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FACTORS INFLUENCING ROUTINE IMMUNIZATION COVERAGE AMONG CHILDREN IN KWALE COUNTY

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Abstract:-

Background: *Routine immunization coverage in the developing world is low at 60% compared to the developed world above 80%. Due to the low coverage many children die from lack of immunization while others have been disabled. In Kenya, infant's mortality rate is currently estimated to be 77 per 1000 live births while under five mortality rate is 115 per live births.*
***Objective**: To determine factor influencing routine immunization coverage among children in Kwale sub-District hospital*
***Design**: A descriptive cross-sectional study.*
***Setting**: Kwale sub-District Hospital, Kwale County, Kenya.*
***Subjects**: Mothers/caretakers of children brought to the health facility for immunization*

Results:-
The ration in male to female of children immunized was 1:1.2. The higher number children was in the age bracket of 1-4 months (88.7%) depicting a high immunization coverage at the start of children's lives. This coverage reduces to 0.05% at 12 months of children's age. This indicates that a few children appeared for immunization as they advanced in age. Majority of mothers/caregivers (20.9%) expressed fears of side effects associated with vaccines such as fever. They also feared that immunization would cause impotence to their children (17.07%). Only 2.4% indicated that their religious sect did not allow their children to be taken for immunizations or conventional medical treatment. These socio-cultural factors impacted negatively in routine immunizations. Poor economic status exemplified by lack of funds for routine purposes and more so for transport to the immunizing health facility was also noted as a hindrance to routine immunization. The negative attitude of some health workers was cited as an operational factor impeding routine immunization this factor was more likely to weaken immunization by preventing mothers from bringing their children for routine immunization. The most likely measure cited in countering the factors, which can hinder routine immunization, was the establishment of more health centers.

Conclusion: -
To effectively strengthen routine immunization, elimination of obstacles by policy makers and radical but careful implementation of the recommendations given should be done. The findings of this study will be important to the policy makers, the GOK and NGO's in improving and strengthening routine immunization with a view to achieving a high coverage (80% and above) in Kwale district. The same information can be replicated to other districts with low to moderate coverage to assist them achieve a high coverage.

INTRODUCTION

Routine immunization coverage among children in developing countries is below the WHO and UNICEF target of 80% which leads to many children suffering from infectious parasitic and immunizable diseases, which are by far the leading causes of morbidity and mortality in the developing countries (WHO, F1999). There are many variations reported in developing countries in infant mortality and life expectancy (AMREF, 1993). The vaccines are preparations, which contain antigens that are administered for specific diseases, provide a lifelong immunity by triggering an immune reaction (Anderson, 1985).

In Kenya, the expanded program of immunization (EPI) launched in June 1980 helped raise the immunization coverage from 30% at initiation to 80% by 1993 (KEPI/MOH, 2001). Later in 1998 the Kenya Demographic Health Survey (KDHS) showed a decline in coverage from the 80% in 1993 to 65.4% in 1998 (KDHS, 1998). This decline was due to poverty and poor socio-cultural determinants. Some of the immunizable diseases have since been listed as among the 18 diseases of priority in the integrated disease surveillance and response for ease of management during their outbreaks. These same diseases have been captured for efficient management in the IMCI strategy, an initiative of the division of child Health, Ministry of Health, Kenya (ROK, 1999b), some strategies have also been put in place in both western and eastern blocks of the world. Kenya being in the Eastern bloc with other East African countries had adopted the Measles Supplementation Immunization Activities (MSIAs) which took place in 2002 with a view for elimination of measles. The measles immunization coverage is considered to be medium (50%-70%) and measles is responsible for a presumed low to medium mortality (CFR 0.5%-4%). In place is the strategy for eradication of poliomyelitis by the year 2005(WHO, 1999b). The countries of the East African bloc recommended that to meet their strategies and achieve their goals in the control, eradication and elimination of the immunizable the following measures should be put in place:

a) High routine immunization coverage of above 80%
b) Conduct supplemental immunization activities (SIAs) with above 80% coverage for each round.
c) Conduct National Immunization Days (NIDS) in selected high risk districts using appropriate strategy while strengthening case management, and an effective system for integrated disease surveillance and response for prompt and timely epidemic management (KEPI, 2001)

MATERIALS AND METHODS

Study design: This study was descriptive, cross-sectional with an aim of collecting both quantitative and qualitative data to determine the impact of routine immunization coverage on morbidity and mortality of children under five years of age in Kwale sub-district hospital.

***Study area*:** Kwale District is one of the seven district that constitute Coast Province. It is located in the south coast eastern corner of Kenya. It is bordered by Taita Taveta District in the west, Kilifi District in the north, Mombasa district and Indian Ocean in the eastern and the Republic of Tanzania in the south. The population of Kwale District was 383,053 and 496,133 people according to the 1989 and 1999 population censuses respectively. The growth rare for Kwale District is 2.625%.

Study population: The study population consisted of mothers or caretakers who accompanied their children for routine immunization.

Inclusion criteria

Those included in the study were all children up to five years of age, birth cohorts who appeared for immunization at the time of study, mothers/caretakers who their children appeared at the immunizing health facility.

Exclusion criteria

Those excluded in the study were all children above five years of age at the time of their study, mothers/caretakers who with or without their children did not appear at the immunizing health facility and any respondent or interviewee who declined to participated in the study.

Sample size

The sample size shall be determined by the following formulae

$$n=\frac{Z^2PQ}{d^2}\ 1+1/N\ [Z^2PQ-1]$$

Where: Z= standard deviate which corresponds to 95% confidence interval = 1.96
N = population sampled
D = degree of accuracy – 0.0025
P = proportion in target population estimated to have particular characteristics = 0.5
Q = 1-P= 0.5

$$\text{Thus}\quad n=\frac{[1.96]^2x0.5x0.5}{[0.0025]^2}\quad ; n=384$$

Data collection method and research instruments

Data collection was done over a six-week period from September to mid-October. Systematic sampling techniques of mothers/caretakers was used where every 5th nominal was included. Checklist questionnaires for all participants in the research study were used to collect data on trends of routine immunization demographically, trends of morbidity and mortality as routine immunization coverage for the six weeks period. Questionnaires for one to one in depth interviews were also used for mothers/caretaker who accompanied their children for immunization. These covered social, cultural, economic and operational determinants of routine immunization trends.

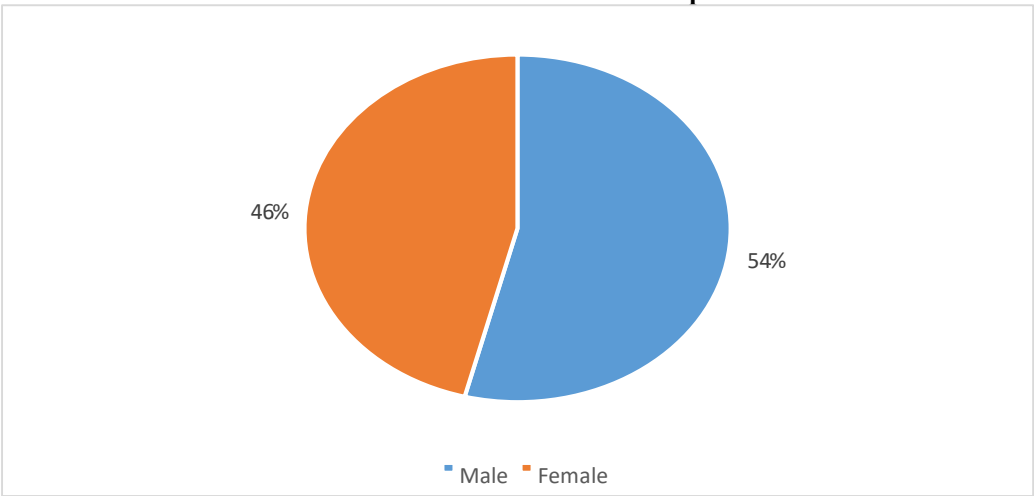
Ethical consideration
Informed consent was received from mothers/caretakers. Identity of the study participant remained confidencial. The study was approved by the administration of KMTC, Nakuru campus

RESULTS
A total of 100 respondents were interviewed on socio-cultural, economic and operational factors that influenced routine immunization at Kwale sub-district Hospital. Seven hundred children were immunized, 50% of immunized children were aged one month. Children aged twelve months were the least immunized. There was however no significant difference between immunization coverage and age of children. There was however reduction in immunization coverage with increase in age. (Table1)

Table 1: Age related trends of routine immunization in Kwale sub-District Hospital

Age (months)	1.	2.	3.	4.	5.	6.	7.	8.	9.
No of children immunized	350	100	70	40	50	40	20	15	15

Fig 1: Sex distribution of immunized children in Kwale sub-district Hospital



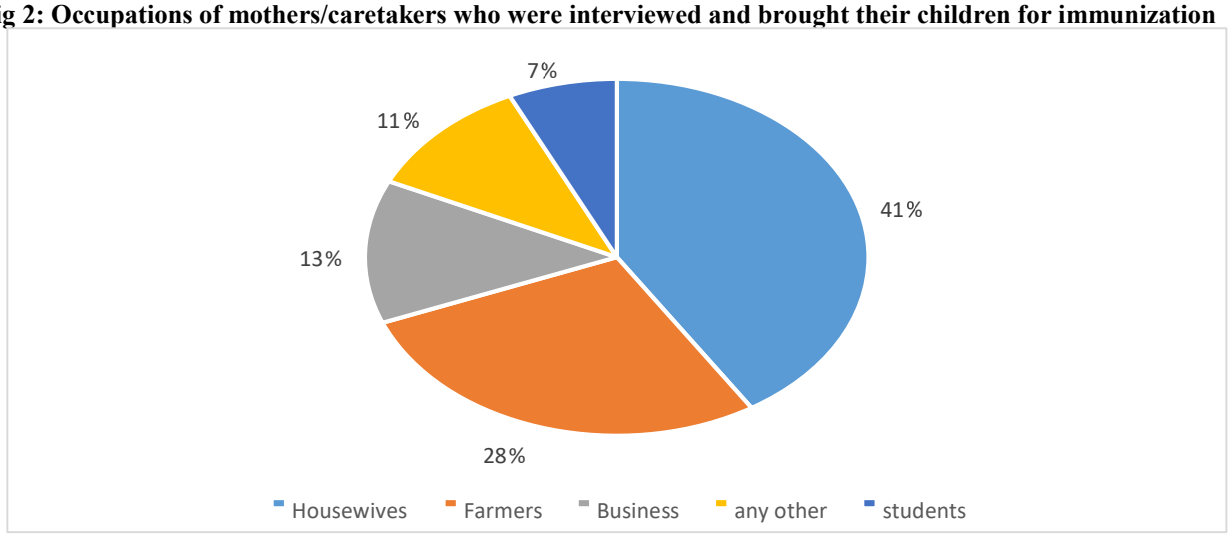
The female to male ratio was 1:1.8 showing that there was more male children than females.

Relationship between occupations of mothers/caregivers
Results of the socio-economic characteristics of the mother/caregivers accompanying their children for immunization showed that 41% were house wives, 28% farmers, 13% business women, 7% students and 11% were involved in other economic activities

Table 2: Occupation of mothers/caregivers in Kwale sub-district Hospital

	Housewives	Farmers	Business	Any other	Students	Total
Kwale	41	28	13	11	7	100

Fig 2: Occupations of mothers/caretakers who were interviewed and brought their children for immunization



Mode of transport used by mothers/caretakers to get to the sub-district Hospital

There was an association between occupation of mother/caregiver and mode of traveling to the immunization Centre. Those who were walking on foot to the health facility were 40%, 30% public transport, 18% used bicycles and only 10% used private vehicles.

Table 3: Mode of transport used by mothers/caretakers

Mode of transport	Foot	Public transport	Bicycles	Private vehicles
No. of people	40	30	18	12

Fig 3: Mode of transport used by mothers to come to the hospital

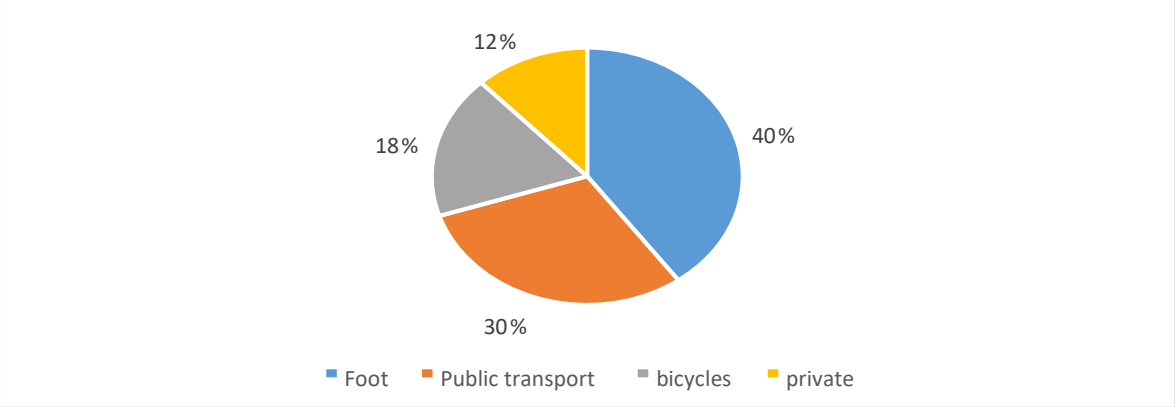
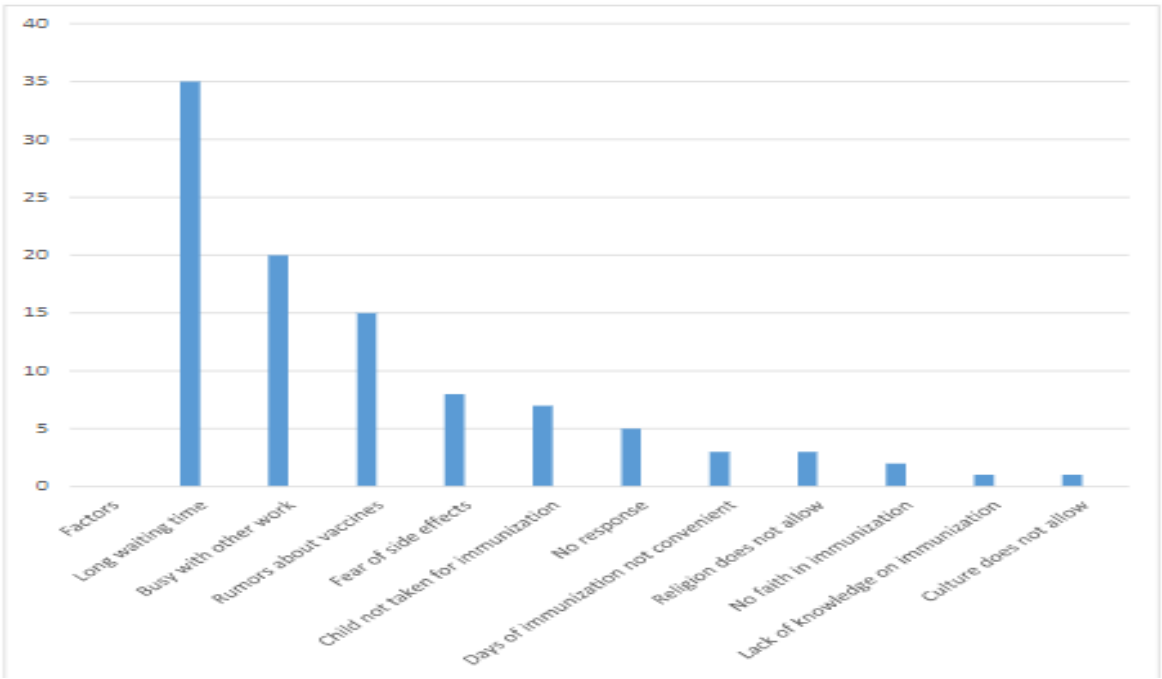


Table 4: Factors influencing immunization as reported by mothers/caregivers

Factors	Percentage (%)
Long waiting time	35
Busy with other work	20
Rumors about vaccines	15
Fear of side effects	8
Child not taken for immunization	7
No response	5
Days of immunization not convenient	3
Religion does not allow	3
No faith in immunization	2
Lack of knowledge on immunization	1
Culture does not allow	1

Figure 4: Factors influencing immunization as reported by mothers in Kwale Hospital



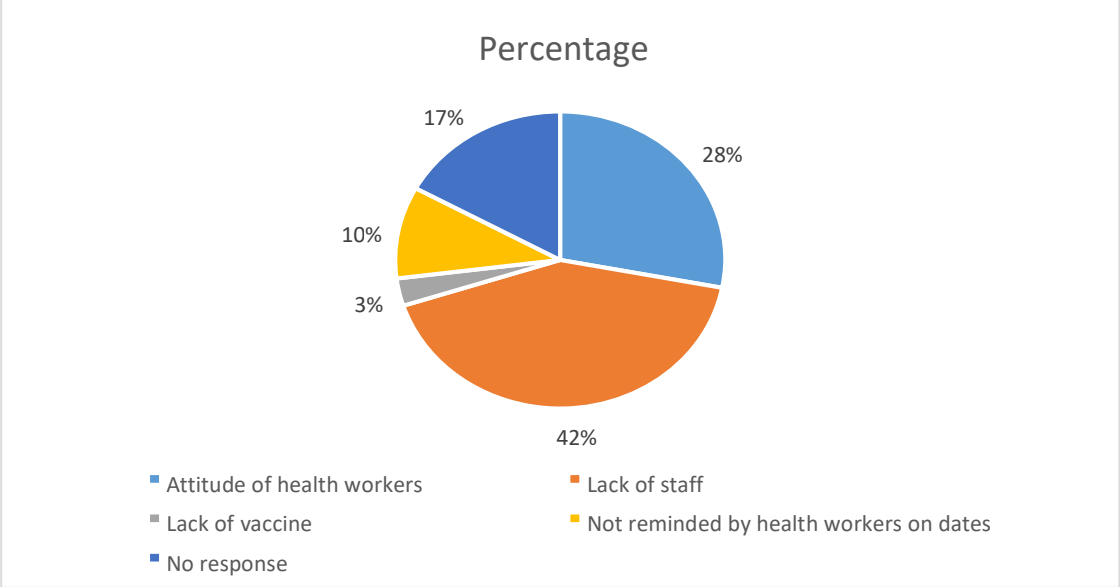
Most of the mothers/caretakers response showed that it is the failure of health workers not to reach WHO target on immunization and not them as in fig 4

Operational factors influencing routine immunization coverage in Kwale sub-District Hospital
Some of the operational factors influencing routine immunization coverage were reported as follows: attitude of health workers 28%, lack of staff 42%, lack of vaccine 3%, not reminded by health workers on dates 10% and not responded 17%. These are seen to make immunization coverage not to reach its target as recommended by WHO.

Table 5: Operational factors influencing routines immunization coverage

Response	Attitude of health workers	Lack of staff	Not reminded on dates	Lack of vaccine	No response
Percentage	28	42	10	3	17

Fig 5: Operational factors influencing routine immunization coverage as reported by mothers/caregivers



DISCUSSION
The study focused on the comparison on the trends of routine immunization coverage and evaluated the outcome. The coverage was still lower than recommends by KEPI (80%) in performance monitoring handbook (KEPI, 2003). This considered coverage in the district though much needs to be done. The result of this study suggests the immunization was lower than the recommended 80% coverage and much needs to be done to achieve the target recommended for immunization coverage.

Most of the children immunized were aged 0-4 months male to female ratio being 1:1.2. It was noted that whenever there was an increase in immunization of one sex, the same was reflected in the other sex. These results compare well with a study conducted in India aimed at imparting surveillance where there was no variation in sex of the cohorts under study (Thankur, 2002). Those children aged one month comprised 50% of the total children immunized. The immunization coverage could be due to vaccination offered of cohorts in the health facility which has maternity wards. This makes it easier to capture all the children born in all the maternities for immunization.

There were several socio-cultural factors that were identified as barriers to routine immunizations. The factors identified were affordability, accessibility and acceptability of the immunization services provided to the under five year old children. Mothers/caretakers could pick on one or more responses on the socio-cultural problems which prevented children from being presented to the health facility for immunization. Only 7% of the respondents included males were outside the age bracket of mothers of child-bearing age (15-49 years). Though routine immunization services were free there were those who could not access them because of long distance from their homes and poor roads. Majority of the indicated fear of side effects related with vaccines was a major hindrance to immunization. This also featured in the plan of action for Integrated Disease Surveillance and Response (ROK, 2001) which reports that diseases outbreaks most affect those who avoid immunization leading to high morbidity and mortality. Other respondents cited long waiting time while queuing to get services as a major problem. A good number of respondents noted that being busy with other work could jeopardize chances of making their children appear to the CWC for immunization. Some rumors which were associated with vaccines resulted in mother/caretakers fear to get their children immunized. It is worthy to note that since Kwale District in a n are of different religions said their sect do not allow them to take their children for immunization or medical treatment. 7% of the responses indicated that immunization days were inconvenient with their calendar of events. Only 12% aired their views in not having faith in immunizations. In all the responses 45% did not tick for any response.

Conclusions

There was moderate routine immunization coverage (72%) in the last 5 years as record showed and it was below the KEPI/UNICEF/WHO requirements of 80% and above for good routine immunization coverage. The main factors that influenced routine immunization were social and cultural. With effective corrective measures and cooperation between the stake holders and health service providers strengthening of the routine immunization services was mentioned by respondents to be an achievable task.

Recommendations

There was need for networking between the community based organizations (CBOs), Provincial administration. NGOs and other health sector stake holders for strengthening inter sectorial collaboration to enhance effective implementation of sensitizing the public on importance of routine immunization. Health workers should embark on a vigorous campaign on health promotion and advocacy in all health sectors, targeting MCH/FP clinics, C.W.Cs and school based programs with emphasis on primary health care activities to include importance of the immunizations. Qualifying assistance and support supervision by the DHMT must be maintained at all costs by provision of adequate financial, logistical and professionally sound resources. Acceleration of routine immunization activities should be put in place by introduction of mobile clinic services in the district. The government should employ and post trained and skilled health care providers in all the rural health facilities to enhance effective quality health delivery. There should be periodical evaluation of immunization activities per year.

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