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Factors affecting applicability of community health workers trainings in maternal and neonatal health in Tanzania

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**FACTORS AFFECTING APPLICABILITY OF COMMUNITY HEALTH
WORKERS TRAININGS IN MATERNAL AND NEONATAL HEALTH IN
TANZANIA**

Kabula Jumanne

**A dissertation submitted in Partial Fulfillment of the Requirements for the Degree of
Master of Science in Public Health Research of the Nelson Mandela African Institution of
Science and Technology**

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ABSTRACT

Maternal and neonatal mortalities are global public health of concern and are estimated to cause about 830 women deaths every day, of which 99% are from sub-Saharan African countries. In Tanzania maternal and neonatal mortality rate is still alarming. The National health strategic plan for 2008-2015 of Tanzania directed the deployment and trainings of community health workers (CHWs) in provision of maternal, neonatal and child health services. Despite such trainings, yet there is limited evidence of the applicability of the knowledge acquired during trainings when performing their duties. Therefore, this study aimed at determining whether trained CHWs apply learned knowledge when performing their duties so as to improve maternal and neonatal health status. This study, further explored challenges facing community health workers in applying learned knowledge. Under this study both quantitative and qualitative methods were used. Qualitative method used primary data from 30 in-depth interviews with CHWs. Quantitative data were secondary obtained from a cross-sectional survey done to evaluate UNICEF/GoT interventions conducted in thirteen districts of Tanzania in 2007-2010. This study found significant association between age and applicability of learned knowledge among trained CHWs. Community health workers aged above 40 years were more likely to apply the learned knowledge in maternal and child health than those aged below 40 years. Furthermore, this study found several challenges reported to hinder knowledge applicability among CHWs. These include; little participation from community members and local government, shortage of refresher training in maternal and neonatal care, irregular working schedules, unclear roles and responsibilities on neonatal health, heavy workload as well as becoming older and less effective in visiting households, little community member's participation resulted by jealousy among CHWs and male household heads, mistrust between CHWs and community members as well as social cultural beliefs.

DECLARATION

I, Kabula Jumanne, do hereby declare to the Senate of Nelson Mandela African Institution of Science and Technology that this dissertation is my own original work and that it has neither been submitted nor being concurrently submitted for degree award in any other institution.

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Date

The above declaration is confirmed by:

Dr. Mwifadhi Mrisho

Name and Signature of Main Supervisor

Date

Dr. Lilian Pasape

Name and Signature of Co-supervisor

Date

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CERTIFICATION

We hereby confirm that the dissertation entitled “factors affecting applicability of community health workers trainings in maternal and neonatal health in Tanzania” submitted by Kabula Jumanne to the Nelson Mandela African institution of science and technology, Tanzania in partial fulfillment of the requirements for the award of master of science degree in public health research is an authentic work and has been done under our supervision.

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DEDICATION

I dedicate this work to my lovely husband Mr. Frank Kilagula, my deceased son Kelvin together with the rest sons David and Ezra and all family members.

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LIST OF ABBREVIATIONS AND SYMBOLS

CHWs	Community Health Workers
cIMCI	Community integrated Management of Childhood illness
ECD	Early Childhood Development
GoT	Government of Tanzania
MNCH	Maternal Newborn and Child Health
MNH	Maternal and Newborn Health
PHAST	Participatory Hygiene and Sanitation Transformation
PMTCT	Prevent Mother to Child Transmission
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
USAID	United State Agency for international Development
WHO	World Health Organization
AMREF	African Medical and Research Foundation

CHAPTER ONE

INTRODUCTION

1.1 Background of the problem

Maternal mortality refers to death of a pregnant woman or within 42 days after delivery and is caused by pregnancy or its management. On the other hand, neonatal mortality is the death of a newborn within 28 days of life (World Health Organization [WHO], 2013). Globally, maternal mortality has become a public health concern, and is estimated to cause about 830 women deaths every day, of which 99% are from sub-Saharan African countries (WHO, 2018). Worldwide it is approximated that about 2.7 million neonates die every year (Bryan *et al.*, 2017) and Sub-Saharan African countries account for 38 % of the total neonatal deaths (Hug *et al.*, 2017). Tanzania is the fourth country with the largest number of maternal deaths in sub-Saharan Africa and is the sixth country with highest maternal deaths in the World (Serbanescu, 2014). Maternal mortality rate in Tanzania is estimated to be 556 deaths per 100 000 population while neonatal mortality rate is estimated to be 25 per 1000 live births (The United State Agency for International Development [USAID], 2012; United republic of Tanzania [URT], 2016).

The high rate of maternal and neonatal deaths are said to be caused by inadequate access to maternal, newborn and child care services, and shortage of human resource in health sectors particularly in rural and marginalized areas (WHO, 2013). Currently, it is estimated that about 70% of Tanzanians live in rural area where the health system is challenged by shortage of health care workers, poor transportation, long distance to health facilities and inadequate medical supplies (World Vision, 2015). Through Sustainable development goal number 3, countries have established different strategies to achieve good health and well-being of its people. Among these strategies include: To reduce maternal and neonatal mortality by 2030 and by less than 70 per 100 000 live birth, and less than 12 per 1000 live birth, respectively (WHO, 2016). To achieve maternal and neonatal mortalities reduction, some low and middle-income countries adopted the use of community health workers (CHWs) as intervention among others to promote maternal and neonatal health at the community level (Singh-Prabhjot & Sachs, 2013).

Tanzania has been using CHWs to promote community based health care services including maternal health since 1960s. However, the program declined in 1990s due to poor performance and donor influence on adoption of disease specific programs (Gottier & Harttgen, 2018). In 2007-2017 Tanzania launched National Strategy for Primary Health Care that aimed to increase

community-based health care services. Moreover, the government of Tanzania in partnership with non-governmental organizations such as President's Emergency Plan for AIDS Relief (PEPFAR) and African Medical and Research Foundation (AMREF) launched CHWs programs at the community level (Gottier & Harttgen, 2018; Killewo *et al.*, 2012). In addition, the National Health Policy of 2017 directed the use of CHWs as an appropriate practice to promote maternal and neonatal health at households (Tanzania, 2017). Likewise, the Health Sector Strategic Plan of July 2015 – June 2020 directed mobilization and training of CHWs as one among six initiatives towards achieving 20% reduction of maternal and neonatal mortality by 2017/18 (URT, 2015).

Community health workers are trusted people who previously were not officially employed, but selected by their community members to work at the community level as bridge between formal health system and the community (Singh-Prabhjot & Sachs, 2013). Their role is to promote utilization of services provided by the formal health system through household visits. In Tanzania when CHWs programs were launched for second time, CHWs were selected and trained for 3 to 24 days to provide services at household level on water, hygiene and sanitation, child survival and reproductive health interventions as well as collecting information and report writing (Gottier & Harttgen, 2018). In maternal and new born care, CHWs provide services at household level during antenatal and post-natal period (Okuga *et al.*, 2015). Literature clearly shows that application of learned knowledge by employees including CHWs, is a potential aspect to improve their job performance (Saeed & Asghar, 2012). A study to examine gender differences in CHW knowledge, health promotion activities and client acceptability in Morogoro region reported similarity among CHWs in terms of knowledge, health promotion output but differences in acceptability during households visiting (Feldhaus *et al.*, 2015). Another study on CHWs in Simiyu region reported financial and non-financial incentives could contribute towards retention of CHWs (Ngilangwa & Mgomella, 2018). Furthermore, a study to examine whether paid HIV-focused CHWs can perform additional maternal and child health role reported no significance differences between single role and dual role (Shelley *et al.*, 2018). However, the studies on CHWs in Tanzania have not yet reported whether trained CHWs apply the acquired knowledge learned from their trainings prior to commence CHWs activities (Feldhaus *et al.*, 2015; Ngilangwa & Mgomella, 2018; Shelley *et al.*, 2018). Information on CHWs including applicability of training received in maternal and neonatal health before deployment is of essence for further improvement of CHWs program in Tanzania (Killewo *et al.*, 2012). Therefore, this study aimed at determining whether trained CHWs apply learned knowledge when performing

their duties so as to improve maternal and neonatal health status. This study, further explored challenges facing community health workers in applying learned knowledge.

1.2 Statement of the problem

While the rates of maternal and neonatal mortality is estimated to 556 deaths per 100 000 live births and 25 deaths per 1000 live births in Tanzania respectively (USAID, 2012; URT, 2016), the use of community health workers in providing both Maternal and child health services has been keeping on increasing. This is especially, soon after introduction of National Strategy for Primary Health Care since 2007 with the goal to reduce deficit in professional maternal and child health service providers (URT, 2007). In order to promote improvement in maternal health and reduce its associated death rates in Tanzania, the National health strategic plan for 2008-2015 directed selection and training of CHWs on various aspects of maternal, neonatal and child health. The targeted trainings focused on integrated management of child illness (IMCI), Comprehensive Maternal, Neonatal and child Package (MNH), Prevention of Mother to Child Transmission (PMTCT) and Early Childhood Development (ECD) (URTa, 2008). Despite such a long time of training and deployment of CHWs to provide maternal, neonatal and child health services, yet there is limited evidence of the applicability of the knowledge acquired during trainings when performing their duties (Feldhaus *et al.*, 2015; Geldsetzer *et al.*, 2019; Larson *et al.*, 2019; Ngilangwa & Mgomella, 2018; Shelley *et al.*, 2018; Killewo *et al.*, 2012). Furthermore, it is still unknown whether trained CHWs apply learned knowledge they acquired prior their deployment or even refresher trainings to improve maternal and neonatal health in Tanzania. Therefore, this study aimed at determining whether trained CHWs apply learned knowledge when performing their duties so as to improve maternal and neonatal health status. This study, further explored challenges facing community health workers in applying learned knowledge.

1.3 Rationale of the study

Maternal mortality is being reported to have negative consequences at family and national level. These negative consequences include but not limited to; high risk of death of the surviving neonate, family disintegration, increase of street children and decline of family and national economy (Finlay *et al.*, 2015). Therefore, researching on the means and mechanisms which will lead to reduction of both maternal and neonatal mortality is urgently needed for the improvement of both maternal and neonatal health, and eventually minimizing or eradicating the associated negative consequences as highlighted in this paragraph. In this regard, National Strategy for

Primary Health Care of 2007 proposes the use of community health workers due to deficit in professional maternal and child health service providers so as to improve maternal and neonatal health in Tanzania. Besides, Knowing status of applicability of CHWs trainings and its determinant factors with regard to the improvement in maternal, neonatal and child health services will provide the baseline to policy makers and health stakeholders for understanding effectiveness of CHWs programs and opportunities for further improvement.

1.4 Objectives of the study

4.1.1 General objective

To assess factors affecting applicability of trainings offered to community health workers in maternal and neonatal health.

4.1.2 Specific objectives

- (i) To determine relationship between socio-demographic characteristics and applicability of training among community health workers.
- (ii) To explore challenges facing applicability of training among community health workers in maternal and neonatal health.

1.5 Hypothesis/ Research question

- (i) There is significant relationship between socio-demographic characteristics of community health workers and applicability of training among community health workers.
- (ii) There is no significant relationship between socio-demographic characteristics of community health workers and applicability of training among community health workers.
- (iii) What are the challenges facing applicability of training among community health workers in maternal and neonatal health care in Tanzania?

1.6 Significance of the study

Community health workers play significant role in promoting maternal and child health at households' level. Therefore, findings on applicability of CHWs trainings will inform stakeholders including the Ministry of health, Non-governmental organizations and local

community on effectiveness of CHWs program. Findings will also provide opportunities for strengthening and improvement of CHW program sustainability. Results of this study will as well highlight what the community in general do or is ought to do so as to support the success of CHW program and therefore, take part in promoting both maternal and neonate health.

1.7 Delineation of the study

Since the data used to investigate the relationship between social demographic characteristics and applicability of learned knowledge were secondary, the researcher has analyzed and presented the available data as they are. Therefore, the study propose future research to measure applicability of CHWs trainings using parameters stated in transfer of training theories instead of measuring applicability simply by using Participants perceptions. Furthermore, the data set of secondary data has not shown the total population of CHWs from which a sample size of 166 CHWs were selected in thirteen districts. Qualitative findings may be affected by selection bias because the study recruited only active CHWs to gather their experiences and challenges in providing maternal and neonatal health. However, the study was unable to recruit inactive CHWs because either their phone numbers were not available, had stopped providing services or some were newly selected in such a way that could not answer the study questions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual framework

Deployment of community health workers is one of the interventions among others to promote maternal and neonatal mortalities at households' level in low and middle-income countries including Tanzania. The deployment process starts by selecting CHWs from the community, provide training to them in various aspects of maternal and neonatal health before assigning clear roles and responsibilities. For CHWs to effectively apply the learned knowledge from offered trainings and improve their performance, cooperation from various stakeholders is vital. The conceptual framework below provides pictorial representation of this theory (Fig. 1).

The conceptual framework presentation (Fig. 1) is the researcher own design after reviewing various literatures on CHWs. The study used it to construct objectives and research questions. The framework was used to realize relationship between variables and facilitated designing of data collection tools including in-depth interviews.

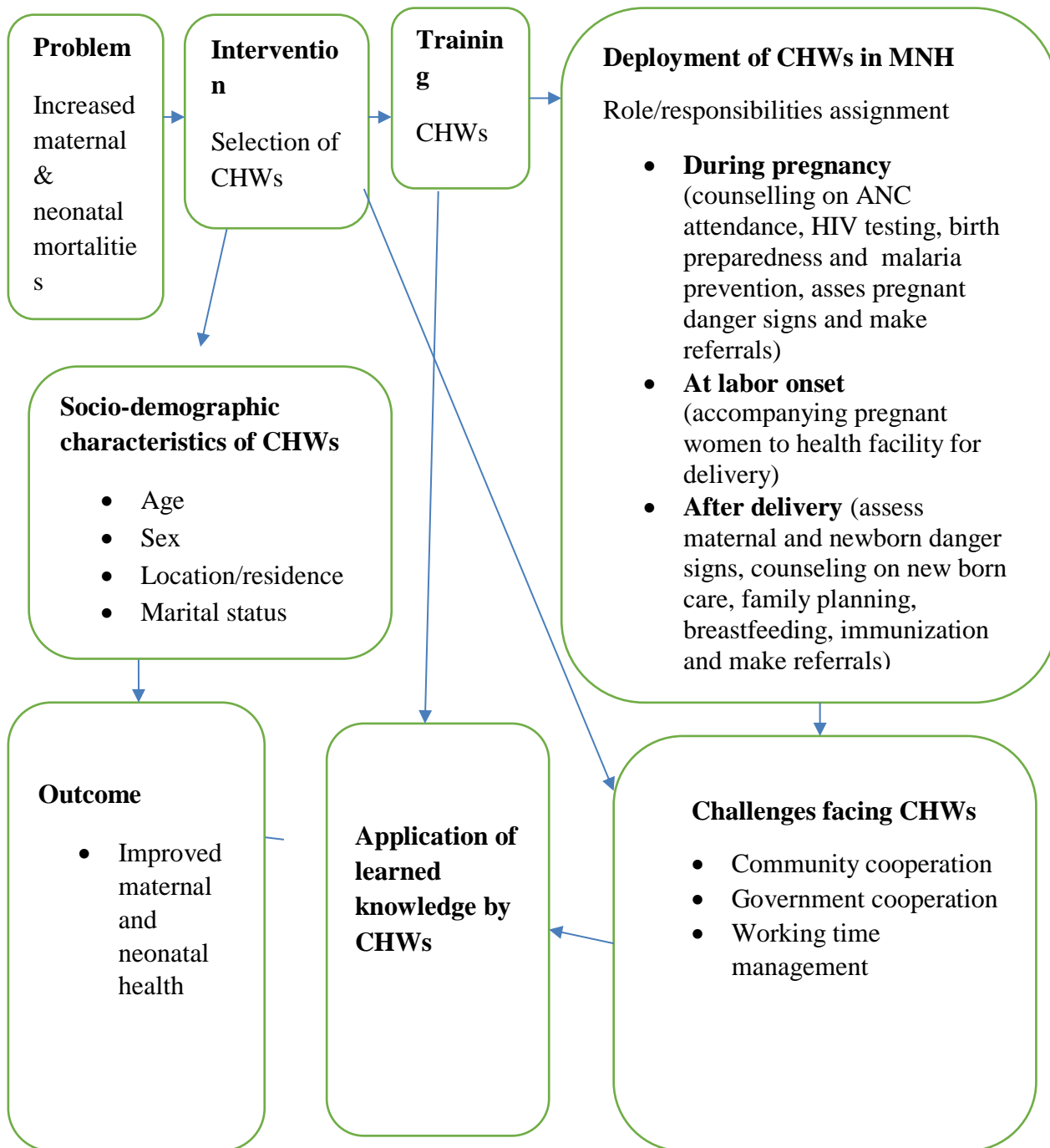


Figure 1: Conceptual framework

2.2 Theoretical review

2.2.1 Key concepts

(i) Maternal and neonatal health

Maternal health refers to the health of a woman before, during and after pregnancy (WHO, 2013) while Neonatal health refers to the health of a newborn within 28 days of life after delivery (WHO, 2018).

(ii) Maternal and neonatal mortalities

Maternal mortality refers to the death of a pregnant woman or within 42 days after delivery and is either caused by pregnancy or its management (WHO, 2013). Most maternal deaths are directly caused by hemorrhage, prolonged labor, ruptured uterus, and postpartum sepsis, complications of abortion, eclampsia, and ectopic pregnancy. While indirect causes are malaria, HIV, and anemia (Tessema *et al.*, 2017). Neonatal mortality Refers to the death of a newborn within 28 days of life and its causes usually include prematurity, low birth weight, neonatal infections and birth defects (Million death study collaborators, 2010). Maternal and neonatal deaths are not uniformly distributed throughout the world, thus they differ among countries due to inequities existing among and within countries (WHO, 2018). In developing countries including Tanzania unskilled birth remains to be a major challenge in remote areas. For example 49% of women do not access skilled births and are mostly from rural areas in Tanzania (Shija *et al.*, 2011). In Tanzania various interventions have been taken so far to address maternal and neonatal mortalities. These include; cost exemption to maternal and under-five child care services in government health facilities, increasing access to emergency obstetric care services, providing comprehensive antenatal care, establishment of safe blood bank for delivery services and provision of reproductive health, family planning services and use of community health workers (Shija *et al.*, 2011; URT, 2008). Inadequate access to maternal and childcare services has been shown to cause persistence of maternal and child mortalities (World Vision, 2015). However, among other interventions, CHWs play a significant role of promoting health including maternal and child health at households' level. Various studies on CHWs programs in Tanzania have reported different findings on CHWs regarding improvement in both maternal and child health status. However, these studies have neither reported whether trained CHWs have been able applying the knowledge they acquired prior their deployment nor factors affecting applicability of training received.

By definition, a community health worker is a trusted person selected by his/her community members to serve as an intermediary between health/social services and the community (Singh-Prabhjot & Sachs, 2013). Generally, community health workers act as a bridge between formal health services and the community by performing different duties related to health promotion, curative, prevention and social development (Singh-Prabhjot & Sachs, 2013; WHO, 2018). Specifically, community health workers can work as specialists providing specific health services in a certain specific area including maternal and child health, TB care, Malaria control, HIV/AIDS care and treatment of acute respiratory infections (WHO, 2018). In Tanzania community health workers programs are run by non-governmental organizations and fall into specialist mode of functioning thus, community health workers roles are specialized into categories such that; Home Based Care providers (HBC), Community-based distributors (CBD), Para-social Workers (PSW), Peer Educators, peer counselors, community maternal, newborn and child care providers and life skills trainers (Killewo *et al.*, 2012).

2.2.2 Role of community health workers in maternal and neonatal health in Tanzania

Generally, the role of CHW is to promote utilization of services provided by the formal health system through household visits (Singh-Prabhjot & Sachs, 2013). Since 2007-2017 when CHWs programs were launched for second time in Tanzania, the CHWs had been selected and trained for 3 to 24 days to provide services at household level on; water, hygiene and sanitation, child survival and reproductive health interventions as well as collecting information and report writing (Gottier & Harttgen, 2018). Though their specific roles in maternal and neonatal health promotion were not clearly indicated. A study in Uganda reported two categories of CHWs roles in maternal and child health. These include roles at antenatal period and postnatal period (Okuga *et al.*, 2015). Some of the reported CHWs responsibilities during antenatal period include; counselling on ANC attendance, HIV testing, birth preparedness and malaria prevention, to assess pregnant danger signs and make referrals (-*ibid*-). At the onset of labour, the CHWs responsibility is to accompany pregnant women to health facility for delivery among others. At postnatal, the CHWs responsibilities include; assessing maternal and newborn danger signs, counseling on newborn care, family planning, breastfeeding, immunization and make referrals (-*ibid*-).

2.2.3 Training and its importance

Training refers to specific knowledge, abilities and skills which are required by a person for better performance of a job (Saeed & Asghar, 2012). Training is important for improvement of

both employee and organizational performance and recently, employers have been investing many funds to offer training programs (Khan *et al.*, 2015). Studies have shown that, employees who do not attend training face difficulty to master their duties (Elnaga & Imran, 2013).

2.2.4 Trainings offered to community health workers in maternal, neonatal and child health

Community health workers play significant role in promoting maternal and neonatal health in many parts of the world (Perry & Zulliger, 2012). Training CHWs has been an important aspect to increase their competence and efficiency in delivery of various health services (World Health Organization, 2018). Before role assignment to CHWs in maternal and neonatal health normally they are offered different kinds of training including; training on various aspects of maternal and child health such as Early Childhood Development (ECD), Prevent Mother to Child Transmission (PMTCT), child feeding practices and participatory hygiene and sanitation.

2.2.5 Theories on application of training

The theoretical review is more often used in identification of new issues and prescription of the most critical research questions. A theory consists of interconnected ideas that explain and predict relationship between variables in a particular phenomenon (Bringle, 2003). In research, theories act as framework for analysis, and are frequently used to provide basis for understanding various existing phenomena. Furthermore, they provide clear guide for field development (Wacker, 1998). Theories on application of training includes motivation theories, and theories for transfer climate (Jaidev, 2012). Motivation theories guide construction of qualitative data collection tool and discussion of results.

(i) Motivation theories

Motivation theories are based on the fact that employees tend to have either different perceptions (motivations) which make them to apply the learned knowledge in their work environment or not (Jaidev, 2012). Expectancy theory by Vroom 1964, says employee tends to apply the learned knowledge from training because of individual needs or outcomes from the job such as rewards, promotions and job satisfaction (Jaidev, 2012; McMenemy & Lee, 2007). The current study tested motivational factors including rewards to identify their effects on CHWs applicability of training received.

Equity theory by Adams 1963, is based on the premise that there are different treatment among workers under the same organization such as unequal payment and treatment therefore, a person will be motivated to apply learned experience from training because he/she want to be treated the same as others (Dinibutun, 2012; Jaidev, 2012). Goal setting theory by Locke 1960s, is based on the perspective that employee are motivated to apply what they learnt in the training only if they had certain purpose when attending the training (Jaidev, 2012; Lunenburg, 2011).

(ii) Theories supporting transfer climate

These theories include transfer climate framework and organization theory. Transfer climate framework, according to this theory, workplace indicators either situations (related to goal, social influence, tasks and self-control) or result based (positive and negative feedback, punishment and no feedback) can make trained employees to either apply the learned experience or not (Jaidev, 2012; Khan *et al.*, 2015). Organizational theory emphasizes on the role of organization support such as; team working enables employee to apply training knowledge to their job areas (Jaidev, 2012). The transfer climate framework and organizational theory were used to explore the influence of community and local government on applicability of trainings. In this study, the community and local government where CHWs work were viewed as their work places and were explored to check their contributions on making better environments for CHWs to apply their learned knowledge.

2.3 Empirical review

2.2.1 Relationship between socio-demographic characteristics and application of learned knowledge

(i) Sex

Sex is a biological classification used to define whether a person is a female or a male (Williams & Best, 1990). As an individual factor, different studies have reported the influence of sex on performance of community health workers. For example, a cross-sectional study conducted at Busia District in Kenya to find out the effects of selected socio-demographic characteristics of community health workers on performance of home visits during pregnancy reported that, male CHWs were better in keeping records compared to females CHWs (Crispin *et al.*, 2012). However, another cross-sectional study conducted to find out the effect of socio-demographic characteristics on performance of community health workers in Kenya at Makueni County reported no association between sex and performance of community health workers in Makueni

County (Mbugua, 2017). A quantitative study conducted in Kisumu (western Kenya) to determine the factors with impact to performance of community health workers found no significant association between sex and performance of community health workers (Kawakatsu, *et al.*, 2012). In 2012 to 2015 a cluster randomized control trial was conducted in Zimbabwe to find out the factors associated with community health worker performance by task revealed that; female CHWs made more referrals to pregnant women compared to male CHWs (Kambarami *et al.*, 2016). Empirical studies on relationship between sex and performance of community health workers have shown the effect of sex on performance of community health workers in other places such as Kenya and Zimbabwe (Crispin *et al.*, 2012; Kambarami *et al.*, 2016; Kawakatsu *et al.*, 2012; Mbugua, 2017). A study in Tanzania reported no differences on knowledge and health promotion outputs between male and female CHWs, however, female CHWs were more likely to be accepted by community members (Feldhaus *et al.*, 2015). Most of studies on CHWs in Tanzania did not study the influence of social demographics including sex on either applicability of CHWs trainings or performance (Feldhaus *et al.*, 2015; Geldsetzer *et al.*, 2019; Larson *et al.*, 2019; Lema *et al.*, 2014; Ngilangwa & Mgomella, 2018; Rafiq *et al.*, 2019; Shelley *et al.*, 2018). Therefore, under this section, this study aimed at finding out the influence of sex on CHWs application of learned knowledge in different types of Maternal and child health offered trainings.

(ii) Age

Several studies have reported the influence of age on performance of community health workers. For instance, a study in Kenya to find out the effects of selected socio-demographic characteristics of community health workers on their performance reported that, CHWs in all age categories (40 to 50, 30 to 40) were significantly associated with record keeping and use of job aids compared to CHWs aged above 60 years (Crispin *et al.*, 2012). Another cross-sectional study conducted to find out the effect of socio-demographic characteristics on performance of community health workers in Kenya at Makueni County reported that CHWs aged 40-49 were more associated with performance of their jobs than those who aged 20-29 (Mbugua, 2017). In 2012 to 2015 a cluster randomized control trial was conducted in Zimbabwe to find out the factors associated with community health worker performance by task in a multitasked context revealed that; CHWs under 40 years made more referrals to pregnant women compared to CHWs whom aged above forty (Kambarami *et al.*, 2016). A qualitative study that was done in India to explore the factors affecting performance of community health workers found that , CHWs with reproductive age (25-40) were reported to have low performance of their duties especially once

they get pregnancy (Sharma *et al.*, 2014). A quantitative study conducted in Kisumu (western Kenya) to determine the factors with impact on performance of community health workers found that; CHWs aged above 40 years performed better than those aged below 40 (Kawakatsu *et al.*, 2012). Empirical studies on relationship between age and performance of community health workers shown the effect of age on performance of community health workers in other places such as Kenya, India and Zimbabwe (Crispin *et al.*, 2012; Kambarami *et al.*, 2016; Kawakatsu *et al.*, 2012; Mbugua, 2017; Sharma *et al.*, 2014). Recommendation and conclusion in each study was made depending on significance of association and context. A study in Morogoro region Tanzania reported no significant differences across various age groups of CHWs on knowledge and service provision in maternal and child health. However, this study included only five districts from the same region compared to the current study that included thirteen districts from different regions (Urassa *et al.*, 2015). Other studies on CHWs in Tanzania did not studied the influence of age on either applicability of CHWs trainings or performance (Feldhaus *et al.*, 2015; Geldsetzer *et al.*, 2019; Larson *et al.*, 2019; Lema *et al.*, 2014; Ngilangwa & Mgomella, 2018; Rafiq *et al.*, 2019; Shelley *et al.*, 2018). Therefore, under this section, this study aimed at finding out the influence of age on CHWs applicability of learned knowledge in different types of Maternal and child health trainings in thirteen districts of Tanzania.

(iii) Marital status

A cross-sectional study conducted in Busia District in Kenya to find out the effects of selected socio-demographic characteristics of community health workers on performance of home visits during pregnancy reported no relationship between marital status and performance of CHWs work (Crispin *et al.*, 2012). Another cross-sectional study conducted to find out the effect of socio-demographic characteristics on performance of community health workers in Kenya at Makeni County reported that CHWs who were not married performed better than CHWs who were married. In 2012 to 2015 a cluster randomized control trial was conducted in Zimbabwe to find out the factors associated with community health worker performance by task in a multitasked context revealed that unmarried CHWs made more referrals to pregnant women compared to married (Kambarami *et al.*, 2016). In 2011, a quantitative study to determine the individual and contextual factors associated with performance of community health workers was done in Nyanza province in Kenya and found that married CHWs were significantly associated with CHWs performance (Kawakatsu *et al.*, 2012). Studies on relationship between marital status and performance of community health workers shown the effect of marital status on performance of community health workers in other places such as Kenya and Zimbabwe (Crispin

et al., 2012; Kambarami et al., 2016; Kawakatsu et al., 2012). Recommendation and conclusion in each study was made depending on significance of association and context. A study in Tanzania on gender differences among CHWs did not report anything on effect of marital status on CHWs because it was among the control factors (Feldhaus et al., 2015). Therefore, under this section, this study aimed at finding out the influence of marital status on CHWs application of learned knowledge in different types of Maternal and child health trainings.

(iv) Level of education

A cross-sectional study conducted at Busia District in Kenya to find out the effects of selected socio-demographic characteristics of community health workers on performance of home visits during pregnancy reported that CHWs with higher education levels were significantly associated with good record keeping, client counseling and use of job aids (Crispin et al., 2012). Another cross-sectional study conducted to find out the effect of socio-demographic characteristics on performance of community health workers in Kenya at Makueni County reported that, CHWs with primary education were more associated with good performance compared to CHWs with education level above primary (Mbugua, 2017). Another cross-sectional study in Nepal was done to find out association between socio-demographic characteristics of female community health workers on knowledge and performance in maternal and child health found that, higher education levels were significantly associated with knowledge and performance of CHWs in maternal and child health (Acharya et al., 2016). A qualitative study which was done in India to explore the factors affecting performance of community health workers found that; CHWs with higher education level were not interested in duties with low financial incentives while CHWs with low level of education were perceived to have low capacity and knowledge to perform their duties (Sharma et al., 2014). A quantitative study conducted in Kisumu (western Kenya) to determine the factors with impact on performance of community health workers found no association between education levels and performance of community health workers (Kawakatsu et al., 2012). In 2011, a quantitative study to determine the individual and contextual factors associated with performance of community health workers was done in Nyanza province in Kenya and found that married CHWs with higher education level were significantly associated with CHWs performance (Kawakatsu et al., 2012). Studies on relationship between education level and performance of community health workers shown the effect of education levels on performance of community health workers in other places such as Kenya, India, Nepal and Zimbabwe (Acharya et al., 2016; Crispin et al., 2012; Kambarami et al., 2016; Kawakatsu et al., 2012). Recommendations and conclusion in each study was made depending on significance of

association and context. Therefore, under this section, this study aimed at finding out the influence of education level on CHWs application of learned knowledge in different types of Maternal and child health trainings hence contribution of knowledge.

2.2.2 Challenges facing community health workers in applying maternal and neonatal health trainings

(i) Community members and their associated challenges on community health worker programs

The general role of CHWs is to link the community and the health facility under which they work. For that reason it is clear that a large proportion of CHWs success depends on relationship with community members (Bhattacharyya *et al.*, 2001). Some studies have suggested community members to be given chance to select CHWs so as to set mechanisms to support CHWs in terms of incentives. Not only that but also, the community should set principles to ensure trust among Community members and selected CHWs (Naimoli *et al.*, 2012). To maximize CHWs program acceptance, community members should recognize and appreciate CHWs and understand job description and commitment of CHWs (Bhattacharyya *et al.*, 2001). A study in Kilolo district in Iringa Tanzania reported community appreciation was a motivation factor that increased working morale among CHWs hence, better health promotion at households level (Shelley *et al.*, 2018). However, the study by Shelley was done in different community context as compared to the current study. A study on community acceptability of integrated management of childhood illness in Uganda found that perceived advantage and compatibility of the program with social cultural beliefs enhanced positive acceptability by community members. The study further reported negative program acceptability in some due to undesirable behavior and lack of trust expressed by CHWs (Nanyonjo *et al.*, 2012). Furthermore, it is recommended that future research should examine the contribution of the community towards the functioning of community health workers (Naimoli *et al.*, 2012).

(ii) Local government and associated challenges on community health worker programs

Although ownership of CHWs program remain to be the duty of the community under which they work (Bhattacharyya *et al.*, 2001; WHO, 2018), the government still has potential role to ensure sustainability of CHWs program through integration of the program into policy, provision of essential training and supplies (Asweto *et al.*, 2016). However, yet the village local

government through local leaders plays significant role in mobilizing community members towards various development programs including health program (Alam, 2012). Furthermore, a study in Nigeria to examine the level and extent of community local leaders contribution on development projects found that, community has a potential contribution on projects sustainability (Udensi *et al.*, 2012). A mixed method evaluation to describe experiences of introducing quality improvement approach at the community level in Tanzania and Uganda has shown that, engagement of local leaders in the program was the major factor for success. It also increased acceptability of the program to community members in improving maternal and neonatal health (Tancred *et al.*, 2018). The same study further highlighted that in Tanzania and Uganda local leaders played a great role in assisting volunteers by introducing them in meetings where they talk with community members in meetings (-*ibid.*). The Government of Tanzania in its National road map strategic plan for accelerating reduction of maternal, newborn and child deaths in 2008 – 2015 pointed out the role of local government over CHWs including provision of in-services training and incentives to CHWs (URT, 2008). However, its implementation is still unknown. Furthermore, studies on CHWs in Tanzania did not shown participation of local Government on assisting volunteer CHWs towards applicability of training they received in maternal and neonatal health (Larson *et al.*, 2019; Mpembeni *et al.*, 2015; Rafiq *et al.*, 2019; Shelley *et al.*, 2018; Urassa *et al.*, 2015). Therefore, under this section this study investigated local government participation towards application of CHWs trainings.

(iii) Working time management for community health workers

Literature has clearly shown volunteer CHW programs work under volunteer basis without payment (Singh-Prabhjot & Sachs, 2013). On the other hand, volunteerism has been reported to cause attrition of CHWs and engage in income generating activities (Ngilangwa & Mgomella, 2018). Due to that reason, this study is interested to understand how CHWs manage their time for service provision at households' level as well as the way time management influence applicability of trainings they received prior deployment. A cluster randomized control trial on understanding of health extension workers responsibilities and time allocation on health and non-health activities in Ethiopia reported that, health extension workers in Ethiopia spent 70% of their time in health related matters (Mangham-Jefferies, Mathewos, Russell, & Bekele, 2014). However, studies on CHWs in Tanzania did not report anything on how CHWs manage their working time for effective application of training received prior their deployment (Larson *et al.*, 2019; Mpembeni *et al.*, 2015; Rafiq *et al.*, 2019; Shelley *et al.*, 2018; Urassa *et al.*, 2015)

2.4 Summary of the literature review

Based on WHO statistics, the highest mortality rates of maternal and neonates tends to occur in rural and marginalized communities, especially in low and middle-income countries like Tanzania (WHO, 2018). In 2007 Tanzania reached a decision to deploy trained community health workers into maternal and child health sectors within its health facilities at community levels. However, it is unclear whether trained CHWs have been able to apply the learned knowledge since their deployment was authorized. Furthermore, maternal and neonate mortality rates have been on the rise over decades despite deployment of trained CHWs in its health sectors. Therefore, it is imperative to understand whether trained CHWs do apply the learned knowledge as per training expectations when performing their duties, and at the same time identifying the factors affecting applicability of maternal and newborn health training. This review describes theoretical framework, concepts and empirical studies regarding factors affecting application of maternal and newborn health training among trained CHWs.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study area

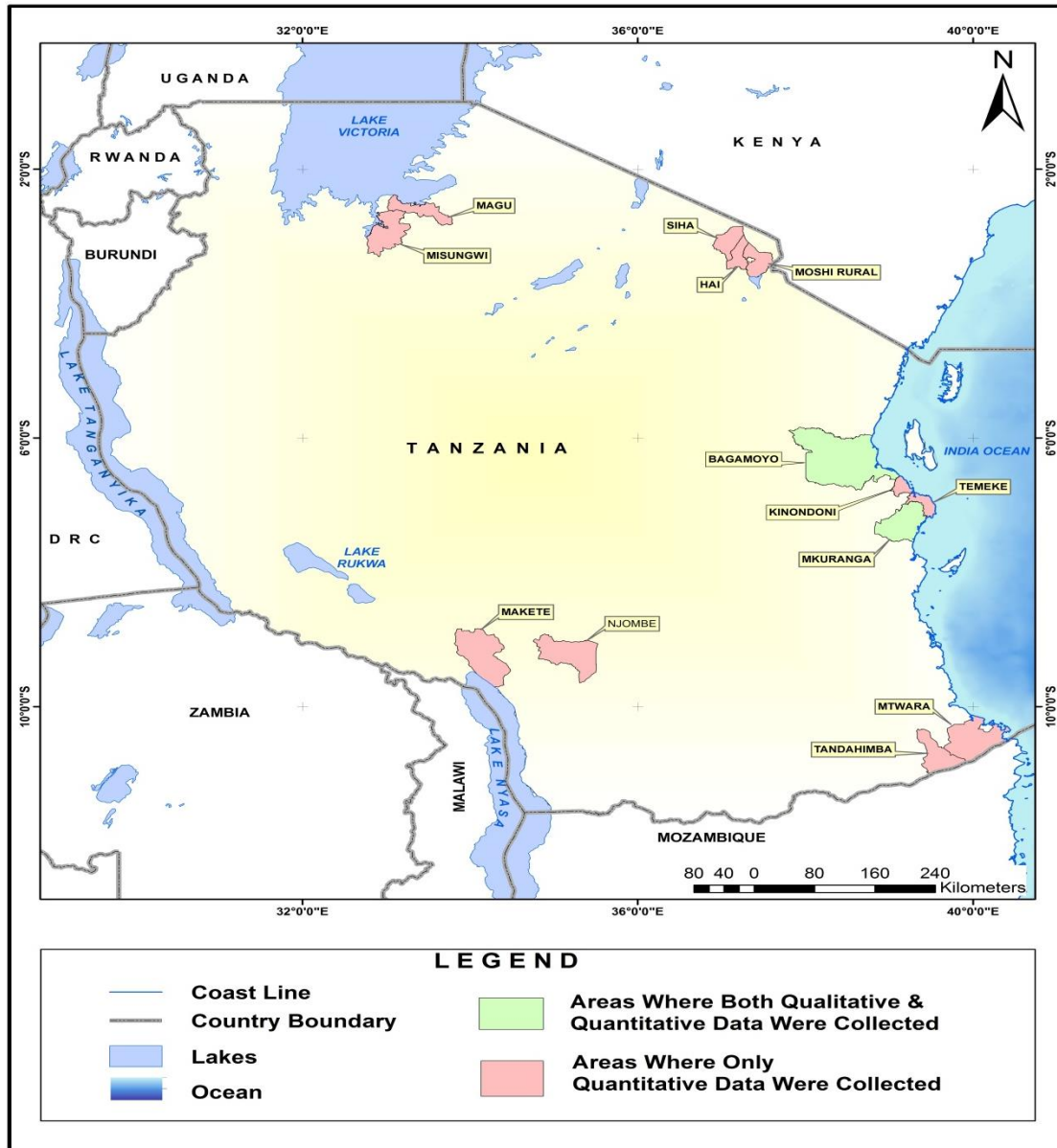


Figure 2: Map of Tanzania showing study area (Thirteen Districts) Source: (Dalushi Shija, Independent GIS Specialist, 2018)

This study used both primary qualitative and secondary quantitative data. The secondary data used were collected as part of an end-line evaluation of UNICEF/GoT interventions conducted in thirteen districts (Temeke, Bagamoyo, Hai, Siha, Magu, Makete, Mtwara, Kinondoni, and Mkuranga, Moshi rural, Misungwi, Njombe and Tandahimba) by the Government of Tanzania and UNICEF Country Programme of Cooperation 2007-2010. Primary qualitative data were collected from September 2018 to December 2019 as part of the present study activities in

Bagamoyo and Mkuranga Districts, to supplement quantitative findings mainly on challenges facing CHWs in applying learned knowledge when providing maternal and neonatal health services.

3.2 Methods

3.3.1 Study design

The present study used cross-sectional design while involving both quantitative and qualitative approaches.

3.3 Sampling design

3.3.2 Sampling for quantitative data

Quantitative secondary data were obtained from a cross-sectional survey done to evaluate the UNICEF/GoT interventions conducted in thirteen districts (Temeke, Bagamoyo, Hai, Siha, Magu, Makete, Mtwara, Kinondoni, and Mkuranga, Moshi rural, Misungwi, Njombe and Tandahimba) of Tanzania in 2007-2010. The sample of this survey consists of 166 CHWs. Among 166 CHWs only 124 perceived to apply their training were included in the analysis of the current study.

3.3.3 Sampling for qualitative data

(i) Qualitative sampling technique

In this approach the purposive sampling technique was used to get a total of thirty (30) participants. Thereafter, a total of 30 in-depth interviews with CHWs were conducted regarding the study objective on challenges facing CHWs in applying received trainings in maternal and neonatal health. The number of interviewed CHWs was determined by availability, experience and willingness of CHWs in providing maternal and neonatal care at household's level. Also these were recruitment inclusion criteria used in this study. The CHWs were identified through health facilities and interviews were scheduled and conducted in their homes.

(ii) Participants' identification

Community health workers in this study were identified and recruited from randomly selected public health facilities in the respective study areas. Due to shortage of Health Care Providers, each health facility in Bagamoyo and Mkuranga districts had at least two trained CHWs working

in the Reproductive and Child Health section (RCH). The CHWs assisted in day-to-day activities such as cleanliness, weighing and recording of children's weight, set up appointment for next visits in the maternal and newborn clinics. In order to arrange an appointment for the interviews, their phone numbers were sought from health facility in-charge which in turn the researcher used them to make appointment for interview at their homes.

There were 81 public and private health facilities in Bagamoyo and Mkuranga districts including hospitals, health centers, dispensaries, maternity centers and child specialized clinics. The study randomly sampled 12 public health facilities and from them a total of 30 participants were selected to participate in this study (Table 1 provide summary).

Table 1: Health facilities sampled for identification of community health workers

Study area	Categories of health facilities available in study area	Number of health facilities available in study area	Number of health facility sampled	Number of CHWs identified
Bagamoyo District	Hospital	1	1	3
	Health centers	4	2	6
	Dispensaries	20	3	6
	Maternity centers	1	0	0
	Child specialized clinics	1	0	0
Mkuranga District	Hospital	1	1	3
	Health centers	6	2	6
	Dispensaries	45	3	6
	Maternity homes	2	0	0
Total		81	12	30

3.3.4 Qualitative data collection

Thirty in-depth interviews were conducted with community health workers in Bagamoyo and Mkuranga districts. The study collected information related to personal experiences and challenges faced when implementing interventions on maternal and newborn health. Audio recording and field notes were taken upon participants consent. Both audio and field notes were used to collect the same information such as challenges facing applicability of CHWs maternal and neonatal trainings. However, audio recording in addition was used to collect information that was not captured through field notes. For the participants who refused to be recorded, the field notes alone was used, however, in this group both gestures and non-verbal signs were captured.

3.4 Data handling and analysis

3.4.1 Analysis of quantitative data

The applicability of the trainings received as primary outcome in particular, was analyzed by using STATA version 15. Predictor variables were CHWs social demographic characteristics. In addition, descriptive statistics were conducted to determine the relationship between socio-demographic characteristics of CHWs on applicability of learned knowledge.

3.4.2 Analysis of qualitative data

All the interviews were conducted in Swahili language. All the IDIs were tape recorded upon permission. All the recorded sessions were transcribed, and field notes were reviewed. The interviews were transcribed precisely word by word in Swahili, field notes were reviewed and all non-verbal clues that could only be captured from the field notes were added. All transcripts and field notes were transported to the framework analysis table using Excel software prepared according to the agreed codes, basing on the pre-determined and developed themes. Framework method was used for management of qualitative data and organization of codes into categories. The data were analyzed through thematic content analysis, first by reading the texts multiple times before developing the codes and themes. Coding and summarization were done in Microsoft Excel software. Then the researcher went through the transcripts to check if the identified themes and codes match the content of the transcript. Discussion on the findings was conducted with selected respondents who were previously interviewed to check if what was gathered through their communication was true/valid.

3.4.3 Ethical procedure

All procedures involving human participants in this study were done in accordance with ethical standards. The ethical approval was sought from Ifakara Health Institute's ethical review Board (IHI/IRB/NO: 3 – 2019) before commencement of this study. Mkuranga and Bagamoyo district authorities were informed in advance prior to data collection and they granted permission by writing an introduction letter that was used by the researcher as identity to local government leaders and health facility in charges at the ward and village level. CHWs were informed about the purpose of the study and their rights by using informed consent sheets. The sheet was read out to participants and their questions clarified prior joining to the study. CHWs were asked to confirm their participation by signing the consent forms. The participation was voluntary and CHWs were given right to terminate the interview at any time without any negative consequences. All data and records were kept confidential while access to the data and records were limited to trained researchers. The audio records and transcripts were archived in Ifakara Health Institute data repository.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Results

This chapter describes the study findings/results structured into two main parts. The first section presents quantitative results based on the first objective that intended to determine relationship between socio-demographic characteristics and applicability of trainings among community health workers. Second section presents qualitative findings based on the second objective that explored challenges facing applicability of training among community health workers in maternal and neonatal health.

4.1.1 Relationship between socio-demographic characteristics and applicability of training among community health workers

(i) Preliminary information on socio-demographic characteristics of community health workers

The secondary data used by this study to answer the first quantitative objective shows that 166 CHWs were interviewed during the evaluation of UNICEF/GoT interventions in thirteen districts, but only 124 CHWs were trained on six maternal and child health aspects. The trainings included Early Childhood Development (ECD), Community integrated Management of Childhood illness (CIMCI), Prevent Mother to Child Transmission (PMTCT), Breastfeeding, Maternal & Newborn and Participatory Hygiene and Sanitation Transformation (PHAST) offered to CHWs. Therefore, the analysis of secondary data in the current study included only 124 CHWs who at least had one refresher training before 2011. Majority of participants about 70 (56.45%) were females. Participants aged 41-70 years were 64 (51.61%). While CHWs with primary education were 101 (81.45%) and those married were 100 (80.65%) (Table 2 provide a summary).

Table 2: Social demographic characteristics of community health workers who received trainings (N=124)

Variable	Total n (%)
Sex	
Male	54 (43.6)
Female	70 (56.5)
Age (years)	
20-40	64(51.6)
41-70	60 (48.4)
Marital status	
Unmarried	24 (19.4)
Married	100 (80.7)
Level of education	
Missing	6 (4.8)
Standard seven	101 (81.5)
Form four	17 (13.7)

(ii) Relationship between Community health workers demographic characteristics and applicability of knowledge attained in recent training on their routine work

The applicability of training was measured by using responses obtained during interviewing of CHWs on whether they had applied learned knowledge or not when they were performing their duties. Among trained CHWs, three quarter (78.2%) perceived to apply their knowledge in their routine work in the household visits, and applicability was very similar across the sex such that 43 (79.6%) for male, and 54 (77.1%) for females. The CHWs aged 41-70 years 50 (83.33%) were more likely to apply the new knowledge embedded in their recent trainings than those aged 20-40 years (Table 3). Nearly, nine out of every unmarried ten CHW applied the learned knowledge in their routine work a bit higher as when compared to married individuals 76 (76.0%). Surprisingly, the applicability of the learned knowledge was very similar among those with primary education 80 (79.21%) as compared to those with secondary education level (form four) 13 (76.47%). Table 3 provides a summary for the described results.

Table 3: Relationship between Community health workers demographic characteristics and applicability of knowledge attained in recent training on their routine work

Variable	Applied n (%)	Not applied n (%)	Total
Number of CHWs	97(78.23)	27(21.77)	124
Sex			
Male	43(79.63)	11(20.37)	54
Female	54(77.14)	16(22.86)	70
Age (years)			
20 – 40	47(73.44)	17(26.56)	64
41 – 70	50(83.33)	10(16.67)	60
Marital status			
Unmarried	21(87.50)	3(12.50)	24
Married	76(76.00)	24(24.00)	100
Education level ¹			
Primary (Standard seven)	80(79.21)	21(20.79)	101
Secondary (Form four)	13(76.47)	4(23.53)	17

¹Education level variable had 6 missing values

(iii) Challenges facing applicability of training among community health workers in maternal and neonatal health.

Qualitative results to answer the second objective in this study were organized into two part: preliminary information on CHWs (social demographics of CHWs and their responsibilities) and challenges facing applicability of trainings received.

(iv) Preliminary information of community health worker in Bagamoyo and Mkuranga districts where qualitative data were collected

Social demographic characteristics

Majority of the interviewed CHWs in Bagamoyo district were female 9 (60%) while in Mkuranga were male 11 (73%). The domination of one sex over the other in these areas was caused by CHWs availability, willingness in providing maternal and newborn health services and migration. In addition, new CHWs were excluded as they had little experience and could not give enough information. In Bagamoyo district, CHWs aged 51-70 years were 9 (60%) while in Mkuranga districts CHWs aged 20-50 years were 8 (53%). All CHWs interviewed were standard seven and majority were married (Table 4 provide summary).

Table 4: Socio-demographic characteristics of community health workers in Bagamoyo and Mkuranga districts

Variable	Number of CHWs interviewed Bagamoyo district n (%)	Number of CHWs interviewed Mkuranga district n (%)	Total number of CHWs in both districts n (%)
Sex			
Male	6(40)	11(73)	17 (57)
Female	9(60)	4(27)	13(43)
Age (years)			
20 – 50	6(40)	8(53)	14(47)
51-70	9(60)	7(47)	16 (53)
Marital status			
Unmarried	6(40)	1(7)	7(23)
Married	9(60)	14(93)	23(77)
Level of education			
Standard 7	15(100)	15(100)	30(100)

Responsibilities of community health workers in maternal and neonatal health

Majority of CHWs reported of being responsible in maternal and child health as well as; follow-up of antenatal care to pregnant mothers, accompanying pregnant women for facility delivery, promotion of safe delivery through health talk, connecting pregnant women to the legal authorities, attending post-natal clinics to assist delivery of services, sensitization on child immunization and providing counseling on nutrition and family planning services. In addition, CHWs reported that they were also working on environmental health promotion that included toilet and dump inspection. Furthermore, CHWs reported that they were responsible in cleaning the health facility where they work. On the other hand, CHWs had another task in preparing monthly report related to their duties.

(i) Challenges facing applicability of community health workers trainings in maternal and neonatal health

Community members and associated challenges on community health worker programs

Under this study a number of challenges believed to act as barrier against applicability of learned knowledge by CHWs when performing their duties were identified. These challenges were jealousy, mistrust and social cultural beliefs. The following are explanations and evidence from CHWs when were asked to state challenges which hinder applicability of their trainings in their routine work.

- **Jealousy of male household heads to community health workers**

CHWs reported conflicts of interests from male community members. Some members were hesitant to allow CHWs (especially male) to visit their household fearing that they would engage in sexual affairs with their wives. Probably this situation might be caused by the misinformation of husbands on roles of CHWs.

Some men are jealous and reluctant to receive health education we provide, sometimes they abuse us, and they say that they are tired of our services. Sometimes I lose momentum and motivation to continue with visiting households and decide to go back home (CHW, Mkuranga district).

- **Mistrust of community members to community health workers**

CHWs reported to experience mistrust from some of community members regardless the acceptability that was shown by community members during selection process. The main reason for mistrust according to CHWs was fear among pregnant women in particular of leakage of confidentiality of their HIV test results. This was reported to slow down the provision of health services by CHWs because pregnant women with HIV feared their status to be known by the whole community through CHW. Mistrust shown by pregnant women living with HIV against CHWs might have affected PMTCT services at the community level.

Pregnant women do not like to disclose to CHW that they are HIV positive. They abused me and say that I just want to know if they are HIV positive so that I can tell other people. Sometimes I visit them but when I am at their households, they say they do not have HIV and do not want to be visited (CHW Bagamoyo district).

CHWs reported lack of identity cards and uniforms among CHWs as another among the reasons that caused mistrust from community members against CHWs. Community member's resistance to CHWs services due to lack of identity cards and uniform was reported to be complicated in immigrants' households. However, provision of identity cards and uniforms to CHWs is a role of local governments including wards and districts government.

"We do not have identity cards for our jobs; and people from other place migrate into our village daily, once I visit such kind of households with no identity cards and uniform, they do not trust. We normally use a lot of time to introduce ourselves but they do not accept our services. They tell us to go home until they confirm with village leaders. (CHW, Bagamoyo district)."

- **Social cultural beliefs**

This study observed that community member's rejection of maternal and neonatal care services from CHWs in Bagamoyo and Mkuranga might be caused by social and cultural beliefs. In the study communities, women used to hide pregnancies at initial and at late stages because of the fear that such information might reach their enemies and may be bewitched. CHWs complained to fail to provide service to women with pregnancy of earlier months because they lack ability to recognize hidden pregnancy. Social cultural beliefs were also reported to affect the newly introduced result-based financing (RBF) program, which requires CHWs to accompany a pregnant woman to hospital for facility delivery at the onset of labor. It is difficulty for CHWs to

provide appropriate services during or refer for checkup at early stages and accompany them for facility delivery as expressed in the quote below:

Sometimes pregnant women do fear of disclosing their pregnancy status in order to avoid being bewitched by their enemies. Likewise, pregnant women who are near to delivery are moved to other places to escape their enemies. They believe that CHWs can be used to harm them (CHW, Mkuranga District).

I visited a household to provide counseling services to a pregnant woman; the woman said she does not want my service (CHW, Bagamoyo district).

Local government and associated challenges on community health worker programs

- **Political party grievances from local leaders to community health workers**

CHWs in Mkuranga reported to receive little /no participation from village local government because of political party grievances. Findings have shown that during change of political administration there is always a requirement to select new CHWs, a situation that poses challenges to existing CHWs. This shows that, political factors affect working condition and allowance of CHWs as indicated in the quotes below:

I do not get support from local leaders because I was selected when our village was under the ruling part “Chama Cha Mapinduzi (CCM). Now is under Civil United Front “CUF” that wants to select new CHWs but the district medical officer rejected the proposal due to training cost. I would normally inform village chairperson for household visit, but once the chairperson informed of visiting schedule, he would go to each household and tell people that they should not cooperate with me. One day I visited chairperson’s household for toilets inspection, he refused and shouted to renting people in his household what does the CHW tell you? I decided to leave that household (CHW, Mkuranga district).

When we communicate our challenges to village government we are told that you are related to “CCM party” we are not given allowance since “civil united front” (CUF) took position in our village (CHW, Mkuranga district).

CHWs also reported to receive little cooperation from local leaders despite the handing over of the programs to their local governments for sustainability. In most cases, CHWs provide services under volunteering bases therefore, it is significant for local leaders to understand their working environments thus to minimize quarrels while enhancing cooperation with CHWs. Little

involvement of local leaders in assisting CHWs to implement their duties was reported to cause CHWs to use their own money to provide service to the community. This indicates the need of education to local leaders on CHWs roles and mobilization of resources to sustain the program. Below is the experiences from respondent;

The village government committees do not want to include CHWs in meeting agenda but the district medical officer told us to participate in meetings to share our challenges. They do not cooperate with us because they lack understanding about our roles. Some people who join village committee meetings and speak on our behalf; they are told to give feedback that CHWs are paid by the central government (CHW, Mkuranga district).

- **Shortage of refresher trainings**

As indicated in the national road map strategic Plan, one of the roles of local governments (village and district councils) include promoting reduction of maternal, newborn and child deaths as well as provision of refresher trainings to CHWs (United Republic of Tanzania, 2008). Besides, effectiveness on applicability of trainings received by CHWs prior their deployment depends on refresher trainings. However, majority of CHWs reported minimal refresher training opportunities, thus have not attended any since 2016. Because of this, the newly selected CHWs reported to have inadequate knowledge on maternal and child health services such as exclusive breastfeeding in particular. This indicated that, appropriate training was not provided in the belief that they are knowledgeable. Failure of the majority to attend trainings for three years put their understanding in matters related to maternal and child health particularly breastfeeding practices and the services they offer to the community in question. The quote below substantiate that young selected ones who lack essential training on maternal and child health especially in breastfeeding practices:

Breast milk are not enough for the baby under six months, supplementary food is required because babies do cry demanding for extra food from the first month and are born with hunger” (CHW, Mkuranga district).

Response from experienced personnel;

We insist mothers to breast-feed babies without feeding them with anything for six months but they do ask as to why the children are not given water. You can find a newborn given water within two weeks after delivery and this make some newborn experience stomach pains” (CHW, Bagamoyo district).

Irregular working schedule and concentration on non-health related roles

- **Working hours spent per day**

This study observed that majority of CHWs in Bagamoyo did not have appropriate daily working schedules to implement their duties. In addition, CHWs reported to concentrate on income generating activities because the work under volunteer basis was without allowance. However, majority reported that their schedules depended on the availability of work. They reported to use most of their time to do other activities such as family responsibilities. The findings also revealed that lack of proper working schedule for health related activities amongst CHWs might be due to lack of clearly defined management teams for routine checkup of CHWs activities.

The time that I use to provide service as a CHW do not exceed six hours and it is not every day, it depends on availability of the task to be done. Because as a CHW I do volunteer so I cannot provide service to the community every day, I have other family responsibilities (CHW, Bagamoyo district)

The findings show that lack of proper working schedules among CHWs has some challenges over CHWs in providing their services to the community. For example, they reported that they more often not succeeded to meet family heads (mother or further) during their visits due to poor timing and preparations. Clear defined CHWs working schedule is important for better implementation of CHWs responsibilities and enable household head to know the visiting days and avoid absenteeism. Furthermore, the findings observed that in Bagamoyo the community members were missing important services including maternal and neonatal health because CHWs did not have appropriate working schedule.

During visiting I could go to a certain family to provide service then I found no mother or father, I just make visiting without knowing the presence of family heads in my village, I cannot even make phone call because I do not have their mobile numbers, I do make visits without informing them (CHW, Bagamoyo district)

- **Visiting frequencies per month**

This study observed that the average capacity to make household visit for one CHWs in Bagamoyo and Mkuranga district is four to five household per day. Majority reported their visiting frequencies per month to range from two to three. From some CHWs this study noted that CHWs in Mkuranga district were required to make household visit after every three days which makes a total of eight visiting frequency per four weeks (one month). Based on these

findings it is apparent that CHWs in Bagamoyo and Mkuranga attended only 25% to 38% of the required household visiting per month leaving 75% to 62% of total household visiting frequencies unattended

First, I spent about one hour or two hour in a single household during visiting day, I can start working from eight o'clock am until twelve pm, in average number of households I visit per day is four or five (CHW, Mkuranga district)

The tendency of some CHWs to allocate more time in economic activities so as to increase their income has resulted some to lose memories about household visiting frequency per month, and hence this indicates that the community has been missing constant provision of services including maternal and neonatal health services from CHWs for years.

Honestly, because of economic difficulties I use only one week per month to make household visit although I do not remember the visiting frequencies in that week. I don't have a visiting schedule per week because I have a lot of works to do, even now am talking with you I had left my work of designing clothes and decide to talk with you. However, as a community health worker I am supposed to make visit after every three days (CHW Mkuranga district)

As reported by a CHW, when the visits are to be done after every three days that means the maximum required visiting frequency per month is 8 per one CHW. Majority reported that their average visiting frequency ranged from two to three. This means about 75% to 62% of the total required visiting frequencies per month were not attended by CHWs.

- **Task assignment without prior notification**

CHWs in Mkuranga and Bagamoyo reported to lose work motivation because of some non-friendly circumstances at work. For example, they reported to be asked to do some duties without prior notification/negotiation. For instance, in Bagamoyo, some CHWs reported to be given new tasks without prior notification at the time when they submit their reports. They complained on unplanned tough tasks that were provided by a certain NGO even without giving them training on how to go about the tasks. They reported unfairness, since they were told that without accomplishing the new unplanned tasks they would not be considered in payment even if they submitted the normal reports.

Another challenge is that, the government should pay attention to non-governmental organizations that use CHWs, others they go against agreed terms. There is one NGO

dealing with children but I will not mention it here, they were giving us task without even preparing meeting. According to agreed terms, we were required to make visits so that we prepare reports about children. They were informing us the day they will come to collect the report, so us CHWs we prepared for submission during the collection day. The problem come at the collection day once CHW submit a prepared report he/she is given another report to fill instantly and submit within the same day without even knowing how it should be filled. For example, I was reporting for fifty-seven children I faced challenge to fill the new report since my eyes are now loosing vision. If it happen a CHW fail to fill the new report during submission day he/she was told to lose his/her right to be given the allowance even for the old submitted report (CHW, Bagamoyo district)

When the information come to us from either district office or ministry of health, for example if we are required to prepare a report. Sometimes we are not informed to make prior preparation. They just request for submission it become very challenging especially when the report is not yet prepared (CHW, Mkuranga district)

Unclear roles and responsibilities for community health workers on neonatal health

- **Few CHWs make visits at early post-natal period**

This study observed that majority of CHWs in Mkuranga and Bagamoyo did not attend delivered mothers and neonates after hospital delivery because of lacking required knowledge and skills of attending neonates and delivered mothers. However, CHWs have vital roles from the first week of postnatal period including provision of counseling and support on exclusive breastfeeding, assessment of danger sign to both mother and neonate, thermal care, hygiene and cord care (Okuga *et al.*, 2015). The current study noted one major factor for the majority of CHWs to fail attending delivered mothers and newborn; that is CHWs in Bagamoyo and Mkuranga were not trained to attend new delivered mothers and neonate, thus was not part and parcel of their roles in maternal and newborn health care. Other noted factors were lack of transport facilities and overload due to some village to have only one CHW.

I am not concerned with challenges after delivery of the pregnant mother, normally a mother get delivery at health facility. The health workers they know how they should go about her. When the mother is discharged to go home, she then stay at home with her newborn. When the newborn faces minor problems example too much crying, it is where I can give my advice. A CHW to give such advice I should be informed that there is a newborn somewhere in my village where I should go and provide help. Without being

informed it is difficult to know that somewhere in my village there is a newborn, because my village is too large. Sometimes children are born without my notification in some streets of my village especially which are far from where I stay. Sometimes children are born in my village and I get informed but I fail to attend them because of having no transport. However, you have to understand that I have no any service upon a newly delivered mother (CHW, Mkuranga district)

In maternal health, my role is to provide education to mothers during pregnancy. The first thing I used to tell the pregnant mother is that they are not supposed to give birth in their homes, they should deliver at health facility. In addition, we provide facility escort to mother with labor to ensure they deliver at health facility. I normally provide my phone number for them to call me once a mother starts to feel labor pain (CHW Bagamoyo district)

Furthermore, this study noted that some of new delivered mothers were lacking of newborn care. This can partly be attributable to probably missing of early post-natal visits from CHWs. Moreover, majority of CHWs reported that some mothers fail to comply with exclusive breastfeeding by giving water and food to infants and newborn. Some CHWs especially in Bagamoyo district reported that some newborn got sick because of mother's poor care including cord care.

Majority of new delivered mothers tend to introduce early bath to newborn before falling of the cord. We normally educate them to use soft clothes in cleaning babies but they do not adhere as a result some newborn experience cord swelling. We also insist mothers to breast feed their babies without feeding them with anything for six months but they say why children not to be given water? Therefore, you can find a newborn is given water within two week after delivery and this make some newborn experience stomach pains. (CHW, Bagamoyo district)

High workload

This study revealed that some villages in Mkuranga and Bagamoyo were served by one CHW. Hence, another factor contributed high workload to CHWs. For example, Village X with five sub-villages in Mkuranga district with 670 households and population of 2847 people (URT, 2012) was served by one CHW. Another village X in Bagamoyo district with 289 households and population of 1129 was as well served by one CHW.

First of all the challenge is that, my village is very large consisting of five hamlets I walk by foot alone to provide services to the community (CHW, Mkuranga district)

Old age and associated challenges

Some CHWs complained on aging, that they worked for long time and need to retire. Aging normally causes loss of energy to do some tasks. Older CHWs reported to face some challenges including loss of sight which make them fail to do some work like filling of some documents. Other complained that they could not walk long distances to provide services at the households, since they do not have enough energy. Below are quotes from CHWs;

For example, my area that I was working had 57 children; I faced a challenge to fill the forms because now my eyes have started to loose vision due to aging. Sometimes I get confusion. When I start to fill any form I experience headache, and if my fellow CHW is around would always help me (CHW, Bagamoyo district)

Honestly, I am too old, I requested the district medical office for retirement but they rejected my request and told me that I shall continue working as CHW. The work is becoming very tough for me because it is like am working alone, my colleague was selected to join me recently and therefore, she is not aware with many things about working as CHW. She cannot even answer your questions (CHW, Mkuranga district)

The study observed that aging and tiredness of some CHWs are strong reasons that make some CHWs to request and some admire for retirement. Such kind of CHWs find themselves continue providing service including maternal and neonatal services to the community because of missing potential volunteers to take their position.

For sure, I like to be a CHW, I am doing this job since 1995 when I was young with enough energy. I started to work as community based distributor in family planning programme. In the year 2000, I was appointed for the second time. This work is flowing in my blood sometimes I ask myself once I leave this job who will serve the children in my village, even though am in the move to quite this job (CHW, Mkuranga district)

For CHWs who are tired to work and wish to retire, it was observed that they fail to make decision of leaving the job because some community members will continue seeking their help. The desire of retirement is an indicator of ineffectiveness at providing the qualified services:

Sometimes I fail to make direct decision to leave the job, because many people know me since 2004. Therefore, there are those who appreciate my services and I hope they will tell other people to consult me. So the challenge become if a person came to seek help I cannot reject him/her just because I quitted from working as CHW I will help him/her (CHW, Bagamoyo district)

4.2 Discussion

4.2.1 Relationship between socio-demographic characteristics and applicability of learned knowledge

Generally, CHWs who reported applicability of required learned knowledge when performing their duties across all social demographic characteristics were 73%. This means that, the social demographic characteristics such as sex, age, marital status or education level have little/no influence on the applicability of CHWs trainings in the study area in Tanzania. Therefore, large percentage of CHWs perceived that their training applicability might have been caused by other factors. Various studies have shown diversity on effects of demographic characteristics on performance of CHWs; however, the current study found sex to have no influence on applicability of learned knowledge because of little variations in training applicability expressed between male and female. These results align with the findings from a study in Morogoro Tanzania which found no significant differences across sex in terms of knowledge in maternal and child health applicability (Feldhaus *et al.*, 2015). Likewise, similar results were reported in Kenya (Kawakatsu *et al.*, 2012; Mbugua, 2017). Findings from the current study differ from a study in Kenya and Zimbabwe where performance of CHWs was different across sex (Crispin *et al.*, 2012; Kambarami *et al.*, 2016).

The current study reports significant association between age and applicability of learned knowledge among trained CHWs in various aspects of maternal and neonatal health. CHWs whose age ranged above 40 years were more likely to apply the learned knowledge in maternal and child health as compared to those with age ranged below 40 years. These results are similar to the findings reported elsewhere (Mbugua, 2017). However, the findings differ from similar studies in Kenya, Zimbabwe and India which found significant association of CHWs performance among ages below 40 years as compared to ages above 40 years (Crispin *et al.*, 2012; Kambarami *et al.*, 2016; Kawakatsu *et al.*, 2012; Mbugua, 2017). Furthermore, these results differ from a study conducted in Morogoro region in Tanzania which found no significant association between age, knowledge retention and service provision (Urassa *et al.*, 2015).

There was no significant association between marital status and applicability of learned knowledge among CHWs who were trained on various aspects of maternal and neonatal health. These results align with findings from Busia district in Kenya which reported no association between marital status and performance of CHWs (Crispin *et al.*, 2012). However, the results differ from other studies in Morogoro region in Tanzania (Urassa *et al.*, 2015), Kenya and Zimbabwe which reported significant association between marital status and performance of CHWs (Kambarami *et al.*, 2016; Kawakatsu *et al.*, 2012).

In the present study, CHWs education level in thirteen districts of Tanzania had no association with applicability of learned knowledge by CHWs. This finding differ from studies done in Kenya, Nepal and India where education level was reported to be associated with performance of CHWs (Acharya *et al.*, 2016; Crispin *et al.*, 2012; Kawakatsu *et al.*, 2012; Sharma *et al.*, 2014). Since the data used to investigate the relationship between social demographic characteristics and applicability of learned knowledge were secondary, the researcher analyzed and presented the available data as they are. Therefore, the study propose future research to measure applicability of CHWs trainings using parameters stated in transfer of training theories instead of measuring applicability simply by using Participants perceptions.

4.2.2 Challenges facing community health workers in promoting maternal and neonatal health

This study noted that there were challenges facing applicability of trainings among CHWs. These include little participation from community members and local government, shortage of refresher training in maternal and neonatal care, irregular working schedules, unclear roles and responsibilities on neonatal health, heavy workload as well as becoming older and less effective in visiting households. Other observed challenges include little community member's participation resulted by jealousy among CHWs and male household heads, mistrust between CHWs and community members as well as social cultural beliefs.

Similarly, it was reported in Uganda and South Africa that jealousy raised conflicts between male CHWs and male head of households (Grant *et al.*, 2017; Nanyonjo *et al.*, 2012). To overcome jealousy as expressed by the current study, we suggest that preliminary survey on establishment of selection criteria for CHWs should be done by involving community members before selection process. Furthermore, jealousy imply that some community members might be not aware of CHWs roles and importance of their services and therefore, this calls for

community sensitization on importance of CHWs service delivery in maternal and neonatal health.

Mistrust as expressed by the current study occurred due to fear of breaching of confidentiality of pregnant women, who were HIV positive, and lack of identity cards among CHWs. Similar results on fear of breaching of confidentiality was reported in South Africa (Grant *et al.*, 2017). Lack of identity cards and uniforms was similar to what was reported elsewhere (Grant *et al.*, 2017; Nanyonjo *et al.*, 2012). Identity cards and uniform must be used by CHWs during household visits to build trust and increase the acceptance in the community (Singh-Prabhjot & Sachs, 2013). Provision of identity and uniform is a function of the local governments under which they work (Bhattacharyya *et al.*, 2001). Therefore, the study suggests that local governments should provide CHWs with identities to minimize resistance from community members. Similar results on social-cultural beliefs were reported in China whereby women were hiding their pregnancies due to fear of harm from enemies (United nations population fund, 2011.) The current study suggests that communities should be sensitized on the associated negative social-cultural effects in maternal and child health. However, little cooperation reported from community members indicates poor social influence and justifies the transfer climate theory which argues that, for employees to apply the training they received in their routing work they need to be supported by other people in their working setting (Jaidev, 2012). Therefore, these findings call for community member's cooperation to enable CHWs apply their trainings for maternal and neonatal health promotion.

Although literature has indicated political will as important aspect for CHWs program sustainability (Pallas *et al.*, 2013; USAID, 2015), the current study revealed some CHWs to have lost motivation to provide maternal and neonatal health services due to political party grievances from local leaders in their working places in Mkuranga. This indicates that CHWs face challenges in applying their knowledge to serve the community due to little cooperation from local government. Little government and local leaders cooperation justify the organizational theory which argues that, for employees to apply the trained knowledge to their job areas must have support from the organizations under which they work (Jaidev, 2012). To avoid political party grievances reported by this study it is recommended to have by-laws governing working relations when there is change in the village leadership in particular. In addition, political party grievances expressed in this study calls for successful integration of health program in the local governments (Mykhalovskiy *et al.*, 2009). Since the literature has shown that handling of CHWs program was given to Local governments (Kema *et al.*, 2012; Killewo *et al.*, 2012), this study

suspects that irregular working schedules expressed were results of little cooperation and supervision from local leaders. Furthermore, it is suggested that CHWs program sustainability should not end up handing over program to the Local Governments without empowering local leaders on CHWs program sustainability strategies such income-generating activities and management of CHWs (Hajdu *et al.*, 2011). The income generating activities by local governments for CHWs sustainability would enable to overcome challenges such as identity card production and refreshers training materials and allowances. Generally, the financial related challenges including lack of identity cards, uniform and allowances in this study justify the expectancy theory by vroom 1964, that says employee tends to apply the learned knowledge from training because of individual needs or outcomes from the job such as rewards, promotions and job satisfaction (Jaidev, 2012; McMenemy & Lee, 2007).

The current study noted a gap related to poor and even no care at early postnatal period as an indication of unclear role and responsibilities of CHWs. This is contrary to what has been shown in the literature about the potential role of CHWs at early postnatal period, including assessment of maternal and newborn danger signs, promoting hygiene practices and exclusive breastfeeding (Bhutta *et al.*, 2010; Okuga *et al.*, 2015). The possible reason behind non-provision of maternal and neonatal care by CHWs in their working areas might be due to unclear roles and responsibilities as well as they are not aware of some of their roles. These findings justify the goal setting theory by Locke 1960s, that says employee are motivated to apply what they learnt in the training only if they had certain purpose when attending the training (Jaidev, 2012; Lunenburg, 2011). This study suggests that there should be management teams for CHWs from the local governments and health facilities for proper guidance of CHWs such as in provision of guides defining their roles.

The irregular working schedules might be due harsh economic conditions facing CHWs, poor management and supervision for CHWs. Majority of CHWs were mainly working on non-health related roles including income-generating activities such as designing clothes as reported by the current study. This was consistent with other studies reported elsewhere (Bertoncello *et al.*, 2015). While in Ethiopia health extension workers were reported to use most of their time in doing health related activities (Mangham-Jefferies *et al.*, 2014). Although CHWs work under volunteer basis, the current study suggests that to strengthen CHWs applicability of their trainings in maternal and neonatal health there should be effective management and supervision including establishment and implementation of defined working days and hours.

Some old CHWs failed to provide care because of physical inabilities such as loss of eyesight and energy for walking large distances to make household visits. This calls for CHWs reforms taking into consideration the issue of retirement and selection of newly CHWs for replacement.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The present study aimed at determining whether trained CHWs apply learned knowledge when performing their duties so as to improve maternal and neonatal health status. The study, further explored challenges facing community health workers in applying learned knowledge. Generally, CHWs who reported applicability of required learned knowledge when performing their duties across all social demographic characteristics were 73%. This means that, the social demographic characteristics such as sex, age, marital status or education level have little/no influence on the applicability of CHWs trainings in the study area in Tanzania. This study found significant association between age and applicability of learned knowledge among trained CHWs. Community health workers aged above 40 years were more likely to apply the learned knowledge in maternal and child health than those aged below 40 years. Furthermore, this study found several challenges reported to hinder knowledge applicability among CHWs. These include; little participation from community members and local government, shortage of refresher training in maternal and neonatal care, irregular working schedules, unclear roles and responsibilities on neonatal health, heavy workload as well as becoming older and less effective in visiting households, little community member's participation resulted by jealousy among CHWs and male household heads, mistrust between CHWs and community members as well as social cultural beliefs.

5.2 Recommendations

Based on the findings, this study recommends the following:

(i) Recommendation for the community members

- (a) More effort is required to educate the community members on their roles towards ensuring sustainability and successfully integration of CHW programs in the community.
- (a) Community members should understand the responsibilities of CHWs and the importance of community member's cooperation to CHWs.
- (a) Innovative behavioral change campaign to discourage socio-cultural beliefs that affect maternal and neonatal health promotion is required.

(ii) Recommendation for the government

- (a) To avoid political grievances of local leaders to CHWs local government need to have by-laws governing working relations when there are changes in the village leadership.
- (a) Although the Government has planned to deploy certified CHWs and this has not been implemented yet, this study recommend refresher training cause to the existing volunteer CHWs to improve their understanding on various aspects of maternal and child health.
- (a) To increase working motivation of CHWs the study recommends the government to conduct community mobilization for CHWs incentives. Not only that but also establishment of sustainable income generating activities at the village government level for sustainable provision of incentives for CHWs.
- (a) A clear scheme for recruitment and training of new CHWs should be established to give room for those who wants quit and avoid high workloads for the remaining CHWs.
- (a) To enhance community-based health care promotion the Ministry of health should have clear stipulated roles of CHWs on maternal, neonatal and child health to build autonomy among CHWs rather depending on availability of projects.

(iii) Recommendation for future research

- (a) Future research should focus on understanding management structures of CHWs and their roles towards existing volunteer CHWs programs. This will open up the way for reduction of most of challenges facing CHWs.
- (a) Future research should test variables from theories of transfer of training to measure training applicability quantitatively instead of quantifying the perceptions of CHWs to determine their training applicability.

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APPENDICES

Appendix 1: Instrument for data collection (English – version)



Section A: Personal Particulars

A1	District	
A2	Ward	
A3	Village	
A4	Sex	Male....1 Female....2
A5	Age	
A6	Marital Status	Married....1 Single....2

		Divorced...3 Widowed...4
A7	Level of Education*	_ _ _ _ _ _ _ _ _ _

***Instructions on the level of education**

For the years of education of the health facility client, if he/she studied up to class 7 (standard 7) write 7. If she /he learnt up to form four (4) fill 11 if is less than one year fill 0. If she / he is unable to answer the question, fill 99.

QUESTIONS

- (i) What is your role as a Community Health Worker (CHW) in the area where you live and work?
- (ii) When you are carrying out the above work, how many hours per day do you usually spend on this work?
- (iii) In the last 4 weeks, how many visits did you make?
- (iv) Why did you choose to become a CHW?
- (v) How does one get selected to become a CHW?
- (vi) How does one get selected to become a CHW?
- (vii) As a CHW, what challenges do you face in accomplishing your duties? Probe: state the challenges specifically to the services provided during ANC, Delivery services, PNC
- (viii) Do you get any support from village leaders?
- (ix) What types of support do you receive from the village government?
- (x) How do you benefit in doing CHW activities?
- (xi) In the last 3 years, did you receive any training on Maternal, child and newborn health?
- (xii) In the last 3 years, did you receive any training on breastfeeding or complementary feeding?
- (xiii) How would you assess the training overall in relation to the way the course was delivered (timing, duration and how well the trainers taught the course)?
- (xiv) Do you think breast milk is enough for a child during the first 6 months?

- (xv) What condition of a child will make you advise the mother or caretaker of the child to rush to seek care from a health facility? How would you ensure that pregnant mothers obtain health/antenatal care from the health facilities

Thank you for your cooperation.

Appendix 2: Clearance certificate



INSTITUTIONAL REVIEW BOARD
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31st January, 2019

National Institute for Medical Research
P O Box 9653
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Kabula Jumanne,
Ifakara Health Institute,
P O Box 74,
Bagamoyo.

IHI/IRB/No: 03 - 2019

INSTITUTIONAL CLEARANCE CERTIFICATE FOR CONDUCTING HEALTH RESEARCH

On 25th January 2019, the Ifakara Health Institute Review Board (IHI-IRB) reviewed the study titled: *“Factors affecting the role of community health workers in promoting maternal and neonatal health in Tanzania”* Submitted by Principal Investigator: Kabula Jumanne.

The study has been approved for implementation after IRB consensus. This certificate thus indicates that; the above-mentioned study has been granted an Institutional Ethics Clearance to be conducted in (Bagamoyo and Mkuranga Districts) Tanzania.


The following documents were reviewed and approved:

1. Study Protocol
2. Informed Consent Forms English and Kiswahili versions
3. Data collection tools in English and Swahili
4. Budget and budget justification
5. Investigators' CVs

The Principal Investigator of the study must ensure that, the following conditions are fulfilled during or after the implementation of the study:

1. PI should submit a six month progress report and the final report at the end of the project
2. Any amendment, which will be done after the approval of the protocol, must be communicated as soon as possible to the IRB for another approval
3. All research must stop after the project expiration date, unless there is prior information and justification to the IRB
4. There should be plans to give feedback to the community on the findings
5. Any publication needs to pass through the IRB
6. The approval is valid until 31st January 2020.

The IRB reserves the right to undertake field inspections to check on the protocol compliance


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Appendix 3: Research Permit

HALMASHAURI YA WILAYA YA MKURANGA

(Barua zote ziandikwe kwa Mkurugenzi Mtendaji Wilaya)

Simu Na 023 2402738
Fax Na. 023 - 2402706



S.L.P 10,
MKURANGA,
PWANI.

Unapojibu tafadhali taja:

Kumb. Na. MDC/D. 30/28/VOL.II/110

15/03/2019

Mganga Mkuu (W):-

- Hospitali ya Wilaya,
- Vituo vya Afya,
- Zahanati,

MKURANGA.

MGANGA MEAWIDI
ZAHANATI YA KITEMENDO
S.L.P 10 MKURANGA

**YAH: KUMTAMBULISHA MWANACHUO KABULA JUMANNE ANAYEFANYA
UTAFITI KAMA SEHEMU YA MAFUNZO KWA VITENDO YA SHAHADA
YA UZAMILI KATIKA SAYANSI YA AFYA YA JAMII**

Husika na mada tajwa hapo juu.

Napenda kumtambulisha kwenu Kabula Jumanne ambaye amekubaliwa kufanya utafiti wa kwa vitendo katika sayansi ya afya ya jamii. Utafiti huu anafanya katika Hospitali ya Wilaya, vituo vya Afya na Zahanati za Mkuranga ambayo imechaguliwa kama eneo mojawapo ambalo taarifa hizi za utafiti zinaweza kupatikana kwa ufanisi.

Kwa barua hii unatakiwa kutoa ushirikiano kwao.

Nawatakia kazi njema,

Emile M. Kibada

**Kny: MKURUGENZI MTENDAJI (W)
MKURANGA**

Nakala kwa: Mkurugenzi Mtendaji, **MKURANGA**
MKURANGA - aione kwenye jalada.

HALMASHAURI YA WILAYA YA BAGAMOYO

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KUMB Na.HWB/M.10/53/115

Mkuu wa Chuo
Taasisi ya Afya Ifakara (I.H.I.)
S.L.P 74,
BAGAMOYO



Ofisi ya Mganga Mkuu (W)

S. L. P. 29

BAGAMOYO

28/02/2019

YAH: KIBALI CHA KUFANYA MAFUNZO KWA VITENDO MWANACHUO KABULA JUMANNE

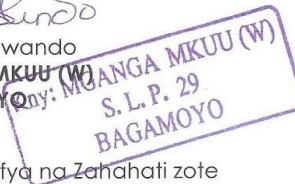
Tafadhali husika na mada tajwa hapo juu, pia rejea barua yako ya tarehe 14/02/2019.

Ofisi ya Mganga Mkuu Wilaya imekubali kutoa kibali cha kufanya mafunzo kwa vitendo mwanachuo aitwaye **Kabura Jumanne** ambaye anasoma Shahada ya Uzamili katika Sayansi ya Afya ya Jamii.

Kwa barua hii, ninampa kibali cha kufanya utafiti katika Wilaya ya Bagamoyo.

Nikutakie utekelezaji mwema

Veronica Shegwando
Kny: **MGANGA MKUU (W)**
BAGAMOYO



Nakala: Waganga Wafawidhi wote
Hospitali ya Wilaya, Kituo cha Afya na Zahanati zote
BAGAMOYO

Watendaji Kata Wote
Halmaashauri ya Wilaya
BAGAMOYO

Kabura Jumanne

RESEARCH OUTPUTS

(i) Publication

Jumanne, K., Pasape, L., Moshi, R. I., & Mrisho, M. (2021). Challenges facing community health workers in promoting maternal and neonatal health in Bagamoyo and Mkuranga districts, Tanzania. *Ghana Medical Journal*, 55(2), 118-127. doi: <http://dx.doi.org/10.4314/gmj.v55i2>.

(ii) Poster Presentation