

# Parents' Attitudes About Gender Roles In Caregiving And Practices: Perspectives From A Community-Led Parenting Empowerment Program In Rural Kenya And Zambia

**Kenneth Okelo** (✉ [kenato9@gmail.com](mailto:kenato9@gmail.com))

African Population and Health Research Center

**Silas Onyango**

African Population and Health Research Center

**Dawn Murdock**

Episcopal Relief & Development

**Kaylie Cordingley**

Episcopal Relief & Development

**Kelvin Munsongo**

Zambia Anglican Council Outreach Programmes (ZACOP)

**George Nyamor**

Anglican Church of Kenya Development Services-Nyanza (ADS-Nyanza)

**Patricia Kitsao-Wekulo**

African Population and Health Research Center

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## Research Article

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## Abstract

**Background:** This study was part of a project funded by the Hilton Foundation in partnership with Episcopal Relief and Development to conduct implementation research in rural communities in Kenya and Zambia. This involves testing the feasibility and effectiveness of community-based parenting empowerment in improving nurturing care of young children in rural communities in Zambia and Kenya. Few studies have investigated fathers' roles in nurturing care of young children (birth-age to 3), particularly responsive care and stimulation (i.e. providing opportunities for early learning) in sub-Saharan Africa (SSA). Fathers are often perceived to be mainly responsible for the provision of the family's economic needs. However, past studies have demonstrated that fathers' involvement in parenting has great significance for the child's holistic growth and development.

**Methods:** Qualitative interviews and discussions with caregivers (primary caregivers and secondary caregivers) with children below three years, program volunteers (ECD Promoters and faith leaders), *Moments That Matter* Program implementers and government officials involved in the program implementation. The study reported in this paper aimed to establish the effects of the parenting empowerment program on more gender-equal attitudes about gender roles in parenting and actual caregiving practices by fathers (who are not the primary caregivers), after participating in the *Moments That Matter* (MTM) Program in Kenya and Zambia for 24 months. Qualitative data were collected at three-time points (baseline, midline and endline).

**Results:** The findings show that the MTM Program resulted in improved gender-equal parenting attitudes and practices among mothers/other primary caregivers and fathers. Study participants reported that most fathers were actively involved in parenting and caregiving due to their participation in the MTM Program.

**Conclusion:** The study findings provide evidence that targeted parenting programs can influence changes in perceived gender roles in parenting.

## Background

In many communities particularly within sub-Saharan Africa (SSA), fathers play an important role in decision-making within the home and are traditionally considered the main breadwinners (1). Other studies indicate that both men and elderly women support patriarchal gender divisions of labor, that it is women who are primarily responsible for early life nutrition and care (2). A mother's responsibility in parenting used to include all "activities within the home, such as feeding, cooking, bathing and cleaning the house" (3). The role of fathers in most cases is limited to providing financial support or to being the breadwinner who must ensure that the household has enough food. Their role in parenting was perceived as an authoritarian discipliner and their relationship with their children was often characterized by fear. These roles and responsibilities based on a person's gender are usually reinforced during traditional lessons that a couple undergoes before they get married. Many fathers still believe that caring for a child is mainly the responsibility of the mother, especially during the first one to two years of a child's life (2).

A father figure in the child's environment is more likely to help the child learn that caring is part of masculinity as well as femininity (4). Moreover, both parents' involvement in childcare has significant benefits for children's development (5), survival and health. For instance, father-child interaction has been shown to improve children's cognitive, social, language and emotional development (6). Other examples of positive long-term effects of father involvement include better social functioning during childhood, higher educational attainment and lower incidences of delinquency and criminal behavior (7). Further, the involvement of fathers early on in a child's life results in the father's satisfaction which in turn leads to a greater likelihood of sustained involvement as the child grows older (8).

Interactions between the father and the child may mirror representations and recollections of the father's own childhood experiences (9). Beliefs about gender roles have also been cited as a major factor hindering fathers' participation in childcare (10). Other barriers that have been identified include social-cultural issues, limited maternal health knowledge, and stigmatization of fathers who participate in roles attributed to females, health structures and poor information on the importance of fathers' involvement (11). Such barriers can be addressed through parenting empowerment programs.

Gender-responsive parenting initiatives have shown potential for positive gender norm change (12). Such programs with a strong emphasis on the engagement of male caregivers in gender-responsive caregiving have yielded positive outcomes. Four initiatives by UNICEF in Nepal, Sri Lanka, Ghana, and Tanzania reported improved father involvement in childcare (12). Such initiatives integrated stronger gender equity focusing into ongoing work in early childhood development (ECD) promoting good nutrition. Despite the profound role played by such gender-responsive parental programs in changing gender norms, few programs have been implemented in sub-Saharan African countries like Kenya and Zambia.

The *Moments That Matter* Program (MTM), a program partnership of Episcopal Relief & Development, takes a parenting empowerment approach to integrated early childhood development from birth to three years. This program also aimed at improving fathers' participation in caregiving practices. The MTM was implemented for two years with vulnerable families (13). The MTM Program promotes parental empowerment, bonding and interactions in the home between Caregivers and their children, focusing on responsive care, early learning, and security and safety so that children reach their full developmental potential. Trained ECD volunteers facilitated monthly Caregiver Support & Learning Groups combined with

ECD home visits. In addition, MTM training faith leaders and the use of male ECD volunteers also reinforced male caregivers' involvement in parenting.

The study reported in this paper aimed to establish the effects of the parenting empowerment program on more gender-equal attitudes about gender roles in parenting and actual caregiving practices by fathers (who are not the primary caregivers), after participating in the *Moments That Matter* (MTM) Program in Kenya and Zambia for 24 months.

## Methods

### Study design

The study reported in the current paper was a longitudinal qualitative study that was part of a quasi-experimental study in which caregiver-child dyads were assigned to the intervention (to receive the MTM Program) and the control arm (to receive the standard care i.e. routine child health monitoring delivered by the community health volunteers) (13). The villages or clusters were purposively selected, taking into consideration such factors as poverty levels and the number of families, to make them as comparable to each other as possible with regards to their demographic characteristics. In Kenya, three clusters from each of the two sub-locations within the program implementation sites and six clusters from a third sub-location where there were no program activities were selected. While in Zambia, ten communities serving as the clusters were formed by grouping villages within the Chamuka area program site. Within the study area, villages were randomly selected from program sites and stratified at the cluster/community level to reduce potential contamination among study arms. Three to four villages (depending on the number of households in each village and geographical location) were clustered into five "community" program implementation sites from one ward (Mwantaya) and allocated to the intervention arm, and five communities located in a different ward (Chamuka) were allocated to the control arm (13). At the baseline study, households with primary caregivers who were in their third trimester of pregnancy or had children aged below 18 months were randomly selected for inclusion into the study.

### Sampling and sampling characteristics

In the main study in Kenya, 244 primary caregivers were recruited at baseline and 121 were followed up at endline surveys (32.3% attrition rate) total in the intervention and control arms. The research team also recruited more (N = 44) study participants from the intervention arm who had been participating in the MTM Program activities totaling the number of study participants in the intervention arm at the endline to 165. In Zambia, the research team recruited 395 primary caregivers at baseline, with children aged below 18 months or were pregnant and were in their third trimester) were identified and recruited and 194 followed up at endline. The attrition rate was 43.9% (n=92) in the intervention arm and 52.8% (n=109) in the control arm. In both countries, slightly above three-quarters of the respondents mentioned that they had a father present in their household (13).

In the study reported in this paper, the research team used two types of purposeful sampling strategies for qualitative data collection. Purposeful sampling enabled us to identify and select information-rich cases for the phenomena under study. The theoretical assumption underlying the sampling of participants for the qualitative interviews is the attainment of the data saturation point, that is, the point at which no new substantive information is obtained from additional interviews (14). The selection of respondents for the qualitative interviews was based on a) maximum variation sampling to document or identify unique or diverse variations within a homogenous population, and to enable the identification of common patterns that emerge; and, b) the selection of homogenous cases to facilitate group interviewing (15). Whereas maximum variation sampling allowed us to identify differences among the respondents, homogenous sampling focused on identifying similarities among those who were interviewed (Table 1).

Table 1  
Participant characteristics

Interview type	Participant category	Gender		Marital status		Education level		Main occupation			Mean age
		Male	Female	Not married	Married	Primary and below	Post primary	Employed	Self-employed	Unemployed	
IDIs	ECD Promoter	8	19	3	24	7	20	3	28		33
	Lead ECD Promoter	6	10	2	14	2	14	2	8		30
	ECD committee: Chair, other officials, member	14	7		21	0	21	15	6		42
FGDs	Primary caregivers		72	10.8	61.2	54	18	8	40	24	32
	Secondary caregivers	24	0	0	24	12	12	8	7	8	38
	<b>MTM-trained faith leaders</b>										
	CHVs	12	31	2	41	32	11				39
KII	Program staff	2	6	1	7	0	8	8			40
	Policy implementers	2	3		5	0	5	5			42

## Study setting

The study was conducted in similar rural areas in two countries, Kenya and Zambia.

### Kenya

the study was conducted in Kisumu County in Boda1 and Ayucha sub-locations in Awasi-Onjiko Ward within Nyando sub-County, Kisumu County in the Nyanza region is among the 47 semi-autonomous county governments, which were formed after the promulgation of the Kenyan constitution in 2010. Every county is further subdivided into sub-counties and wards for ease of administration (16, 17). Kisumu County has an overall poverty rate of 32.5% (18). The county has six administrative sub-counties (Kisumu West, Kisumu East, Kisumu Central, Seme, Nyando, Nyakach, and Muhoroni). Nyando sub-County has five wards (Awasi/Onjiko, Ahero, Kabonyo/Kanyagwal, Kobura, and East Kano/Wawidhi) with a total population of 141, 037. Males account for about 51% of the total population.

**Zambia:** The study was conducted in the Chamuka area of Chisamba District of Central Province. Central Province has an overall poverty rate of 61%, and an extreme poverty rate of 37%. The level of rural poverty is three times that of urban areas (19). The Chamuka area has over 30 villages in two wards, Mwantaya and Chamuka Wards (note: Chamuka Ward has the same name as the larger area). The infant mortality rate is 42 deaths/1000 live births (13).

## Data collection procedure

We conducted qualitative interviews (focus group discussions [FGDs] and in-depth interviews [IDIs]) with fathers, primary caregivers, community volunteers, MTM Program implementers and government policy implementers to establish their perceptions on gender roles in parenting. Trained field interviewers who had a graduate qualification and experience in conducting qualitative interviews conducted interviews. The field interviewers were trained for five days by the research team. The training involved theoretical sessions, role plays and a field pilot to ensure that the interviewers were conversant with the interview guide. The interview guides were further refined based on the feedback from the pilot exercise.

Each interview was managed by a pair of field interviewers i.e. a moderator who led the discussion and an assistant who took notes from the discussions. The FGDs with caregivers, community volunteers, religious leaders and Community Health Workers (CHVs) were conducted in the most commonly used language used in these communities (Dholuo in Kenya and Tonga and Njanja in Zambia). Key informant interviews (KIIs) with sub-county/District officials and program staff were conducted in English. In addition to taking notes, all the discussions and interviews were audio-recorded with the consent of the participants to maximize the completeness of the information collected and reduce the risk of data

loss. The field supervisor reviewed the notes and the audio files to ensure that all the items in the interview guide were comprehensively covered. The length of FGDs varied from one to one-and-a-half hours while the KIs were between 45 minutes and one hour.

## Analysis

The audio-recorded files from the interviews were transcribed in English and anonymized by a qualified and experienced transcriber. After the transcription, the research team checked each transcript for accuracy and quality assurance hereby ensuring that the transcripts represented the information in the audio-recorded files. The research team including the principal investigator, a qualitative researcher and three junior researchers then used the interview guides and initial transcripts to identify the main themes and sub-themes. This informed the development of the codebook. Then the research team further used the codebook to code the rest of the transcripts. All the coded data were then classified and analyzed through word trees and queries in Nvivo Q 10 Software using thematic content analysis(19).

## Results

We present information on how the MTM Program has improved community members' attitudes about more equitable gender roles and fathers' involvement in caregiving. This includes; attitude changes, knowledge gained and parenting behavior change. We explored the type of attitudes and behaviors that existed before the program implementation (baseline) and point out any changes that may have occurred during the program implementation (midline) and after two years of the implementation period (endline).

### Attitudes towards gender equality in parenting

At baseline, most respondents reported that childcare was the sole responsibility of mothers or the primary caregivers. Fathers were reported to be undertaking childcare responsibilities when mothers were unwell or not at home. Fathers and mothers narrated that the separation of parenting responsibilities stemmed from how they were brought up.

*"They provide money to buy food for the children if you don't have or as a mother you can buy for them some clothes so that they have a better life" FGD with primary caregivers, Zambia at baseline*

*"Children in the past, just like it was when we were growing up, weren't free around their fathers. Fathers would chase the child asking the mother to get their child as though the mother was the only person responsible for birthing the child. Today's children who were born into this program have no reason to fear their parents. Children and other parents from back in our time get surprised that fathers are taking care of children, playing with them. They say we have spoiled them." FGD with Primary Caregivers, intervention, Zambia at endline*

*"In the past, the way we were raised, my father or my elder brother were like lions, whenever they entered a house, I would always look for a door in order to try and escape, but these days they teach us to be friendly with the children, these days' children are not afraid of us, we also hug the children." FGD with fathers, intervention, Zambia at endline*

This notion changed at midline and further changes were noted at endline. At the endline, in both countries, Primary Caregivers mentioned in the qualitative interviews that fathers had embraced the notion that they could also provide caregiving. Primary Caregivers added that fathers were more involved than before; they had become close to their children, were involved in play with their children and supported their wives during pregnancy and with different household activities such as cleaning. Through fathers' participation in the program activities, their parenting skills seemed to have improved.

*"After sharing the knowledge we received through the MTM Program with our husbands, they are now involved in caring for their families. They feed their children, take them to the clinic, and support wives during pregnancy... Previously, fathers used to think that their responsibility was only to provide materially for their families. Nevertheless, after the training, they changed their attitude. They now play with children and care for pregnant mothers. For instance, he postpones other activities to care for pregnant mothers and provides a balanced diet too." FGD with female Primary Caregivers, intervention arm, Kenya at endline*

*"Male caregivers are involved more in caring for their children. Some take time to stroll with their children as their wives care for other activities. Furthermore, fathers take their children to school both in the morning and evening besides making play items for them." IDI with ECD Promoter, Kenya at endline*

Notably, in the control arm, secondary caregivers also mentioned attitudinal changes towards caregiving. However, their sentiments were centered only on the provision of basic needs and psychological support to the mother during pregnancy. It was evident in the control arms that many caregivers still hold the opinion that caregiving was the sole responsibility of mothers for children below two years.

*"The work of a mother in parenting children is to take full care of the children, cooking good food like porridge for babies, washing their clothes, taking the child to the nearest health post for under-five." FGD with fathers, control, Zambia at endline*

*"The woman is the one who spends the most time with children, we men can have things like work, but if women spend too much time away from the child, then the child will not breastfeed well, and their health will go down. If the child is one year and six months old and is left with fellow children with no proper food, the children will not take care of that child the way the mother would. We men can be close to the child even from birth, but we only have a hand in the child's life when they are old enough to be away from the mother when we can carry the child to the market or something of that sort."* FGD with fathers, control, Zambia at endline

### **Parenting behavior change toward gender equal roles**

In both countries, before the implementation of the MTM Program, parenting responsibilities were delineated according to gender. Mothers were entirely responsible for their children. Activities such as bathing, feeding, dressing, healthcare, and spending time with children were the sole mandate of mothers. Fathers were expected to provide enabling means to mothers. However, both mothers and fathers provided information during qualitative interviews on how the MTM Program has influenced gender roles in not only parenting but at the household level in general.

The participants from the intervention arm mentioned that secondary caregivers were more involved in household chores. The respondents attributed these changes to the MTM Program activities. ECD Promoters also reported that through the mentorship they provided during household visits and Caregiver Group meetings, male caregivers had become more positive about participating in childcare and household chores.

*"After the ECD training, both male and female caregivers participated in childcare and doing other domestic chores.... They are responding well. We can now see fathers cooking for their expectant wives besides going to the facility for clinics. Even this morning, I saw a father carrying a child... The fathers are helping their wives with some chores at home. When we are conducting our routine household visits, they warmly welcome us even in the absence of their wives."* IDI with Lead ECD Promoter, Kenya at endline

*"In the past, I used to leave all the house chores in the hands of my wife. She was doing everything. Nowadays I help her with the chores in the house... I hold the baby, do the washing and cooking."* IDI with a secondary caregiver, intervention arm, Kenya at endline

*"You'll find that you're tired from working in the field and so is your husband, but they will still want you to get home and do all the chores including taking care of the child. So, we have been taught that fathers are also supposed to take up a supportive role in the upbringing of children."* FGD with female Primary Caregivers, intervention, Zambia at endline

*"I never used to play with my child or clean him when he poops, and when the child does something wrong, I was quick to get a whip to beat the child but I don't do all these things."* FGD with fathers, intervention, Zambia at endline

*"The program has taught us a lot, especially regarding gender. We never knew that men could also have a role in the upbringing of their children. Even if you went far and you come back, you will find your husband has cooked, fed the children, and even put water for you to bathe. We would in the old days do all these tasks, but that's not the case today."* FGD with female Primary Caregivers, intervention, Zambia at endline

The MTM Program positively influenced sharing of household and parenting responsibilities among mothers and fathers. Fathers had become closer to, increased spending time with their children, and had taken up more responsibilities. Thus, fathers' emotional relationship with their children has improved significantly, which in turn provides a more enabling environment for children to thrive. In addition to an improved relationship between fathers and children, the enhanced participation of fathers in daily household routines has also resulted in overall improved relationship quality between spouses.

*"Through what we learnt I have seen that it is good for us to help each other, therefore, the only job that I know is strictly for the woman is giving birth, but the rest we can help each other. All of us can help, washing especially should be for men, for example, when the woman is pregnant and about to deliver... they may keep her for some days at the clinic. When she is away, I have to bathe my children. What am I going to lose by bathing my children? So everything we need to do is to help each other."* FGD with fathers, intervention, Zambia at endline

*"Yes, there has been an improvement in my relationship with my wife. In the past, she was not happy, because she could not express herself properly to me. But now that I have learnt, she is more open to me, so there is an improvement in the way we relate, she has the freedom and can count on me for help."* FGD with fathers, intervention, Zambia at endline

*"It is very true, I never had time to listen to a woman and her opinion, when she was giving me advice, I just thought she was wasting my time, but through the lessons, I have learnt to value her opinion, these days when she says something we sit together to discuss what she thinks."* FGD with fathers, intervention, Zambia at endline

### **Participation in the uptake of MCH services**

In both countries, before the MTM Program, seeking healthcare for children was usually seen as the mothers' responsibility. This meant that mothers had to walk long distances with their children tied on their backs to attend the monthly under-five clinic or seek healthcare when the child

felt unwell. Most fathers did not participate in this task and many did not show interest in a child's health/physical development. At endline, the qualitative interviews revealed that the participants perceived that the MTM Program had improved male caregivers' participation in the MCH services such as ANC services, nutrition and immunization, and preventive services including attending sessions on proper handwashing. They reported that more male caregivers accompanied their wives to the hospital.

*"In the past, my husband never bothered with my antenatal visits. After the training, he now inquires about my clinical visits and even accompanies me to the hospital. At home, he discourages me from stressful duties and advises me. This makes my work easier.. Previously, my husband believed that taking children to the hospital was the role of the mother. Recently, when I was sick, he took the child to the clinic when the child became ill."* FGD with female Primary Caregivers, intervention arm, Kenya at endline

*"Fathers are now taking children to clinics and are involved in processing birth certificates."* IDI with Lead ECD Promoter, Kenya at endline

*"The benefit I found is that long ago things were hard for women because here the health center is very far, but now the fathers help in taking care of the children even taking them to the clinic, but in the past, he would just leave everything to me to carry the child to the clinic."* FGD with female Primary Caregivers, intervention, Zambia at endline

*"Me on my part, the benefits I have seen in my life are a lot, for example when my wife is going to the clinic for under five, I will get the child and put it on my back and then she will only get her handbag. I even see her get happy."* FGD with fathers, intervention, Zambia at endline

*"There is change because of the teaching they give us. We see fathers carrying their children on the back and going to the clinics that never used to happen. They even bathe their children, even in our community we have seen the change. We see fathers feeding their children and doing things that they never used to do."* FGD with fathers, intervention, Zambia at endline

It is somewhat remarkable that fathers engaged in what is traditionally seen as the responsibility of a woman in the community despite resistance and mockery from other fathers in the community. Fathers narrated that men who helped their wives in chores that were perceived to be a woman's responsibility were considered fools, weak, or bewitched.

*"The other issue was escorting the wife to the clinic when our child was sick. Other men used to laugh at me, but these days I just consider them as fools and ignore them, even if they laugh, because I know the benefits of helping and taking care of my child. I just get my bicycle and take the child to the clinic, I don't hesitate."* FGD with fathers, intervention, Zambia at endline

*"Helping my wife carry firewood, if I help her carry the heavy ones, they will say she has finished me as a man, and I have just become a fool."* FGD with fathers, intervention, Zambia at endline

*The community people used to laugh at me for example, when I carry my baby on my back, the moment I leave home people will start laughing at me, they will say I am a fool and my wife has given me charms."* FGD with fathers, intervention, Zambia at endline

## Discussion

This study aimed to examine whether gender roles and fathers' attitudes, knowledge, and childcare practices changed as a result of participation in the MTM Program. From the findings, participants had gained knowledge about gender roles in parenting which was demonstrated through male caregivers' involvement in childcare. The current study shows an attitude and behavior change on parenting responsibility, especially on responsive caregiving and stimulation practices. Earlier evidence shows that spending time with the child leads to improvement in language and social skills (20). Studies have also shown the importance of a father's involvement in childcare responsibility such as improved developmental outcomes for children and women's economic empowerment (4). Therefore, their increased involvement in caregiving activities has the potential of improving child development outcomes.

Notably, some participants still held the opinion that due to the nature of the father's work in the rural communities, they might not find adequate time to engage their children in play and stimulation activities. A similar finding shows limited caregiving activities among fathers, which have been associated with the fathers' childhood experiences (9). In most rural communities in Africa, parenting roles are delineated based on gender (21). This separation of parenting roles along gender lines often resulted in a complete separation between fathers and their children (21). Such gender norms are often more evident in African rural communities in which it dictates responsibilities inside and outside the households. Evidence from other studies shows that fathers have unique roles in childcare that may differ from those of mothers as demonstrated in this study; some are actively involved in caregiving roles. Findings from other studies also indicate the important role played by fathers-child interaction on children's cognitive, social, language and emotional development.

Widely held societal beliefs that women are responsible for childcare inform women being the main beneficiaries and receivers of information and programs involving children. In addition, childcare policies emphasize mothers, especially women of reproductive age, pregnant and lactating mothers. Such policies on breastfeeding, maternal and child health, maternity leave have led to development programs that support

women in caregiving activities (22). These programs have improved child development and the mother's health outcomes. However, there are a few policies on fathers' participation in childcare. While women are the primary focus in stimulating children's development outcomes in the first three years of the child's life, in some communities they have limited decision-making power and resource allocation (23). Therefore, policies and programs need to focus on empowering both parents to promote the holistic growth and development of their children.

### **Study Limitations**

One of the limitations of this study is that since the data were self-reported, there was the risk that fathers exaggerated their responses to increase social desirability, or under-report on those aspects that they considered being problematic. However, this was mitigated by qualitative interviews with other respondents such as primary caregivers, program implementers, religious leaders and policy implementers who reported fathers' attitude and behavior changes on gender roles in parenting.

## **Conclusions**

In conclusion, perception of more equitable gender roles in parenting and fathers' participation in childcare improved among the program participants with most of them reporting that fathers are actively involved in parenting and caregiving activities due to their participation in the MTM Program. Those who reported low participation in parenting/childcare pointed out gender stereotypes as major barriers to their participation. Therefore, a community-based parenting empowerment program could be instrumental in addressing such stereotypes and demonstrated in the present study.

## **Abbreviations**

ACK-Anglican Church of Kenya

ADS-Nyanza-ACK Development Services of Nyanza

APHRC-African Population and Health Research Centre

ECD-Early Childhood Development

ESRC - Ethics and Scientific Review Committee

HIV/AIDS -Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome

IRB - Institutional Review Board

KAP-Knowledge, Attitudes, and Practices

KCSE- Kenya Certificate of Secondary Education

LMICs-Low- and Middle-Income Countries

MOH- Ministry of Health

NGO - Non-Governmental Organization

SSA - sub-Saharan Africa

## **Declarations**

### **Ethics approval and consent to participate**

This study has received ethical approval from Amref Health Africa's Ethics and Scientific Review Committee in Kenya (ESRC P467/2018) and ERES Converge in Zambia (IRB No.00005948). Study authorization was received from the National Commission for Science, Technology, and Innovation (NACOSTI) in Kenya and the National Health Research Authority (NHRA) in Zambia. At the local level, we sought permission from county and district officials to engage with the caregivers. The study investigators had training in human subject protection in research and observed the guidelines and principles of research on human participants during the research.

The data collection team were carefully trained on research ethics including full disclosure, respect for persons, seeking informed consent and confidentiality to minimize harm to the respondents. All data were kept confidential and personal identifiers were removed and replaced with a number from analytical datasets shared with researchers. Databases was password protected to control access to non-authorized persons. All

investigators, field supervisors, interviewers, and data, translators and analysis personnel also signed a confidentiality agreement before getting access to the data. The form stated that they will keep the data safe and will not reveal any identifiable information about study participants.

In addition, all methods were carried out in accordance with relevant guidelines and regulations of declaration of helsinki. Such as respect for individuals, the right to make informed decisions, recognition of vulnerable groups.

### **Informed Consent Process**

The data collectors sought informed consent from all study participants before being interviewed. For those who were not able to read, the information sheet was read to them in their local language and they were asked to provide a thumbprint to signify their consent. The use of a thumbprint or signature was approved by the ethical research committees in both countries (Amref Health Africa's Ethics and Scientific Review Committee in Kenya and ERES Converge in Zambia).

### **Consent for publication**

Not applicable.

### **Availability of data and materials**

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### **Competing interests**

The authors declare that they have no competing interests.

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### **Authors' contributions**

KO led the writing of the manuscript, data collection and participated in data analysis; SO, participated in the data collection, analysis and writing of the manuscript; KM and GN participated in data analysis and writing of the manuscript; DM and KC contributed to the design and supported the implementation of the study, participated in data analysis and writing of the manuscript; PK-W led the design and implementation of the study, participated in data analysis and writing of the manuscript.

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