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Influence of Women Group Activities on Maternal Health Service Utilization in Owich Sub-location, Nyatike Sub-county of Kenya

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Abstract

Despite achievements in Millennium Development Goal (MDG) 4, Kenya made insufficient progress by 2015. Women group activities significantly influence access to maternal health service inequalities which continue to record increased mortality rates. Kenya is considered among top 10 countries comprising 58% of global maternal deaths in 2013 and contributed to 2% of these deaths. In spite of benefits of births assisted by skilled birth attendants, Migori County is still under performing in skilled delivery (47%) with 21.9% and 44% home deliveries and community health services coverage respectively. The purpose of this study was to analyse the influence of women groups training, economic and social activities on maternal health service utilization in Owich Sub-location, Nyatike Sub-County of Kenya. Descriptive research design was adopted in the study. Data was collected using key informant interview guides and structured questionnaires. Descriptive and inferential statistics was used to analyze the data. To determine respondents to participate in the study, purposive, stratified and simple random sampling techniques was used. The formula Nf = n/ 1+n/N was used to determine a sample size of 240 respondents out of a total population of 503 women involved in group activities within Owich Sub-location; To determine sample size for each heterogeneous stratum, population from each strata population was divided by total population multiplied by the sample size. Key findings of the study included; a response rate of 97.5% was found to be adequate and sufficient to undertake data analysis. Women group economic, training and social activities significantly influence maternal health service utilization to a great extent 89.7%, agreed 84.5% and moderate extent 77.4% respectively. The study recommends adoption of women group activities to influence maternal health service utilization to inform the government policy formulation and development programs.

Keywords: *Women group, Maternal health, Service utilization, Mortality rates, Health systems*

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1.0 Background to the study

Women group activities are intervention by women from groups in their own rural villages who meet regularly to discuss maternal health issues affecting them and generate locally available solutions. Women groups training, economic and social activities are cost-effective approaches to deliver health services and successful programs to improve maternal survival (Sondaal, et al., 2019). Globally, 295 000 women died during and following pregnancy and childbirth in 2017 with 94% of these deaths occurring in low resource settings from preventable causes (WHO, 2019). Most of these deaths can be prevented by increased access to known interventions before conception and during the perinatal period (Goldenberg et al., 2018).

Although 42% of the world's midwives, nurses and doctors live and work in the 73 countries (UNFPA, 2014), strengthening capacities of skilled health workers remains a priority area where the majority of deaths among women occurred (Andrea, et al., 2020). Access to safe delivery, good post-natal mother and child care and adequate feeding forms an integral part of a whole system aimed at improving the overall maternal health service utilization (UN IGME & GBD, 2015). A meta-analysis study finding in Bangladesh, India and Malawi indicates that exposure to women's participatory learning and action groups with a minimum attendance of 30% by pregnant women led to a 33% and 49% reduction in neonatal and maternal mortality rate (Prost, et al., 2018).

In their studies of women groups from rural Malawi, Zamawe & Mandiwa, (2016) reports that women's group interventions contributes to reduced maternal mortality. In consensus, (WHO, 2014) recommends implementation of maternal healthcare service programmes and strategies through community mobilization of women's groups to improve access and maternal health service utilization, especially in rural settings with poor access to healthcare. Women group's activities are considered important because of their ability to promote and improve maternal health service utilization with a greater potential for sustainability (Gram et al., 2019).

Although women group activities play a greater role in promoting and improving maternal health outcomes, their mechanisms for action remains uncertain (Maldonado, et al., 2020). World Health Organization reports that there is insufficient evidence that these activities actually improve on key maternal health indicators (WHO, 2014). Comparable studies were also reported by a meta-analysis of seven randomized controlled trials that examined the effectiveness of women's groups (Prost, et al., 2013). According to Zamawe & Mandiwa (2016) there is inadequate evidence of an association between women's groups and contraceptive use.

A women's health outcome is closely linked to her social organization in addition to social, environmental, economic and cultural determinants of health conditions (Owusu-Addo et al., 2018). Tripathy, et al., (2016) indicates that post-natal health interventions like exclusive breastfeeding, clean umbilical code care, management of pneumonia and sepsis significantly reduces neonatal mortality in the intervention clusters with participatory women's group. This demonstrates that women's group activities can promote maternal health service utilization within the framework of government health systems in LMICs.

High maternal mortality remains a key public health concern in Kenya and maternal health services remains under-utilized in Kenya (KDHS, 2014). A reflection of sub counties within Migori County indicates that women groups are neither recognized nor supported through policy formulation and development, (Migori C-APR, 2018). Even though (WHO, 2014) confirms that women's groups are promising community interventions for maternal health in rural areas with low access to health services. In Migori County, women groups are classified as non-vibrant, informal groupings which

lack adequate leadership skills, group unity and experience negative group dynamics thus lack capacity to influence maternal health service utilization (County Government of Migori, 2018).

Owino (2013) found out that proportions of women seeking free maternal services increased at a higher rate within a month of free maternal care inception and that the number of pregnant women seeking maternal care increased by 100%. Despite all interventions and programmes, there is still a great concern about the number of women who still do not have access to skilled birth attendance and emergency care in health facilities (KDHS, 2014). Access to emergency services during delivery is necessary to ensure the health of the mother and newborn, it prevents maternal and neonatal mortalities and morbidities.

Annual progress report Migori County, (2018) indicates that health facility and home deliveries accounts for 43% and 56.5% respectively with an average distance of 4km to the nearest health care facility. The county's core agenda with regards to access to universal health care focuses on the supply side determinants to improve access to maternal care through construction and infrastructural development as opposed to the demand side determinants. Further, SDG target 3.1 key indicator activities and reporting mechanisms are neither well outlined in the first county's integrated development plans nor defined and reported in county's annual progress report.

The research analyzed how women group activities influence maternal health service utilization. Future research needs to explore on mechanisms through which women's groups activities promote maternal health service utilization through in-depth qualitative studies within Owich Sub location, Nyatike Sub County, Kenya.

1.1 Problem Statement

Even though cost-effective approaches in place to deliver successful health services and improve maternal survival, women groups activities are neither recognized nor supported in operational programs (Sondaal et al., 2019). Researches show that universal access and maternal health services utilization will not be attained unless women groups' ingress maternal health services through training, economic and social activities (Dahab & Sakellariou, 2020). Regrettably, there has not been considerations for women groups' activities in policy frameworks hence contravening the commitments made by individual countries (WaIvaren, 2019). Zhao, Han, You and Zhao (2010) indicates that sustainable development goals (SDGs) emphasize on the importance of accessing and utilizing maternal healthcare services to reduce maternal mortalities to less than 70 maternal deaths per 100,000 live births.

Globally, maternal mortalities reduced by 44% from 385 deaths to 216 deaths per 100,000 live births between 1990 and 2015 (UNICEF, 2019). Regionally, developing countries reports 99% of total global maternal deaths with sub-Saharan Africa accounting for 66% of global deaths, followed by Southern Asia (Singh et al., 2019). Astana Declaration (2018) reports that deficient and inequitable health inequalities will persist unless comprehensive health systems take specific actions to address primary health needs women face while seeking care otherwise women will continue to die each year due to preventable pregnancy-related complications (WHO; UNICEF; UNFPA; World Bank Group; United Nations Population Division, 2019). Although multiple factors are associated with inadequate and poor-quality maternal healthcare services between and within rural and urban areas, between countries and regions of the world (Esamai et al., 2017), active engagement of women groups in training, economic and social activities envisioned in the predesigned WHO 6 pillars of the health systems will positively influence care seeking behavior and maternal health outcomes (WHO & UNICEF, 2018).

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Nationally, in spite of free maternal health care and Beyond Zero Campaign to promote maternal health alongside Kenya Health Policy (2014-2030), Community Health Strategy and other policy frameworks, 50.4% of women are still delivered without skilled attendance in rural compared to 82.5% in urban areas (KDHS, 2014). Despite policy interventions to improve maternal health, women, who are vulnerable, uneducated and rural dwellers, are still at greater risk of maternal deaths due to relatively low access and utilization of maternal healthcare services (Zamawe & Mandiwa, 2016). Comparatively, Nyeri, Kirinyaga and Kisii counties reports over 90% health facility deliveries to 76% and 21.9% health facility and home deliveries respectively in Migori County (KNBS, 2016). A significant 25.6% of births were assisted by the help of a traditional birth attendant with 17% through unskilled attendance in rural areas.

In Migori County, awareness and education on maternal health interventions specifically free maternal health care and Beyond Zero Campaign, have been delivered through community groups especially the women groups to address barriers associated with maternal health and promote maternal health activities. However, scanty information exists on the extent of how many groups have been reached with awareness and education, the proportion of women involved and those not involved in women group training, economic and social activities that influence maternal health service utilization. Despite the use of women groups as strategy to create awareness and education of women to improve maternal health service utilization, no research has been done to understand the influence of these women groups' activities on access and maternal health service utilization in Owich Sub-location, Nyatike Sub-County of Kenya.

1.2 Purpose of the study

i. To establish the influence of women group training activities on maternal health service utilization.
ii. To examine the influence of women group economic activities on maternal health service utilization.
iii. To investigate the influence of women group social activities on maternal health service utilization.

1.3 Research questions

i. How does women group training activities influence maternal health service utilization?
ii. How has women group economic activities influenced maternal health service utilization?
iii. How has women group social activities influenced maternal health service utilization?

2.1 Empirical Literature Review

According to PLoS Medicine Editors (2010) women with low levels of education, vulnerable in rural populations experience higher mortality rates and is double those for the privileged populations. Community-based dialogue sessions and health promotions significantly influence Antenatal, prenatal and postnatal care practices among women in low resource settings (Kirkwood & Bahl, 2013). Training is considered as a process of teaching, developing in oneself or others skills and knowledge that relate to specific useful competencies to improve one's qualifications, knowledge and expertise (Wikipedia, 2020). However, in countries with limited resources for training or employing skilled labour force, task shifting may enhance training and participation of community based organizations in interventions that were previously reserved for more highly trained professionals (Nzinga et al., 2019). National performance measures often mask ongoing disparities between and within countries with a focus on unequal access by women, vulnerable and

indigenous groups to health care services and economic activities (WHO & UNICEF, 2013). SDGs target indicators and activities seek in part to address the twin challenges of eliminating poverty and ensuring healthy lives (UN General Assembly, 2015) among women. However, policies, strategies, and programmes to achieve maternal service utilization goals are not well defined while remedies that are organized and delivered within firm sectoral boundaries continue to be inadequate (Buse & Hawkes, 2015).

Microfinance is delivered in a number of ways such as microfinance institutions, self-help groups, cooperatives, village banks and women savings groups. In 2011, MFIs reached 195 million clients of which 124.2 million were amongst the most vulnerable at the time of their first loan (Maes & Reed, 2012). Similarly, Orton, et al., (2016) recognizes that women group microfinance schemes attempts to harness the collective power of mutual support in which members pool their resource, make savings and advance small loans to members in order to improve their economic power and employment opportunities for women in their immediate communities. According to Leatherman et al., (2013), women group economic empowerment through microfinance support systems are reliable, low cost and sustainable way to reach vulnerable women with vital health information, products and services. Houweling et al., (2013) & Prost et al., (2013) confirms that health interventions delivered through women's microfinance groups reduces economic inequalities and address maternal health outcomes related to access and utilization of healthcare services. Moreover, health education delivered by MFIs and saving groups has spillover effects on awareness thus change in knowledge, attitude, skills and behavior in households among women involved in group activities compared to women in non-participating households (Smith, 2002 & Tripathy et al., 2010).

Access to women groups' revolving funds enhances increased household income by women (Nudamatiya et al., 2010); (Awunyo-Vitor et al., 2012) and improves their wellbeing and status within households and communities (Panjaitan-Drioadisuryo & Cloud, 1999; Norwood, 2014). Siraj, (2012); D'espallier et al., (2013) observed that intra-household dynamics impact female enrolment in national health insurance schemes (Dixon et al., 2014). Therefore, involvement of women groups in revolving funds activities creates a close working relation among community based group lending models in order to promote and improve women socioeconomic position with communities, social support networks and interaction thus breaks barriers of accessing and utilizing health services associated with unmet health needs (Ruducha et al., 2018).

Among the Ministry of Health's priority functions are to promote and enhance access to community based maternal healthcare (Muller, et al., 2020) as envisioned in the community health strategy. Home visitation and home based care are deeply rooted in powerlessness which greatly impacts individuals' health status. Lack of access to and quality health services limits the ability and participation of women in promotive, preventive and rehabilitative care. They are more likely to delay access and utilization of healthcare service which could be addressed by sociocultural, socioeconomic and political empowerment. However, deteriorating health crisis witnessed in low and medium income countries is as a result of health systems that are unable to accommodate the expanding health needs of its population (Zulu et al., 2011). Home visits present a primary mode of health service by community physicians from the mid-20th century (Kao et al., 2009). These programs could address maternal health needs of the at risk families in LMIC within their home environment where a more tailored approach to health care service is delivered. In their studies, Labiner-Wolfe et al., (2018) outlines antenatal, prenatal and postnatal maternal, neonatal and child health visit activities to be associated with nursing care, clinical care, counselling, psycho spiritual

care, coordination and timely referrals and social support within the continuum of community healthcare as key interventions that form part of women groups activities within the home environment.

Home based care is a strategy that has the potential to promote universal access to antenatal care, skilled birth attendance and early postnatal care thus contributes to the wellbeing of maternal health (Gogia et al., 2010). According to Prost et al., (2013) study findings in south Asia, indicates that women groups strongly influence behavioral and clean delivery practices for postnatal home based care services such as hand washing, use of clean delivery kits and breastfeeding thus enhanced maternal health outcomes. Although women form 51.6% of the total population (Migori C-APR, 2018), they are still under represented in strategic decision-making processes. Women groups' home visits and home based care activities are neither recognized nor supported through policy frameworks, legislative reforms, plans and programmes. Even though they are encouraged to participate in development activities, gender disparities exist in legal, social, economic, political levels. This influences access to and control of resources and opportunities that impact access and utilization of maternal healthcare services.

2.2 Theoretical frameworks

This study is based on the health belief model (HBM) to understand human behaviour in accessing and utilizing health services. It was originally developed in the 1950s, by social psychologists Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegeles, and Howard Leventhal and has been used by scientists to explain and predict health behaviours; why people do not participate in disease detection programs (Tuberculosis Screening). HBM is based on the premise that health behavior is determined by personal beliefs and perceptions about a given disease condition and strategies available to decrease its occurrence. The HBM presupposes that a person's health related behavior depends on their perception of the severity of a potential illness, susceptibility to that illness, the benefits of taking a preventive action and the barriers to taking that action. A person's willingness to change his / her health behaviours is largely rational in their thoughts and will embrace the best health-supporting action based on their current beliefs, behaviors, values, attitudes, practices, experiences and opinions vis a vis available healthcare services. For example, while modern health care services may be available, however, training, economic and social activities may prohibit some practices, influence behavior change and promotes a sense of self-efficacy and action for a positive health outcome otherwise women may not make use of them.

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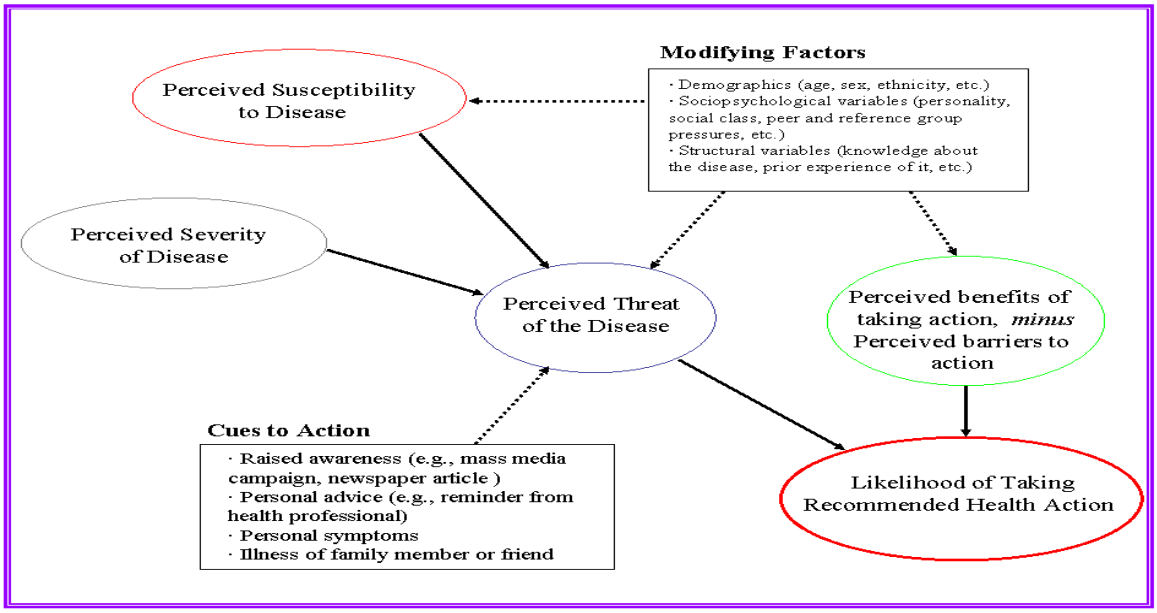

Figure 1: Health Belief Model

Source: *Becker et al. (1977) in Berman, Snyder, Kozier&Erb (2008). HBM. In M. Connor, K. Trakalo, J. A. Oliveros, & T. Zak (Eds.), Fundamentals of nursing (pp. 303). New Jersey: Pearson.*

Since maternal health evoke health concerns such as high maternal mortalities and morbidities, unskilled birth attendance, home deliveries. HBM is considered a good model used to address maternal health behavior related challenges, empower women group activities to influence access and maternal health services utilization. Programme interventions focusing on training, economic, and social activities can inform interventions that transforms attitudes, beliefs, behaviors, practices, experiences and opinions about a health conditions that influence maternal health-related behaviors. For example, advocating for a recommended health action by giving information involved in taking a recommended health action in order to avoid contracting an illness and outlining benefits associated with taking such an action reduces barriers associated with taking a recommended health action. Women group's activities influence maternal health service utilization in many ways. They promote high levels of awareness through training activities, empower women financially by enhancing their economic activities and connections through social support networks and systems enables them to manipulate the world around them. However, living in the rural, geographically marginalized areas restricts women social support networks, they operate within some rather predetermined circle of friends and relatives which impacts on their health-seeking behaviors thus limiting their likelihood of taking a recommended health action.

In this study, HBM was adopted to provide sound theoretical basis to enhance understanding of how women group training, economic and social activities influence maternal health outcomes. Using this model, women group activities and maternal health service utilization factors were explored within the five domains of the HBM, namely: individual's perceived threat to disease (perceived susceptibility), belief of consequence (perceived severity), potential positive benefits of action (perceived benefits), perceived barriers to action, exposure to factors that prompt action (cues to action), and confidence in ability to succeed (self-efficacy). However, HBM has a limitation in its difficulty in specifying its limits. Individuals who desire to prevent disease may

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not be inclined to treat an illness due to a wide range of factors that shape health-seeking behavior. Health-seeking behavior is a function of the perception of threat and the attractiveness of the value of a behavior.

2.2.1 The five domains of the HBM

Perceived susceptibility is a person's belief in his/her vulnerability to some medical condition. The more a person believes that he/she is at great risk, the more likely he will adopt a particular health-related behavior to minimize such risk. For instance, a negative experience in a previous birth could affect a woman's preference for a particular mode of birth in subsequent births, due to the belief that the negative experience could recur again.

Perceived severity is one's belief in the intensity of the medical condition and its undesirable outcomes. If it is believed that there are very serious or intolerable complications associated with a specific mode of birth, women are more likely to express a preference for an alternative method of delivery, so as to reduce their risk.

Perceived benefits is one's belief that outcomes can be positively affected by engaging in a particular health behavior. Social activities have been identified as important factors in maternal decision making processes. It promotes a sense of fulfillment and satisfaction essential for maternal health outcomes.

Perceived barriers is an individual's perception of the difficulties stopping them from following a specific health-related behavior.

Cues to action are factors that help motivate individuals make health-related decisions. Dialogues sessions, health promotions, home visitation, home based care, economic activities are factors and approaches that influence and shape maternal health care seeking behaviours and maternal health outcomes within communities.

2.3 Conceptual Framework

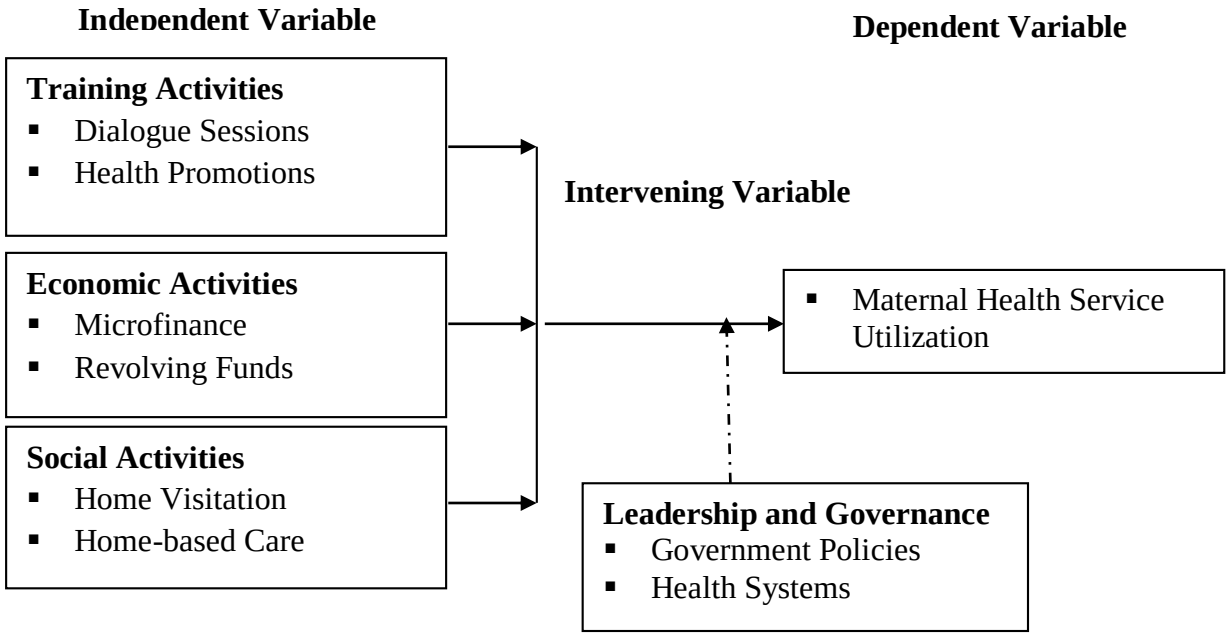

Figure 1: Operational Frameworks

3.0 Research Methodology

This study employed the use of descriptive study design as it involves observation, description and documentation of situations as they naturally occur in terms of frequency of occurrence. It is considered relatively inexpensive and useful in describing characteristics of a large population. The target population comprised of women involved in group activities as defined by group membership found within Owich Sub-location, Nyatike Sub County. Thus the accessible population for the study was 384 women involved in women group activities. The study adopted purposive, stratified and simple random sampling techniques to determine sample size of women involved in group activities who participated in the study. A sample size of 240 respondents were statistically obtained from the 20 women groups within the age bracket (18-49 years) involved in group activities as distributed across the 12 villages of Owich Sub-location. Data collection procedures was commenced immediately the research project was approved by GREC and JOOTRH IERC while data collection permit was sought from NACOSTI. Data analysis employed the use of descriptive and inferential statistics. Cross tabulation and frequencies were generated and data presented by the use of pie charts, graphs, and tables. Correlation and regression analysis involved inferential statistics. Correlation was used to analyze the strength and direction of the association between two variables.

4.0 Findings and Discussion

The questionnaires were administered and returned with 234 filled and 6 not filled, making a return rate of 97.5% and 2.5% respectively. The study found out that most of the respondents are aged between 29 – 39 years 112(47.9%). Also, 97(41.5%) of the respondents had primary education. In addition, the study indicated that majority of the respondents were married 116(49.6%). Moreover, the study indicated that majority of the respondents had 5 and above 110(47.0%) household size. Further, the study showed that high number of the respondents earned between 1,000.00-10,000.00 shillings 231(98.7%).

4.1 Influence of women group training activities on maternal health service utilization.

4.1.1 Regression analysis

Linear regression analysis was used to test for the relationship between influence of women group training activities on maternal health service utilization. ANOVA and regression analysis show that there is a strong relationship between women group training activities on maternal health service utilization.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.141[a]	.720	-.004	.425

Table 2 shows that, coefficient of R2 = 0.720 indicate that women group training activities influence maternal health service utilization. This further implied that holding other factors constant, means that 72.0% of the women group training activities influence maternal health services utilization.

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Table 3: ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.746	5	.149	.825	.034[b]
	Residual	36.562	202	.181		
	Total	37.308	207			

Table 3 indicate that, the F-value of 0.825 is greater than the standard F-table value of 0.034 at 95% confidence interval. This indicates that there is a statistical significance between independent variable; women group training activities and dependent variable; maternal health service utilization. A p-value of 0.034 which is lower than p = 0.05 indicating that the statistical model used was a good fit for testing the relationship between the independent variable and dependent variable.

Table 4: Regression Summary

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	4.331	.276	15.689	.000
	Have you attended any training on maternal health	.039	.250	-.155	.877
	How long was the session	.037	.062	-.595	.553
	Who was responsible for the training	-.055	.041	-1.339	.182
	Which of these intervention services are available for your use at the local health facility	.063	.050	-1.274	.204
	Which of these maternal health services have you made use of	.010	.030	.014	.989

Lastly, Table the regression coefficient results presented in table 8 reveals that there exists a correlation between women group training activities and maternal health service utilization, this is because the p-value of 0.000 was lower than p = 0.05. From table 8, "intervention services available for use at the local health facility" had the strongest influence towards maternal health

service utilization since it had the highest correlation of 0.63 while "Who trained" had the least correlation of -0.055.

The following multiple linear regression equation was obtained which can be used to estimate the influence of women group training activities on maternal health service utilization.

$y= \beta_0+ \beta_1 x_1+ \beta_2 x_2+ \beta_3 x_3+ \beta_4 x_4+ \beta_5 x_5+ \varepsilon$

$y= 4.331+ 0.039x_1+ 0.037x_2- 0.055x_3+ 0.063x_4+ 0.010x_5+ \varepsilon$

Where;

x_1= Have you attended any training on maternal health

x_2=How long was the session

x_3= Who was responsible for the training

x_4= Which of these intervention services are available for your use at the local health facility

x_5=Which of these maternal health services have you made use of.

The respondents indicated that;

A PHO said,

> "It has empowered women with knowledge, change of attitude, acquisition of skills and behavioral habits that has enhanced maternal health service utilization."

MOH, Nyatike (Macalder) Sub-County hospital indicated,

> "It has helped in improving intervention that focus on treatment promote, and preventive care. Intervention services such as tetanus toxoid immunization, clean and skilled care delivery, malaria in pregnancy, management of pneumonia and sepsis. It has also influenced family planning, ANC and PNC.

A nurse in charge, Kombato dispensary responded,

> "The women have been empowered and enlightened on various topics and aspects related to maternal and neonatal health case which affect their health and wellbeing as well as standards of living. Women have also been involved in social support, clinical, nursing and counseling care"

A CHC responded,

> "Training has played a major role in promoting access and utilization of maternal health services. This has also prompted growth of women group activities within the community on various matters pertaining their health and development initiatives since they have been equipped with relevant skills and knowledge which helps them to change the habits and have a positive attitude towards maternal health."

Therefore, from the contemplation and results of the qualitative data; there is proof that women group training activities influence maternal health service utilization.

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4.2 Influence of women group economic activities on maternal health service utilization

4.2.1 Regression Analysis

Linear regression analysis was used to test for the relationship between influence of women group economic activities on maternal health service utilization. ANOVA and regression analysis show that there is a strong relationship between women group economic activities on maternal health service utilization.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215[a]	.840	.029	.634

Table 5, indicated that coefficient of R2 = 0.840 indicate that women group economic activities influence maternal health service utilization. This further implied that holding other factors constant, means that 84.0% of the women group economic activities influence maternal health services utilization.

Table 6: ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.428	4	1.107	2.752	.029[b]
	Residual	91.326	227	.402		
	Total	95.754	231			

Table 6 shows that F-value of 2.752 is greater than the standard F-table value of 0.029 at 95% confidence interval. This indicates that there is a statistical significance between independent variable; women group economic activities and dependent variable; maternal health service utilization. A p-value of 0.029 which is less than 0.05 indicate that the statistical model used was a good fit for testing the relationship between the independent variable and dependent variable.

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Table 7: Regression Summary

Model		Unstandardized Coefficients			
		B	**Std. Error**	**t**	**Sig.**
1	(Constant)	5.855	.539	10.871	.000
	To what extent has training activities influenced maternal health service utilization	-.140	.094	-1.484	.139
	For how long have you been in this group (in Years)?	.102	.049	2.062	.040
	Approximately, what was your total expenditures on health during your last pregnancy?	-.023	.086	-.264	.792
	Where do you seek for maternal health services?	-.330	.178	-1.857	.065

Table 7 indicate that, the regression coefficient results presented in Table 12 indicates that there exists a correlation between women group economic activities on maternal health service utilization; it was found that "Where do you seek for maternal health services" had the least correlation of -0.330 while "period in this group (in Years)?" had the highest correlation of 0.102. The following linear regression was formulated which can be used to estimate the contribution of women group economic activities on maternal health services utilization.

$y= \beta_0+ \beta_1 x_1+ \beta_2 x_2+ \beta_3 x_3+ \beta_4 x_4+ \varepsilon$

$y= 5.855-0.140x_1+ 0.102x_2- 0.023x_3- 0.330x_4+ \varepsilon$

Where;

x_1= To what extent has training activities influenced maternal health service utilization

x_2=For how long have you been in this group (in Years)

x_3= Approximately, what was your total expenditures on health during your last pregnancy?

x_4= Where do you seek for maternal health services

The respondents were asked to give their views based on the influence of women group economic activities on maternal health services utilization. The following were the main economic activities stated by the respondents;

Area administrative officer said,

> "Some of the economic activities such as mining, tobacco farming and sand harvesting had adverse effects on maternal health and might end up having negative influence towards maternal health service utilization."

Chairlady, women group representative observed that,

> "Due to high cost of living necessitated by harsh economic times and high inflation. This could not allow some of the mothers have direct access to health services especially during pregnancy and delivery period."

> "Lack of financial support systems has led to difficulty in accessing and utilizing the medical care services."

A CHC said,

> "It has a positive influence towards the maternal health care since they have been empowered through training on how to handle emerging household financial needs."

A health social worker observed,

> "There is empowerment of women through microfinance, merry-go-round access to credit, table banking, autonomy in making informed decisions for health and nutrition services, and revolving funds among the women. This has facilitated women especially single and widowed who are traditionally disadvantaged in terms of access and utilization of maternal health care services."

From the qualitative results obtained, findings indicate that women group economic activities influence maternal health service utilization negatively as well as positively.

4.3 Influence of women group social activities on maternal health service utilization

4.3.1 Regression Analysis

Linear regression analysis was used to test for the relationship between influence of women group social activities on maternal health service utilization. ANOVA and regression analysis show that there is a strong relationship between women group social activities on maternal health service utilization.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.242[a]	.659	.037	.666

The coefficient of R2 = 0.659 indicate that women group social activities influence maternal health service utilization. This further implied that holding other factors constant, means that 65.9% of the women group economic activities influence maternal health services utilization. Refer to model summary table 14.

Table 9: ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.152	5	1.230	2.776	.019[b]
	Residual	98.835	223	.443		
	Total	104.987	228			

Table 9 indicate that, F-value of 2.776 is greater than the standard F-table value of 0.019 at 95%. This indicates that there is a statistical significance between independent variable; women group social activities and dependent variable; maternal health service utilization. A p-value of 0.037which is less than 0.05 indicate that the statistical model used was a good fit for testing the relationship between the independent variable and dependent variable.

Table 10: Regression Summary

		Unstandardized Coefficients			
Model		**B**	**Std. Error**	**t**	**Sig.**
1	(Constant)	6.558	1.043	6.291	.000
	Which of the following groups do you draw your membership from?	.868	.336	-2.586	.010
	Mention maternal health services provided during home visits.	-.039	.080	-.486	.627
	Which of these components of home based care are you involved with?	-.066	.043	-1.553	.122
	In your opinion, which is the most influencing social activities on maternal health service utilization?	.178	.080	-2.221	.027
	Which of these organizations supports women groups home visits and home based care activities?	.051	.090	-.569	.570

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Table 10 shows that, a multiple linear regression was formulated and represent as below;

$y= \beta_0+ \beta_1 x_1+ \beta_2 x_2+ \beta_3 x_3+\beta_4 x_4 + \beta_5 x_5+ \varepsilon$

$y= 4.331+ 0.039x_1+ 0.037x_2- 0.055x_3+ 0.063x_4+ 0.010x_5+ \varepsilon$

Where

x_1= Which of the following groups do you draw your membership from?

x_2=Mention maternal health services provided during home visits.

x_3= Which of these components of home based care are you involved with?

x_4= In your opinion, which is the most influencing social activities on maternal health service utilization?

x_5= Which of these organizations supports women groups home visits and home based care activities?

The linear regression was formulated and can be used to estimate the contribution of women group social activities on maternal health services utilization.

It can be used to predict the maternal health service utilization based on coefficient of each social activity. It can further be indicated that "group membership" had the highest correlation of 0.868 among the women group social activities influencing maternal health service utilization while "type of maternal health services provided during home visits" had the least correlation of -0.039.

The respondents were asked to give their views based on the influence of women group economic activities on maternal health services utilization. The following were the main economic activities stated by the respondents;

> "Despite the social cultural bottlenecks majorly of retrogressive culture and male hostility, polygamous marriages and religious beliefs, home visitations and home-based care through county government and NGOs interventions, women groups have influenced maternal health service utilization.

A community peer educator indicated that;

> "There was a positive influence on maternal health service utilization through government cash transfer programs, where the vulnerable among women groups would be considered i.e., people with disability and older people"

A community development facilitator responded that;

> "It provides an avenue for peer-to-peer influence and enables women involved in group intervention to encourage and learn from each other while putting to practice the best mechanism to handle maternity health related issues"

Women group chairperson concurs that;

> "Women group home-based care and home visitation activities have educated mothers and now they get to understand most aspects regarding their health hence they are able to respond accordingly. This has enabled them to make timely and informed decisions which are essential and important to them"

> The result indicates that there is low utilization of both preventive and promote maternal health services during home visitation and home-based care."

The result indicates that there is low utilization of both preventive and promote maternal health services during home visitation and home based care.

5.0 Conclusion

The study findings show that women group training, economic and social activities have the potential to increase maternal health service utilization. Regrettably, they have no considerations in policy frameworks. The study established, examined and investigated the influence of women group training, economic and social activities respectively on maternal health service utilization in Owich Sub location, Nyatike Sub County of Kenya. Descriptive research design was used. Descriptive and inferential statistics was used to draw findings of the research study. Findings show that women group economic, training and social activities significantly influence maternal health service utilization to a great extent 89.7%, agreed 84.5% and moderate extent 77.4% respectively. Since maternal health remains a key component of health concern and maternal health services remains underutilized. Thus adoption of women group training, economic and social activities in national and county government policy formulation frameworks and development programs to empower vulnerable women in poor resource settings to address structural and intermediary determinants of maternal health service utilization is inevitable.

6.0 Recommendations

The study recommends that;

The study recommends for the integration and adoption of women group training, economic and social activities in both county and national government policy formulation frameworks to influence maternal health service utilization at levels; one, two and three carder of health care delivery. The study recommends for operationalization of key health policies such as free universal health care policy, NHIF focusing on supply side determinants to improve utilization of maternal healthcare services through construction and infrastructural development as opposed to the demand side determinants. A study to understand factors for non-utilization of EMOC services at levels one, two and three health facilities for referrals is recommended. The study recommends that government and stakeholders formulate policies and strategies involving women group training, economic and social activities to mitigate vulnerabilities in rural hard to reach geographic locations to address barriers associated with low access and maternal health service utilization. The study recommends for women group economic activities empowerment, and formulation of strategies to mitigate access, maternal health service utilization and adequate human capital for health and heath infrastructure. The study recommends for government, private sector and community involvement through policy formulation and frameworks to recognize, support, and work in consultation with women groups and stakeholders to address delays that influence maternal health service utilization at levels; one, two and three of the health care delivery systems.

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