2012. Ministry of Health, Nairobi, Kenya – Pp 16-22.

[5] Government of Kenya (2012), The Third National Health Sector Strategic Plan. NHSSP II – 2013 – 2017. Ministry of Health, Nairobi, Kenya – Pp 1-20.

[6] Kenya National Bureau of Statistics (2010) Kenya Demographic and Health Survey. Kenya Bureau of statistics, Nairobi, Kenya Pp127-173.

[7] Kenya National Bureau of Statistics (2015) Kenya Demographic and Health Survey. Kenya Bureau of statistics, Nairobi, Kenya- Pp 35- 38.

[8] Kenya National Bureau of Statistics (2010), 2009 Kenya Population and Housing Census, Republic of Kenya, Nairobi Pp 22-23.

[9] Ministry of Health (2006) Integrated Management of Childhood Illnesses (IMCI) Health Survey Report. Ministry of Health Nairobi, Kenya pp 1-148.

[10] Ministry of Health (2006) Integrated Management of Childhood Illnesses (IMCI) Health Survey Report. Ministry of Health Nairobi, Kenya pp 1-120

[11] Ministry of Health (2006) Linking Communities with the health system: The Kenya, essential Package for Health Level I A manual for Training Community Health workers Ministry of Health Nairobi, Kenya PP14-17.

[12] Kenya National Bureau of Statistics (2013) Kenya Facts and Figures-2012 Kenya National Bureau of Statistics, Nairobi, Kenya, P 10.

[13] Kenya National Bureau of Statistics (2014) Kenya Facts and Figures-2013 Kenya National Bureau of Statistics, Nairobi, Kenya, P 28.

[14] Ministry of Medical Services and Ministry of Public Health and Sanitation (2010) Reversing the trends. The Second National Health sector Strategic plan of Kenya Annual Operational plan 6 July 2010 – June 2011 Ministry of Public Health and Sanitation and Ministry of Medical services. Nairobi, Kenya Pp 15 – 22.

[15] Ministry of Public Health and sanitation (2008) Child Survival and Development Strategy 2008 – 2015 Ministry of Public Health and Sanitation Nairobi, Kenya PP 1 – 19.

[16] Morley David and Margaret Woodland (1987) See How They Grow Monitoring Child Growth for Appropriate Care in Developing Countries. English Language Book Society, McMillan Publishers, UK. Pp 16-20.

[17] Moule, Pam and Margaret Goodman (2009) Nursing research An introduction. Sage Publications, LTD, London, P 8.

[18] National Council for Children Services (2010) National Children Policy-2010. National Council for Children Services Nairobi, Kenya Pp 5-6.

[19] Nune Mangasaryan, UNICEF (2011). Growth Monitoring and Promotion: Intervention or Platform for Action UNICEF New York USA P 9.

[20] United Nations International Children Education Fund (2007). Growth Monitoring and Promotion A Forgotten Subject UNICEF, New York, USA

[21] World Health Organisation (2005) Integrated Management of Childhood Illness World Health Organization Geneva, Swaziland. Pp 131-179

[22] World Health Organization (2007) Child Growth Standards World Health Organization Geneva Switzerland Pp 10-24.