

**INTERNATIONAL JOURNAL OF NURSING DIDACTICS****RESEARCH PAPER****Utilization of Integrated Management of Childhood Illnesses for Child health in Western Kenya**

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**Abstract:** Implementation of integrated management of childhood illness (IMCI) in comprehensive and holistic, forms bench mark for fifth birth day celebration for child health, free from Malaria, Pneumonia, Diarrhea, Measles and Malnutrition, which was to be achieved through quality Basic and Post-basic IMCI training, willingness of community uptake and perception, and modifying environmental factors to promote MDG 4, vision 2030 in Western Kenya. Cross-sectional design was explored to establish how above determinants influence IMCI. Mixed methods of data collection, procedure was adopted, in quantitative data, structured questionnaire was used, 235 respondents derived by Fishers formulae as sample size, while qualitative data, Focused Group Discussion (FGD) guides and Key informants interviews (KII) were used by forming groups of 8 to 12 discussants. Observations and transect mapping done in partnership with key stakeholders for quality checks from 4 facilities studied. Study population was well mothers attending / presenting their children below five years in level 1 and 2 facilities in study area, besides stakeholders attached to IMCI. Demographical data were also collected. Showed only 14% of under five child health care covers IMCI program contrary to WHO standard of above 68%, (95% CI 0.9 to 5.5%). Evidence seen from limited number of service providers trained in IMCI concepts, low Community uptake and perception and limited efforts to improve environmental factors for child survival at household level. Similar to results from studies identified noteworthy number of children still affected by Malaria, Pneumonia, Malnutrition, diarrhea and Measles.

**Key words:** **Comprehensive** ability to equip essential drugs for Malaria, Pneumonia, Diarrhea, Measles and Malnutrition holistically, to overcome overlapping disease symptoms and signs **Holistic**, health managing of children below five years from overlapping disease symptoms and signs, by assessing children before prescribing therapy for above conditions, in single turnaround time. **Integrated Management of Childhood Illness** Concept of 5 disease management as a single unit **Vertical program dealing** with individual disease in separate roof **Pull system** Receipts and Supply of drugs on requisitions

**Broad Objective:**

To assess utilization of IMCI training, Community perception and environmental factors Influence, in provision of comprehensive and holistic Child health care in children below five years in Western Kenya.

**Specific Objectives:**

- i. To elucidate how IMCI training influence service provision for under five children in level 2 and 3 public facilities in Western Kenya.
- ii. To establish how environment factors influence IMCI implementation.
- iii. To evaluate how Knowledge, Attitude and Practice (KAP) of population health influence utilization IMCI Kenya.

**Service Providers Training in IMCI program:**

World Bank emphasis on innovative and improved Millennium Development Goals 4 (MDG) in their Global Monitoring reports, (Washington DC, 2004) has main pillar of fifth birth day celebration. Third Millennium Development Goal on child mortality commits nations of good will to reduce child mortality and morbidity by two thirds in 2015. The achievement of these targets requires improved IMCI skills and knowledge of service providers acquired through a standard IMCI training guide lines on exclusive case management of major causes of childhood morbidity and mortality: Malaria, acute respiratory

infection, Diarrhea, Measles and Malnutrition (Boyd, 1996).

According to, (L.Boulanger, 1999) IMCI, training is divided into two parts mainly 11 day residential clinical course and a Follow up at regular work station. The latter courses occur within 4 weeks, of the clinical skills training and are aimed at supporting and ensure that the health workers are put into practice after acquiring knowledge and skills in training. Human resource development enhances skills of service providers and identifies problems based in population health that may hinder the utilization and sustainability of IMCI program, ((MOH, 1999- 2004).

**Pre-Service Training in IMCI Program:**

Following initial experiences in IMCI application in Bungoma and Vihiga counties by GOK in (1997- 2009) results suggest, need for compulsory expansion of Pre-service training in medical colleges has an IMCI module for undergraduate students and interns before postings in Departments of Pediatrics , ((MOH, 1999- 2004). State Governments issue instructions in regard to IMCI utilization by teaching institutions by respective directorates (EL. Arifeen 2004). Studies on management of Malaria in Kenya (Armstrong Schellenberg 2004), and Malaria and diarrhea in Benin (Rowe et al 2001) indicated that service providers with higher pre-service training were less likely to prescribe IMCI recommended treatments whose reasons remain unclear. Hence associated with pre-service training, with

lower adherence to IMCI concepts, by service providers' perceptions, as inferior to IMCI clinical experience and professional judgment

Bellagio Study group (2005) signifies Post basic IMCI training on capacity building on case management, only in facilities with sufficient load of inpatient newborns to provide case material for hand training. Do not select facilities that are not busy because it will not show the correct disease burden in children,(M.Cleason, 2000) .

Service providers, have to be given opportunity to practice on cases in home situations. Therefore at-least 4 visits have to be organized to nearby field areas during their training. This will require proper administrative and logistic arrangements. Class room teaching is also an important component of the training in a place where there is adequate number of class rooms (Preferably two) with sitting capacity of 12-15 participants each, (Iambrechts et al ,2006).

Also teaching aids like video tapes should be made available to improve technology and individual skill building, and each batch of training should not have more than 25 participants with 6-7 facilitators. The facilitators should have sufficient clinical skills to demonstrate signs of illnesses in sick newborns, private pediatricians and supervisor level functionaries from NGOs and private sector can be involved (WHO, 2003).

#### **Post-basic IMCI training:**

Studies by (S.Sazawal, 1992), show that limited knowledge on IMCI utilization seeks to improve case management skills of level 2 and 3 service providers by strengthening health system for efficiency management of sick children, and promote good family and community child care practices. The child is treated comprehensively and holistically on evidence based, high impact interventions to decline disease burden and promote under five survivals,(C.Victoria, 1978; L. Huicho, 2005)

A cross sectional study of health facilities conducted by Lambrechts , indicates that most Service providers in Sub Saharan Africa have been trained in IMCI applications, using a structured training course developed to support training with extensive learning materials, where by participants receive a chart booklet containing all IMCI guidelines to use as a desk reference (N.Bhandari Maunders, 2008). The 11 days of training combines classroom work with hands-on clinical practice thus, participants achieve competency by repetition and individual feedback. To achieve high quality training, IMCI facilitators are carefully selected, on the basis of their performance and experience in child healthcare, to attend an additional 5-day IMCI facilitators training course. WHO recommends at least one facilitator for every four participants (C.Victoria, 1978). Post basic IMCI training enhance capacity building to service providers in order to assess child's illness basing on severity using a series of algorithms, from which specific treatments are identified; guidelines are built around a series of simple questions, and easily recognized with defined signs and symptoms, with emphasis on nutrition, health promotion and counseling, (L.Boulanger, 1999)

Study by Peterson, Mushinda and Magumba on IMCI provides a model for comprehensive implementation of proven public health interventions (Peterson 2004) . An evaluation carried out in 5 countries in Africa , showed greater improvements in health care performance following IMCI training (J.Tulloch, 1999) . Children seen by IMCI trained service providers were significantly more likely to receive correct treatments, and IMCI trained service providers, communicated better with careers, Although consultations take longer, IMCI was shown to be efficient and cost less than routine care in some settings. Despite these improvements, absolute levels of service performance were often poor (J.Tulloch, 1999) . In Uganda, less than half of children received correct treatment. In Peru this was as low as 10%. Even in most successful sites in utilization, have rooms for improvement (Peterson 2004).

The knowledge and skills acquired during training are important determinants of human resource performance, but performance is also influenced by other factors, including population health perceptions and motivation, attitudes of community, and environment factors in health facility (M.Cleason, 2000).

Service providers, face continually changing environments, so even if a new guideline is fully understood they may not replace their pre-existing practice, but are more likely to modify it to incorporate some aspects of the new guidelines. Supervision has been shown to improve performance and can bridge the gap between knowledge and practice. The benefits of training appear to include more rational drug use, increased attendances (an evaluation study in Tanzania showed a 20% rise in attendances), improved provider morale, and improved perceptions of quality of care by mothers (A.Hines, 2004). An evaluation study in Uganda showed that service providers, trained through the program shared their knowledge and skills with other staff, immunization services improved, weighing of children increased from below 5% to 85% after training, despite problems with drug supply, the use of first line drugs increased. Service providers, felt more confident because their skills and classification of disease had improved (C.Victoria, 1978).

Study in Zambia showed that service providers, correctly managed less than 5% of cases of diarrhea disease before training (JE.Lawns 2004). After training they correctly managed 82% of cases at three months' follow up and 60% after one year. Mothers also liked being given the first dose of treatment on site that their children were examined thoroughly, and that service providers counseled them on home based care for children (J.Tulloch, 1999).

#### **Follow-Up Training:**

According to MOH Kenya, Follow-up Training is designed to improve supportive supervision skills such as methods for skill reinforcement, records review, assessment and enhancing job designs to encourage IMCI training and yolk bad environmental factors. The intended participants include medical officers/pediatricians and health/ ICDS supervisors who will be involved in supervisory, monitoring, and follow-up functions of IMCI implementation. The duration of the training is 2 days which may either be clubbed with Clinical skills training or

conducted within 6-8 weeks of the initial Clinical skills training. (C.Victoria, 1978).

#### ***Impact of Environmental factor on IMCI implémentation :***

(T.Nolan 2001), suggest that environmental factors play key role in health delivery services. Rowe suggests that service providers continuously face changing environment and therefore adapt practices to satisfy their professional values and personal goals. They argued that the acquisition of new skills does not necessary mean change of behavior. Service providers decide how to modify behavior either to in-cooperate all, some or none of the new guidelines.

#### ***Distance from Health Facility:***

According to study (Z.Bhutt, 2004), Every day millions of parents seek health care for their sick children, taking them to hospitals, health centers, pharmacists, doctors and traditional healers all these health seeking behaviors may be determined by distance covered by the family / community to reach any facility if quality care is far away care taker may to look for alternative course of action for remedy of the child condition, (Z.Bhutt, 2004).

The distribution of health facilities, health personnel and their access to health services varies a lot from province to province with a general access rate estimated at about 50% as observed by MCE's in Bangadesh, Cambodia, Niger, and Uganda. Utilization of health services been observed to be low where the distance is slightly far. This could be contributed to by the low quality of service, in most of health facilities especially with regards to irregular supply of drugs and equipment and the cost of sharing program that was introduced about a decade ago. Also long distance to health facility and the grinding poverty adds further to the low utilization, (MOH, 2001-2004).

#### ***Cultural / Traditional Beliefs:***

Most studies in Bangadesh, Cambodia ,Niger and Uganda, show that mixed Cultural / traditional beliefs barriers, influence the health seeking behavior among, under- 5s and allows easier integration of family / community to net work freely with service providers in matters of IMCI and regular bench mark to solve the unmated health seeking behaviors for under- 5s. In other ethnic communities IMCI implementation is delayed because of traditional barrier like newborn not being exposed outside environment before attain age of 2 months, delivery by traditional attendants and not skilled midwife in the facility (EL. Arifeen 2004)

#### ***Economic Status:***

Surveys reveal that many sick children are not properly assessed and treated properly, and that their parents have low referral speed for emergency medical attention due to inadequate financial resources, put in place to implement IMCI at first-level of the health facilities, in low-income district

Counties with large number of factories and industries may raise the level of economy thus, reduce poverty indicators, which is below 1 dollar consumption per day WHO, 2007) Communities with large scales of economies around facility improves other basic necessities of life, thus improve health seeking behavior and uplifts standards of living and child

survival, Such communities support IMCI utilization and gear to develop the program compare to facility surrounded with community under poverty level. (Bank, 2004).

#### ***Knowledge, Attitude and Practice of Service Providers to Utilize IMCI program:***

Observation made by (A.Hines, 2004), showed that Knowledge, attitude, practices and beliefs play a great role of service providers' implementation of IMCI needs experienced leadership just like in Tran-Nzioa County. Provide an access for health seeking behavior for children survival. Perceived IMCI information of service providers and their understanding, skills gained through, education (11 days training and experience) and IMCI case management skills if utilized well by the facility result to quality implementation of IMCI at facility level (A.Hines, 2004).

(Attitude) Perceived good, bad, positive or negative feelings or thinking on IMCI program by both managers in the facility and service providers influence its implementation directly or indirectly. Performance problems in the facility have been attributed to unclear expectations, skills deficit, resource or equipment /supply shortages or lack of motivation and inexperienced leadership ,(T.Nolan 2001).

#### ***Attitude on IMCI by Service Providers:***

These are Perceived bad or good feeling/thinking on IMCI by service providers', Negative attitudes of Para- medics', nurses, doctors in a facility lower IMCI implementation. However Study by wafula and Mullei in Kenya revealed that nurses generally expressed positive attitudes about IMCI, while some clinical officers and doctors have not accepted the IMCI approach. They feel that the guidelines are simplistic and do not allow them to make full use of their clinical training (Wafula 2008).

#### ***Practices of Service Providers:***

Practices of Service providers in facility, affects quality implementing of IMCI in the facility either positively or negatively for instance staff rotation. In Tanzania where staffing pattern appear to be stable in comparison with situation in other countries 23% of trained service providers had moved within three years of initial training .these service providers did not necessarily leave government employment , but rotation means that IMCI implementation may not be continually delivered at same target population overtime, (L. Huicho, 2005). Staff rotation practice in level 2 and 3 facilities is not uncommon in Kenya; however Quality practice supports compressive implementation of IMCI and as positive out to the facility.

#### ***How Service Providers Fail to Apply IMCI Protocols:***

Evidence from (C.Victoria, 1978), suggests that IMCI trained staff often fail to follow case management guidelines: for example, few children are checked for general danger signs of severe disease, less than half have their weights checked against the growth chart, and referral rates are low. Poor adherence stems from the following specific features of the IMCI strategy and broader health system (C.Victoria, 1978).

Duration of sick child assessment takes 10 to 20 minutes required to assess each child fully was considered excessive by some health workers, who skipped sections, they

perceived as unnecessarily and time-consuming or reverted to their original practices. This was argued to reflect a high work load, long patient queues and low staffing levels. Whilst the Government has hired more nurses, understaffing remains a barrier to IMCI implementation and is exacerbated by high rates of attrition, (S.Gove, 1997), Lack of job aids, Wall charts and chart booklets were frequently unavailable as they were only issued to trainees and were not replaced when lost, removed or damaged.

Frequent drug stock-outs of essential drugs continue to experience chronic shortages' with deliveries frequently delayed or failing to match facility orders,

**METHODOLOGY:**

**Study Design:**

Cross-sectional design, was explored to establish determinants on utilization and application of IMI and child health western Kenya. Mixed methods of data collection, procedure was adopted.

In quantitative data, structured questionnaire was used while for qualitative data focused group discussion (FGD) guide and Key informants interviews (KII) were deployed. Both observations and transect mapping done and recorded in structured observation checklists during a walk-through IMCI survey.

**Study Area:**

The study was conducted in level 2 and 3 facilities, in Trans Nzoia County for convenience and assumption that most facilities in Kenya have similar challenges.

**Study Population:**

The estimated population of study was 600 households. This included, well mothers and service providers holding the following positions: hospital administrators, Public health officers (PHOs), lab techs and, community owned resource persons (CORPs).

The target population was 235 service providers and well mothers with children visiting the facility.

**Sampling Design:**

Purposive & proportionally selected from target population.

In proportional sampling, a sampling frame was developed from all level 2 and 3 facility registers Canvasser method was utilized for data collection (questionnaires administered by pre-trained personnel) and KII & FGD guides in qualitative.

**Sample Size Determination:**

Fisher's formulae (Fishers, 1998), was used to determine the sample size from 20 health facilities. At least 30 respondents from 20 facilities were considered in the study. Estimated sample size = 600

Where n = target population greater than 10,000.

z = degree of confidence (1.96)

p = proportion of population. (0 .50)

q = proportion of the acceptance error (1- p)

d = level of statistical significance test, 0.05

$$n = \frac{(1.96)^2 (0.5) (.05)}{(0.05)^2} = \frac{9604}{25}$$

**Adjustment of Sample Size**

**Finite population correction formula (Fisher, 1998)**

Hence,

$$nf = \frac{n}{1 + \left(\frac{n}{N}\right)}$$

Where:

nf = desired sample size of population is less than 10,000

n= desired sample size of population is more than 10,000

N = total estimated population size in the county (600)

Hence, nf =  $\frac{384}{1 + \left(\frac{384}{600}\right)}$

$$= \frac{384}{1.64}$$

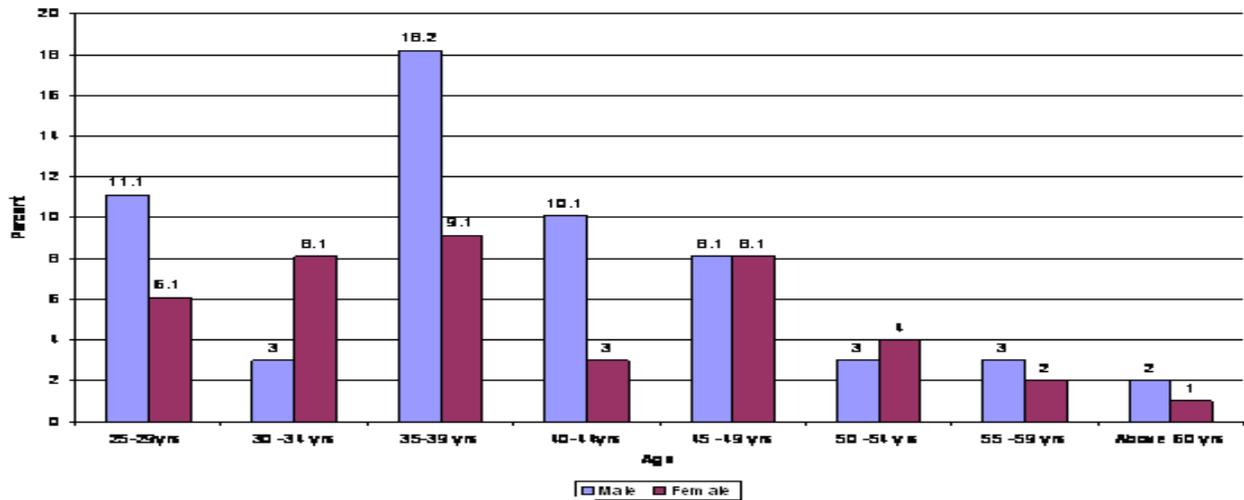
= 235

Total sample size 235

**RESULTS:**

**Demographic Characteristics of Respondents:**

A total of 235 respondents in *figure 2.1*, from Trans Nzoia County were interviewed in four health facilities, and 204 (87.4%) were married. Gender respondent included (118)50 % male and (117)49 % females, (statistics, 2008/2009).



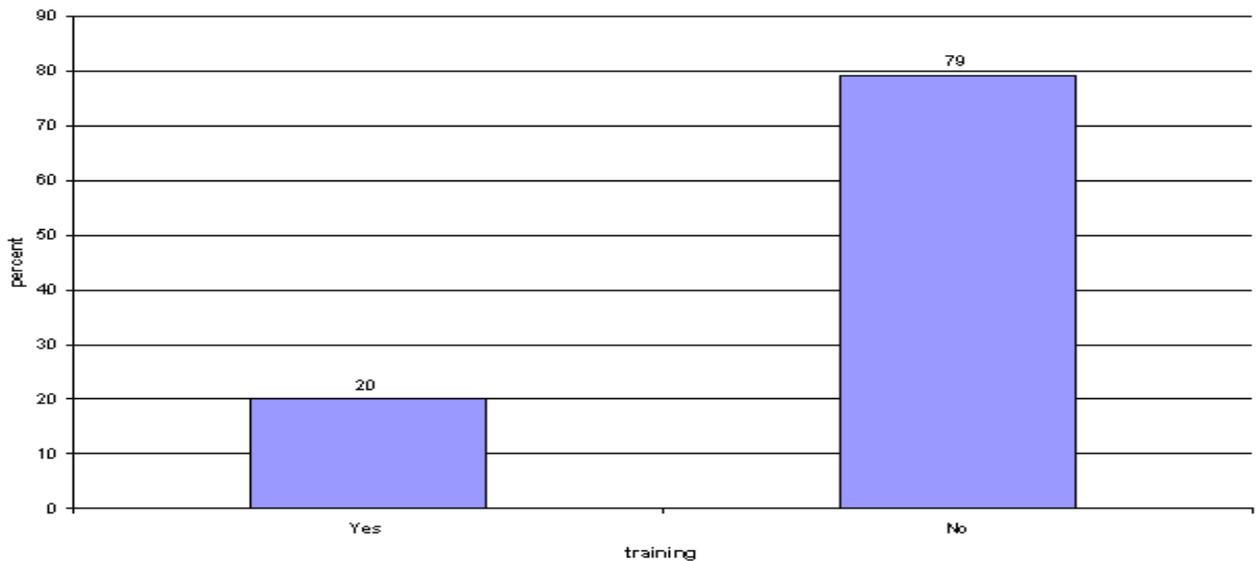
**Fig: 1 Age of respondents by gender.**

**Service Providers Training Influence on IMCI Utilization:**

The study sought to establish how IMCI service providers training influences comprehensive and holistic interventions for child survival. Out of 235 respondents majority of respondents (186) 79% said that there is no comprehensive IMCI training and follow ups despite having successive vertical program follow ups.

However there exist significant relationship between vertical programs training and IMCI implementation with constant interval of (95% CI 0.9 to 5.5%).

*Figure 3* Shows that majority of respondents (186) 79% in public health facilities in Trans Nzoia County said that there is no comprehensive IMCI training and follow ups despite having successive vertical program follow ups.

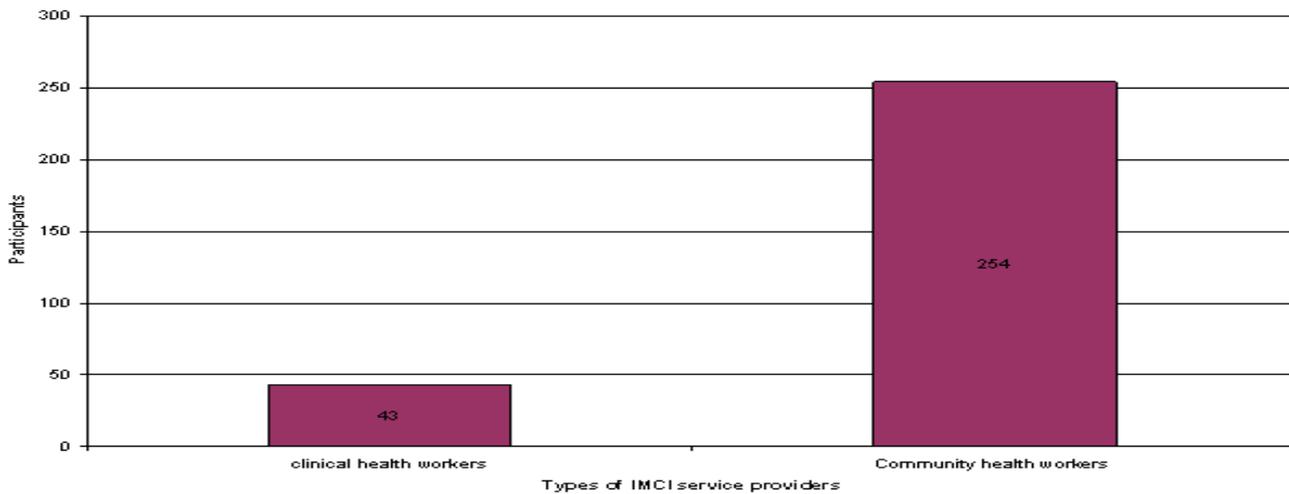


**Fig :3 Follow ups after IMCI training.**

**Type of Service Providers in relation to IMCI Implementation:**

*The figure 4* Above shows that the county has only 14.4 % (43) clinical service providers compared to majority (254) 86% community health workers who work under their

instructions in implementing primary healthcare. There was a significance relationship between community health workers and clinical health workers (chi-square 40 (95% CI 0.9 to 5.5)

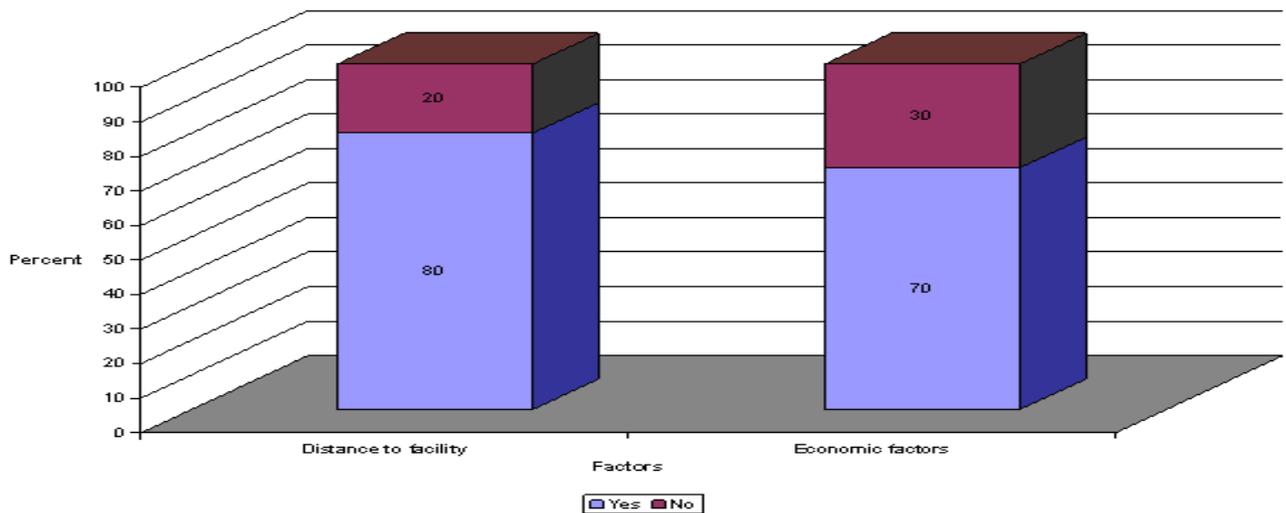


**Fig:4 Types of service providers in district.**

**Impact of Environmental, Factors on IMCI Utilisation:**  
 The study further enquired from the respondent whether, social factors, cultural factors, economic factors and distance to the facility contributed to IMCI implementation,

out of 297 respondents, Majority (238) 80% said that distance covered to the facility is not a challenge (*legend I*), but what matters was quality of healthcare and attitudes of health workers (*Figure 5*)

“Sometime issue of cultural beliefs here in some of Cherangani community affects the health seeking behaviour of guardians with children below 60 days (2 months). Some Communities believes that infants must be exposed to the sun shine only when she /he are above two months” (KII and FGD discussant – Suwerwa facility 24<sup>th</sup> June 2010)



**Fig: 5 Environmental factors influence on the facility to implement IMCI**

Further analysis revealed that social and cultural factors have significant relationship (*legend II*)

“Children from rich families in the County send their children direct to level four facilities and rarely visit level 2 or level 3 to seek for health care”. “Sometime issue of cultural beliefs here in some of Cherangani community affects the health seeking behavior of caretakers with children below 60 days (2 months). Some Communities believes that infants must be exposed to the sun shine only when she /he are above two months.”

**Knowledge, Attitude, Practices of Population Health in IMCI Application:**

The study sought to find out how KAP of the service providers affects the facility to implement quality IMCI program, it revealed from Majority 238(77 %) of the participants that KAP of service providers play key role in the implementation of IMCI, said “Yes.”

In a further study it revealed from 267 (90%) respondents that, most facilities benefit from GOK budget allocation and Private Partnership programs to implement IMCI components in ongoing vertical programs. However there is no significant relationship between IMCI implementation and KAP since the County is at a standstill practicing single disease management of vertical programs.

**CONCLUSION:**

From study majority of facilities in western Kenya have skewed number of utilization of IMCI program with proportion of only 14% application compared to over 68% recommended by WHO/ UNICEF. This mean that, utilization and application of IMCI concepts in the region is less than 14%, due to recurrent staff deficit, conflicting environmental factors at household level and also limited resource from developing partners. There is inadequate stakeholders support in implementing IMCI policies across the board, evidenced by marked patches spotted in implementing free medical service to inpatient of under five years age.

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