Roles and Expectations of Male Partners from PMTCT services in Chiradzulu Malawi: A Qualitative Study

Beatrice M'baya Kansinjiro

University of Malawi, College of Medicine, School of Public Health and Family Medicine

Alinane Linda Nyondo-Mipando (✉ lindaalinane@gmail.com)

College of Medicine, University of Malawi

Research article

Keywords: Utilization, Option B+, PMTCT, Adherence, Male Involvement, Services, roles

Posted Date: August 31st, 2019

DOI: <https://doi.org/10.21203/rs.2.13825/v1>

License: This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: Prevention of mother to child transmission of HIV (PMTCT) is the main measure for curbing HIV infection in children. Male involvement (MI) greatly influences uptake and adherence to PMTCT services yet the level remain low in Sub Saharan Africa. Lack of well stipulated roles for men in PMTCT is one of the main barriers to MI. Studies on MI have focused on women and Health care workers (HCW), thereby making men silent partners. The main aim of the study was to explore the roles and expectations of male partners in PMTCT services in Malawi.

Methods: This was a descriptive qualitative study that involved men whose partners were either pregnant or breastfeeding a child, health care workers working in PMTCT services for over six months and traditional leaders. We conducted 9 in-depth interviews and 12 key informant interviews from January to March 2018. All interviews were audio-recorded, transcribed and translated. Thematic analysis was employed to analyze data.

Results: Male partners play supportive, HIV prevention behaviour change and decision-making roles in PMTCT services. Health assessment and health promotion activities are the male specific services required in PMTCT services and these should be delivered at both health facility and community levels.

Conclusion : Male partners in PMTCT have expectations that need to be met at both health facility and community levels. There is need to have male-tailored package of health services that are directly provided to men along with PMTCT services at different levels in order to promote MI. The services should be provided in an atmosphere that allows and accepts male partners to exercise their roles in PMTCT services.

Background

Male Involvement (MI) is key to uptake and adherence of health services including PMTCT [1–4]. There are varied definitions for MI and includes physical presence of a man in the antenatal or postnatal clinics [5], support that is remotely provided without accompaniment [1]. The support may include living positively with HIV infection either in HIV discordant or HIV concordant couples; creation of a fast track mechanism for women at the antenatal clinic because in most health facilities women who are accompanied by their partners at the antenatal clinics receive preferential care by being served early than women who come alone; decision on the preferred method for family planning[1,6]. Male involvement offers a platform for facilitated mutual disclosure of a couple's HIV status and becomes culturally appropriate for a woman to disclose her HIV-infected status due to the positive environment that men would provide [1,6]. Although there are documented benefits that MI in PMTCT offers such as increase in adherence and uptake of PMTCT services, HIV testing for both women and men; increases in the number of deliveries done at the hospital; prolonged breastfeeding and male partner HIV counseling and testing [6–8], MI still

remains low [2,8,9] and ranges from 12.5% to 18.7% in Sub-Saharan Africa [10]. Previous studies in Sub Saharan Africa have demonstrated that despite the efforts to encourage men to be involved in the PMTCT services only a few men accompany their female partners for antenatal care (ANC) and participate in PMTCT programmes [7] with rates of 3.2% in Malawi [11] 12.5% in Tanzania [12] and 16% in Kenya [13].

Several strategies have been implemented to improve male involvement (MI) in PMTCT service [14–16] but have yielded a suboptimal uptake [17]. Even with the documented strategies like: engaging influential community leaders and community-based workers; creating male peer support groups; providing incentives such as checking blood pressure, deworming, height measurement, HIV and syphilis screening; and attending to couples earlier than women who come alone [14–16], the rates of MI have remained low. For instance, in Uganda implementation of the strategies only improved couple HIV testing rates from 12% in 2013 to 20% in 2015 [17]. Strategies suggested for MI in Malawi include sending men invitation cards, home visits, sending a message through the woman to accompany her partner, telephone calls, writing in a woman's health passport book and refusing a woman medical attention if she comes alone [15]. In spite of these strategies, a Tanzanian study reported that men refrained from ANC/PMTCT clinics because culturally that was not their role [3].

Studies across Africa have illustrated that men fail to attend the PMTCT services because the services are not for them and lack a male specific-agenda [3,7,9]. One of the reasons for the suboptimal impact of Male involvement as asserted by Theuringet et al. (2009) is the lack of well-articulated roles of men within the programmes [3]. The lack of clarity on the roles and expectations of men in PMTCT services hinders successful male involvement [1]. Although men have knowledge of MI and PMTCT [1,3,12], there are no stipulated roles of men in the ART/PMTCT guidelines in the country [18], which leaves both health care workers and men unaware of what men ought to access when they attend PMTCT services with their partners. Furthermore, it has been asserted that PMTCT services are for women without specific roles that are directed towards men [19]. In other instances men have been used as a mechanism to fast-track women within the antenatal clinics [1,5] with no services targeted for them.

This study was conducted to explore expectations of men in PMTCT services in a district in the southern part of Malawi. Specifically, we explored perceived roles of men and specific services that men may access within PMTCT services. The findings from this study will feed into the PMTCT services as a way including men in the services. Additionally, the identified roles and services if incorporated in policy will serve as a benchmark for assessing MI in PMTCT initiatives in the country

This study was guided by the theory of reasoned action (TRA) which was developed by Fishbein et al, (1960) [20]. TRA was developed in order to appreciate the association between attitude and behavior and explains the relationship between beliefs, attitudes, intentions and behaviour. the tenets from this theory informed some of the questions that were included in the interview guides used in the study.

Methods

Study design

A descriptive qualitative study was conducted at two primary level health centres in the southern part of Malawi, from January to March 2018. We used In-depth interviews because they offer more time for a detailed and nuanced exploration of a phenomenon which facilitates understanding of complex issues and enable researchers to get an insight into the socio-cultural context of the participants [21,22]. The interviews allowed us to gain insights from the people who are more knowledgeable about the topic in order to understand how certain things work [21].

Setting of the study

Health facility A is located to the north while Health facility B is to the South-east of the District Hospital, both are Government owned facilities and are rural health centres. Health centre A serves communities with different educational background with a number of men employed in small companies unlike Health Centre B where most men solely depend on working in farms and some informal employment. Male involvement at Health centre A health centre is voluntary while at health centre B is reinforced through the by-laws enacted by traditional leaders and the health care workers. Both sites offer the following services: outpatient services, low risk ANC and deliveries; ART and PMTCT services; under five clinics; drug dispensing and have a referral systems to the district hospital. At Health Centre A, initial booking for ANC is done every Mondays while subsequent visits are done every Wednesdays and Fridays while at Health centre B, initial visit is done every Tuesdays, while subsequent visits are conducted on Wednesday and Thursday. There are 18 and 14 health care workers at Health centre A and Health centre B respectively.

Sample size

We conducted a total of 21 in depth interviews (IDI) among men, health care workers and Village headmen. Baker argues that qualitative samples are usually small and that by the sixth interview, one should reach 70% saturation and by the twelfth interview the information reaches 92% saturation [23]. Of the 9 men included in the study, 6 were involved in PMTCT and 3 men were not involved in PMTCT services. We also interviewed 8 health care workers and 4 village headmen.

Selection of Study participants

We drew a purposive sample because it allowed us to include participants with rich information on the issue that was being investigated [21]. Men who were involved in PMTCT were approached at antenatal and under-five clinics where they had accompanied their wives to access the PMTCT services. Men who were not involved in PMTCT were approached in their respective homes with the assistance of community health care workers. We included men whose partners were either pregnant or breastfeeding babies of up to 24 months of age regardless of HIV serostatus, 18 years old and above, and with an expressed willingness to participate in the study

Traditional leaders were approached in their respective homes with the assistance of community health care workers. Traditional leaders were only recruited into the study if they had been in their positions for at least six months regardless of gender, 18 years old and above, willing to participate in the study. Health care workers were approached at their respective work places, with the assistance of the in-charge officers of each health centre and were specifically selected because of their active involvement in providing PMTCT services. These included 2 Nurse midwife technicians, 2 medical assistants, PMTCT coordinator for the district, 2 Health Surveillance Assistants (HSAs) and 1 HIV Diagnostic Assistant (HDAs.) Health care workers were only recruited into the study if they had worked at their respective health facilities for not less than six months, 18 years old and above, and were willing to participate in the study. All participants were approached during their free time to avoid disrupting their work schedules.

Data collection

We collected data using face-to-face interviews using tools that were translated into a local language. The tools were piloted at Health Centre C within the District. The broad questions that guided the interviews were:

1. Would you please describe the roles of male partners in PMTCT services?
2. Would you please describe the services that are required by men in PMTCT services?

After each broad question we probed further to achieve a deeper understanding of the different opinions about the expectations of male partners in PMTCT services [21]. The Principal Investigator conducted all the interviews. All interviews were audio recorded and lasted for 30 to 45 minutes. Data collection continued until saturation of ideas was reached, which was noted when there were no new ideas being expressed. All the transcripts were simultaneously transcribed and translated verbatim into English. Direct quotes from the transcribed and translated data from the tape-recorded interviews are also used to clarify the responses from the participants and was captured to ascertain validity of the data [24]. Member checking was employed to ensure that the correct data was captured [25]. This was done by restating or

summarizing information provided by the participant to agree on what had been discussed in the interview to ensure credibility of the findings and this was done immediately after the interview. Field notes about the characteristics of the study sites, other interesting beliefs and experiences of being in the field were collected. Since the research was part of a Master's program, the Principal Investigator and the Investigator, listened and discussed the audios at different intervals of data collection to ensure that the study achieves its objectives.

Data analysis

We employed a manual thematic analysis [26]. We manually color coded the transcripts whereby similar codes were categorized and were later rearranged into themes. The researcher read the transcribed data multiple times to have a good grasp of the depth and breadth of the data while noting ideas of interest, checking the transcripts back against the original audio recordings for accuracy [26]. Codes were inductively and deductively derived by identifying recurrent ideas as the data manifested and from the theory and objectives of the study respectively. Codes that had the same color from the manual coloring method employed were grouped together to generate an overarching theme. Different codes were sorted into potential themes and the data extracts were put within the identified themes. This involved organizing all similar coded data extracts into categories. The themes that were realized were reviewed while paying attention to the emerging issues and any un-coded data was added at this stage bearing in mind that coding is a continual process. The process of coding was constantly discussed with the other Investigator to gain clarity and consensus [26]. We combined all themes that seemed to be related or alluding to the same idea and later named the themes influenced by the data under it.

Results

Socio-demographic characteristics of the participants

Demographic Characteristics of Male participants

The age of the men ranged from 21 to 46 years; seven were married, seven were Christians, seven were unemployed, four had some primary education and two had secondary school education.

Demographic Characteristics of Health care workers

There were eight health care workers aged 29 to 65 years, five were female, four were nurses, one medical assistant, one HIV diagnostic assistant and the PMTCT coordinator.

Demographic Characteristics of Village Headmen

These were four village head men, two from each of the study sites. They were all men with age range of 49-70 years old. Two had attended primary school education and two never attended any formal education but were able to read and write.

Roles of male partners in PMTCT services

The roles that men play in PMTCT services were categorized into: Supportive, HIV Prevention Behavior and Decision-making Roles (Table 1).

1. Supportive Roles

Participants stated that the role of the man in PMTCT services is to provide support and the support varied as follows:

1.

Economic support

Men are expected to financially provide for their families irrespective of a wife being pregnant or not and are expected to ensure that the family has food. When a wife or partner is pregnant then men are to provide for all necessary materials in preparation of the pregnancy and delivery.

“It is the duty of the man to buy wrappers for the woman, to buy basins, soap for bathing and washing when the woman delivers. A man has that responsibility so he needs to find money to buy all that and other things like food at home.” (Health Worker, 2)

“As a man, I have a role to fund all the activities that may be needed, finding money for my wife to start antenatal care; for transportation; and buying necessary things for labour and delivery, yes that is my role.” (Man 1, involved in PMTCT)

1. Participation during Pregnancy, Delivery and Child care Activities

Men are to accompany their pregnant partners for antenatal services, delivery including clinics for children under the age of five. Additionally, when a child is sick, men are to seek medical attention for the baby including reminding the wives to take the child for other related health activities.

“The role of the husband is to accompany his wife to the PMTCT clinic. This makes the wife feel comfortable and relaxed which helps the baby to grow

healthy. But also knowing what the wife will get inside [in the consulting or delivery rooms], eeeh, that is the responsibility of the husband so that he too should know that my wife is going through this and this.” (Health worker 2)

“This issue just started sometime back, that men should be available when their wives are giving birth, I wish this issue was being implemented in our hospitals so that as men we should experience what our wives encounters. I just believe that if this happens we will have a common understanding with our wives and health care workers.” (Man 1, involved in PMTCT)

One Village headman shared what is impressed on men in their settings and what he had observed being done in response. He narrated the experience as below:

“We tell men to take their babies when they fall sick and most of them do that in this community. They are motivated because they do not wait for long hours, they are assisted early, so because of that men in this community play that role as well.” (Village headman 4)

Furthermore, participants expected men to offer companionship which is expressed by assisting a wife with household chores. This is illustrated in the quote below:

“I don’t know if men do assist but they can help the pregnant mother to wash the clothes when the pregnancy has reached term or even cooking. This has an advantage because it gives time to rest and when the mother has given birth, it helps her to have more time to breast feed her baby exclusively.” (Health worker5)

Male partners have a role of reminding their wives to attend antenatal care/PMTCT visits however the men who are not involved in PMTCT and the village headmen at both sites remained silent on this issue.

Health care workers and male partners described another aspect of reminders like reminding a woman on activities around PMTCT such as taking of ARV drugs and taking the baby for early infant diagnosis of HIV services and receipt of cotrimoxazole because they believe that on their own women tend to forget appointment dates

“.....the husband has to remind the wife, right. When it is time to take drugs, she may be hesitant, he has to make sure that his wife is taking drugs.” (Health Worker 5)

“... so, it is the role of the father to remind mother to take the child at for this procedure (Early Infant Diagnosis of HIV services) in time.” (Health Worker 4)

“You know women very well, they tend to forget things easily, they are fond of making mistakes. Like for my wife if I don’t keep the date of her next appointment, I tell you here, she will not go and surely, she will miss that visit I tell you’ how then will we know that our baby is growing well?” (Man 6, involved in PMTCT)

2. HIV Prevention Behavior Roles

In the context of PMTCT, men are expected to take up HIV prevention strategies to ensure that their families are protected. These roles include behavioral practices such as faithfulness to one’s partner and using condoms in the presence of HIV Infection.

1. Faithfulness to One’s Partner

Men are to remain faithful to their wives whether the woman is not pregnant, or pregnant and is breastfeeding and whether the family is HIV positive or not, the role of the man is to be faithful to their wives

“Men have a large responsibility in this programme although they may not know, but they should make sure that they do not infect the wife with the HIV virus.” (Health worker 1)

However, men who are not involved in PMTCT viewed faithfulness as a responsibility for both partners

“We both have to be faithful, I mean a man and wife, we should trust each other and rely on each other. We should be open to each other to meet the needs of each other.” (Man 2, not involved in non PMTCT)

1. Initiation of condom use

Health care workers emphatically specified initiation of condom use by men as a critical role for men to avoid infection especially when a couple is HIV infected.

“So, the man has a responsibility to initiate the use of the condoms in the family when the family is HIV positive, be it during the time the wife is not pregnant, or is pregnant or is breastfeeding.” (Health worker 8)

3. Decision making roles

Men are key in deciding on uptake of health services as follows. Participants specified various time points within PMTCT services where men make decisions.

1. Uptake of HIV testing by the family

Men decide whether a couple and their children will undertake an HIV test or not. A village headman explained that a man should decide on an HIV test outside the context of PMTCT. He narrated as follows:

“ [HIV] Testing should not wait for a woman to become pregnant, the role of a man as a head of the family is to make decision on how often the couple should be tested in relation to prevent the child from the virus.” (Village headman 2)

1. Antenatal Clinic Attendance, Place and mode of delivery.

Men are culturally expected to decide on when a pregnant partner is to initiate antenatal services. A village headman stated as follows:

“In our Malawian culture men are heads of the family, so the role of the father is to make a decision on when to start the antenatal clinic visits.” (Village headman 4)

A man who was involved in PMTCT services further stated that the role often extends to deciding on the facility where a pregnant partner will deliver.

“... as a decision makers they are supposed to decide on where his wife will deliver. Again, he has to decide on the mode of delivery, ... on when to go to the hospital to await labour.” (Man1, involved in PMTCT)

Health care workers asserted that men have to decide on the infant feeding practices a couple would follow since they provide financially for the family.

“The other role of the father is to help the mother decide on the feeding choice of her baby and decide on when she can stop breastfeeding to avoid contracting the virus.” (Health worker 2)

1. Male specific services required in PMTCT programme

The specific services men require are classified under two broader themes and these are: Health Assessment and Health Promotion Services. The participants further outlined how

the services can be organized and delivered at both the health facility and community level (Table 2)

Theme 1: Health Assessment Services

The health assessment services men expected from a PMTCT service were Physical Assessment and Medical Consultation services.

1. Physical Assessments Services

Male partners and health care workers at both sites suggested that men should have targeted health care services. Such services include: checking blood pressure, body weight and blood sugar.

“If the health care workers are willing to help, I would love to be checked blood pressure.” (Man 2, involved in PMTCT)

“...if the man comes what he most benefits is the free testing for HIV, but if we integrate with those of non-communicable disease and check their blood pressure, blood sugar, or even their weight” (Health worker 2)

1. Medical Consultation Services

Health care workers reported that men expect to be attended to and be given health advice as appropriate.

“They expect to be asked if they are doing fine and given time to explain their problems that they may have. When men come at the antenatal clinic, they become our clients and we need to listen to their complaints and attend to them and refer if need arises. We always have clinicians whom we work with, those ones should also be consulted.” (Health worker 2)

However, some men who are both involved and not involved in PMTCT services had different opinions from other participants and emphasized that they do not require services that would benefit them directly. They insisted that they are just escorting their wives and that it is time consuming for the healthcare workers to provide some services to the men.

“Because we men are here just to escort our wives, heh, so when you are just escorting you cannot request for anything. When antenatal is for pregnant women, so that they should see how much the unborn baby weighs, so for us to

be tested for no reason that is impossible, besides it is time consuming for the health care workers.” (Man 6, involved in PMTCT)

Delivery of Health Assessment Services

Participants further explained how the services they require could be organized and delivered at the Health Facility and Community.

1. Delivery of Health Assessment Services at a Health Facility

Men asserted that they expect the services and staff to be male friendly. Their understanding of male friendly facilities and services emphasized on organization of services like HIV testing, Blood pressure monitoring and information. Male friendly health services entail: Clinic Flow rearrangement, Privacy and confidentiality, personalized and integrated services, couple services and services with positive customer care attribute

1. Re-arrangement of Clinic Activities-Targeted services

Health care workers and men from both sites agreed that most men advocate for omission of antenatal clinic songs and allow the health care workers to proceed with sharing the necessary information directly with the recipients

“You know what? At the ANC clinic they sing songs and clap hands, aaaah I don’t like that. How do you expect me to sing songs in the presence of a large group of women, who are strangers for that matter?” (Man 2, not involved in PMTCT)

Health care workers corroborated the men’s expectation on the songs that are part of Antenatal services:

“Men want to receive counseling based on their condition, so sitting them down and telling them to sing songs, which is a waste of time... They just want the information to be given out directly.” (Health worker 8)

However, the opinions of some male participants involved in PMTCT and village headmen were contrary to what was suggested as follows:

“I only expect to be given assistance that is all, even if they tell us to sing songs, I can sing without any problems.” (Man 4, involved in PMTCT)

“The hospitals are just ok, the services are also ok, there is nothing wrong with how they offer, as long as they receive the care they were supposed to, that is enough. Some men are just stubborn, they don’t need to be listened to.” (Village headman 1)

1. Couple Specific Structural Services

Both health care workers at both sites and men who are involved in PMTCT advocated for a designated reception area for couples only. This strategy will avert non-attendance at the services due to shyness stemming from services being offered in the presence of other women.

“I feel shy when I sit together with strange women; I don’t become open. I would love if they can provide a space for couples only.” (Man 2, involved in PMTCT)

“A hospital should have a space which can be used to receive couples only, and test [HIV] a wife and a husband together, while those women who came alone should also have another reception.” (Health worker 5)

1. Privacy and confidentiality in Service Provision

As a measure of achieving male friendly health services, especially with HIV services that men may access through PMTCT services, men and health care workers reported that the services have to be offered in rooms that maintain privacy. Men who are involved in PMTCT, health care workers and some village chiefs at both sites also highlighted that male partners expect privacy because they feel relaxed in a closed environment

“I expect to find a hospital which has rooms that provide privacy, and not only inside but also outside so that when entering into the room, people should not see you entering into the room where HIV testing is done. That is what I expect!” (Man 1, involved in PMTCT)

“These men expect to be treated privately; no one should be suspicious of them when something has gone wrong (HIV Infected result outcome), but in our facility, almost everybody knows that the couple has come for HIV testing and this makes a lot of men to shun away from coming here.” (Health worker 2)

Furthermore, participants suggested that the health care workers must be able to keep the information of people and services accessed confidential, to allow participants to be more open to them.

“The health care workers must keep the information confidential, for example one person has HIV or both of us are positive, it is not good for them to be telling other people about it, we shouldn’t hear about it anywhere.” (Man 6, involved in PMTCT)

“I think sometimes they (health workers) also need us to be discreet, men should not hear from anywhere about the treatment that they have received at the hospital.” (Health worker 2)

Preserving confidentiality becomes paramount in instances where health workers and men know one another as explained below:

“Some of the health workers who conduct HIV tests are our colleagues, so we tend to wonder what would happen if we are diagnosed with the virus. You see unless they are confidential enough but otherwise we can be everyone’s talk.” (Man 2, not involved in PMTCT)

1. Personalized and Integrated Services

Only men who are involved in PMTCT reiterated that men expect to be assisted by one health care worker who would provide all the necessary services without referrals from one health care worker to the other.

“I expect to be assisted with one health care worker. Thus, when I arrive, he or she should educate me, counsel me and my wife, and do the check up for the pregnancy of my wife. That should continue until when I come for the next visit, I should be booked the date that the healthcare worker who assisted me will be will be around.” (Man 4, involved in PMTCT)

Additionally, health care workers and men further described the process of rendering services. This was expressed in the quotes below

“They want to be warmly welcomed, explain things about child preparation politely, they need to be helped fast so that they don’t have to wait for long hours at the clinic.” (Health worker 6)

“We expect to be taught in a loving manner, not like idiots.” (Man 1, not involved in PMTCT)

The health care workers affirmed that a receptive and respectful welcome would encourage more men to attend the PMTCT programme.

“If we welcome them [men] nicely when they come, when they go they will tell their friends, they too will come. Do not judge with the way they look. At times, we (health care workers) tend to judge saying they are too old, or maybe too young, you start saying: eehh you should be using family planning, yes, saying you also came last year .” (Health care worker 5)

Village Headmen corroborated the receptive attitude by advocating for a non-judgmental attitude by health care workers

“They [men] expect that they will not be judged, the language should be courteous, the care in the hospital should be good, they should take care of the patient well, and do what is required, they should not mock them.” (Village headman 3)

2. Delivery of Health Assessment Services at a Community Level

3. Integration in other activities within a Community

Another way of providing services that was recommended by some men who are involved in PMTCT and health care workers is integrating PMTCT services in other activities, such as in sports because most men enjoy and patronize soccer events.

“Through soccer, before the game starts there should be an announcement to speak about the MI in PMTCT issue. Encourage questions and tell them where they can access the services. I believe this would help to reach out other men who may be ignorant or not willing to participate.” (Man 6 involved in PMTCT)

Theme 2: Health Promotional Activities

The health promotion activities suggested were all on educating men on their role and services they can access from PMTCT services. Men suggested of having education sessions concerning their health as part of the services.

“Give us [men] health education concerning diseases such as malaria, STIs and how one can take care of oneself... because you may not know this from home but if you go to the hospital then you will know, and the health care providers should help with that.” (Man 5, involved in PMTCT)

Men who are involved in PMTCT services suggested that the information should be staggered in phases unlike the current practice where participants are loaded with information on one visit.

“I expect a healthy baby, being born without HIV. But our concern is that the information is given just once when we come for the first visit, the information is not repeated when we return and we wonder if we are doing the right things that the health care workers expect us to do, for us to have a child who is not HIV infected.” (Man 2, involved in PMTCT)

Another health care worker shared the consequences of the current practice in sharing information with men:

“If we only counsel them once they will not remember for the whole nine months, until the 24th month.” (Health worker 2)

The healthcare workers at both sites asserted that sharing expectations with the male partners can bring behavior change among men, because they would know what is expected of them within PMTCT services. The quote below illustrates this:

“If we just leave them without telling them our expectations, they behave ignorantly and they don’t like it because they feel out of place.” (Health worker 6)

Delivery of Health Promotion Services

- 1. Delivery of Health Promotion Services at a Health Facility**
- 2. Audio and visual Messages**

The health care workers and men who are involved in PMTCT at both sites suggested sharing information using leaflets, brochures or charts so that men could be reading when they are at the waiting area in the antenatal clinic.

“If the hospital can buy leaflets that have information about PMTCT, the roles that they are supposed to play and some benefits, just as it is with the male circumcision leaflet which gives one the whole information about it and one does not need to ask about it” (Man 5, involved in PMTCT)

“We should hand out brochures or charts which explain the importance of men taking part, how a man can benefit, how a woman can benefit, even the baby because the man has taken part. That can be good because the message can reach a lot of people and a lot can ask for clarification.” (Health worker 1)

Additionally, men and health care workers recommended sharing of information on PMTCT services through television or a radio that are located within a health facility. This approach was deemed inclusive because it would cater for men that cannot read on their own.

“... If there is a radio or television, I see others like at the district hospital in children’s ward there is a radio or television. When they wait to be attended to, they could be watching or listening that, then they will be enticed, for those who can read then we can make some charts so they can read, as they wait to be assisted.” (Health worker 2)

1. Health Education Sessions in all areas men patronize at a health facility

Giving health talks about the PMTCT services in areas where most men patronize, such as at Antiretroviral clinics and Outpatient Department is another way of delivering health promotional services. This approach was suggested by health care workers who noted that in most cases PMTCT education services are offered at the antenatal or under-five clinics where only a few men are in-attendance.

“In every opportunity that we have to meet men, at the hospital we should be able to give them the information. We can also find a way of spreading information about PMTCT, through OPD or ART. We tend to meet a lot of men in these areas at this hospital.” (Health worker 7)

2. Delivery of Health Promotion Services at a Community Level

3. Creation of peer support groups

Village headmen and men involved in PMTCT services recommended creation of peer support groups as a mechanism for peer-education to fellow men on PMTCT services in the villages. The participants stated that peer-education is effective in relaying information to others.

“People love to learn from the people that they know, so if we agree to train some few men about PMTCT services so that they can be trained and trained individuals ... they will help the chief in advocating for this in the villages with other men. Then they will be helping the village headmen, I think this will be good if added.” (Village headman 2)

1. Stakeholders’ mapping and collaboration

Another form of sharing of information suggested was through collaboration with the community leaders such as traditional leaders, influential institutions such as religious leaders, family clan and employers to facilitate sensitization in community gatherings with the village headmen and existing community healthcare workers. This approach was suggested because cultural beliefs regarding pregnancy, child caring and roles of men towards the care of pregnancy are the ones hindering men from participating in PMTCT services hence the need to work with opinion leaders and key people within a community.

“Since the biggest issue is culture, this has to start in the community first. Our culture needs to accept that pregnancy is not solely a woman’s issue only but both men and women.....” (Health care worker 3)

“Some cultures like some religions, they disregard these things, they don’t go to the hospital, it would be good if the message also reaches the church leaders, they should understand it very well so that they can teach their people.” (Village headman 3)

“The message must reach all the stakeholders including the employers in work places. We should all know how important this message (PMTCT Message) is to our men.” (Health worker 7)

Discussion

The findings of this study show that male partners have specific roles they render and expectations from PMTCT services. The roles of men in PMTCT services are supportive, HIV prevention behavior change and decision-making roles. Men expect health assessment

and promotion services from PMTCT programme. The services expected are to be provided at facility and community levels. The services should be provided in an atmosphere that allows and accepts male partners to exercise their roles in PMTCT programme.

Roles of men in PMTCT Services

The supportive roles of men in PMTCT services from our study are similar to findings that earlier studies reported on the main role of men as financial providers for their family [27-30]. During couple antenatal education, some of the issues considered are roles of men during perinatal period and birth preparedness which help couples to be well equipped with the requirements during the peri and postnatal period [31]. Our findings on the role of men as financial providers are contrary to what was reported earlier in Malawi where men reported that their willingness to participate in PMTCT services was impeded by their role to support their wives financially [1]. This means that there is lack of clear description of the roles of men in the services [13]. In our study the role of men was limited to financial provision while in other studies it encompassed physical presence of a man at the clinic where PMTCT services are delivered and attending to clinic appointments and all health related issues [1,32]. The observed difference in the roles of men arises from the way men perceive and describe their role in different contexts [5]. The varying clarity on definitions and roles necessitates a deliberate effort to specify in the PMTCT guidelines on the roles of men to promote understanding across the stakeholders in PMTCT services.

Our findings on the role of men in caring for their partners from pregnancy, delivery and post-delivery resonates with a South African study that regarded accompanying partners to the antenatal clinic as a form of spousal support [5]. Although men in Malawi accompany their spouses to the antenatal clinic they usually wait outside the clinic rooms while their partner accesses services [32]. As it was reported earlier by Nkuoh et al [29], the men in our study advocated for couples attendance to PMTCT services because that enhances their understanding and uptake of the health related aspects during pregnancy. Additionally, our findings on rendering social support, remain consistent with another study that reported that by accompanying a wife, a man would encourage and support the woman during the stress and discomfort of pregnancy [33]. We suggest that men be included in all the health services activities that a woman undertakes to promote full participation [32].

Despite the positive attitudes towards the roles of men expressed in this study, cultural factors are a hindrance to the execution of the roles. Culture relegates maternal and child caring aspects to women which remains consistent with findings by Adelekan (2014) who reported that men were unwilling to participate in PMTCT because it was culturally inappropriate [34]. Although assistance with household chores was highlighted in our study and in a previous study [5], the division of roles according to gender, prohibits men from assisting a pregnant or a nursing mother, because of the prevailing norm that household chores are for women [5]. Going forward in developing guidelines for roles of men in PMTCT, it will require involvement of custodians of culture to ensure that the guidelines are culturally appropriate.

The role of men in reminding a woman on clinic activities and HIV prevention service highlighted in our study, is consistent with what was reported by earlier studies [16,35]. We therefore argue that male involvement in providing health related support falls within the pathway of achieving HIV viral load suppression among women and protection of children from contracting the virus and will impact positively on the UNAIDS 90: 90: 90 goal which Malawi adopted [36]. Furthermore, the role of men in leading in uptake of HIV prevention practices from our study supports findings from a study done by Larsson (2010) who reported that mistrust in marriage is due to lack of faithfulness between partners [27]. Focusing on HIV prevention as a role of male partners in PMTCT services would encourage adoption of desirable behaviours among men [37,38].

Men are key decision makers in a family and society [7,30,39]. Specifically, in this study, men make decisions concerning attendance in PMTCT services and couple HIV testing, place and mode of labour and delivery, and infant feeding choices. Similarly, other studies have reported that involvement of father postnatally has led to a longer breastfeeding duration [2,40]. Osofi et al. (2014) argued that when men make decisions on health related care for the mother and baby, it yields positive outcomes such as giving birth under a skilled health worker, practicing exclusive breastfeeding, uptake of effective contraceptives, and infant immunizations [41,42].

Services men require in PMTCT services

The need for physical assessments and medical consultation services as suggested in this study are similar to what a Ugandan study referred to as a male health package[17] while in South Africa they were termed as free male health checkups [43]. The specific assessment reported in this study like; blood pressure, blood sugar, body weight, health education and consultation services; differed from what was recommended in Uganda as

part of the male health package. In Uganda they specified deworming and offering couples first priority during ANC [17]. Deworming might not have been mentioned in our study because of lack of knowledge of the services that might benefit them and because the Malawian health system emphasizes deworming among children and antenatal women only [44]. The Malawian health system has been heavily criticized for only focusing more on women and children and leaving out men which is a disservice to men [45]. Notably men are underserved because the major partners in health services are women and children and are more knowledgeable than men [45,46]. The requested services by men may be assigned to other support staff trained with the required skills to avoid overburdening the midwives. WHO (2010) recommended task shifting in order to overcome shortages of staff in hospitals [47]. Provision of such services will be in line with the Malawi Ministry of Health's (MOH) vision statement which advocates for health for all regardless of gender, race, age, disability and residing place [48].

The delivery of health assessments services could be at health facility and community levels. The specific changes to be made within a health system like stopping singing songs and clapping hands, providing couple specific structural services, providing privacy and confidentiality in service provision rooms and providing personalized and integrated services to the couple were reiterated by Nyondo et al (2014) [15]. Other studies considered making health facilities male friendly by reducing long waiting time or introducing weekend or evening services for couples [10,13,49]. This study did not find similar sentiments and this may be due to the different settings, the previous study was done in urban areas while this study was done in rural areas where most men are not employed and may easily avail themselves during week days for clinic appointments.

Delineating a specific area for couples to access health service as reported in our study confirms what a Sub Saharan Africa systematic review [30] and other studies that revealed that organizing specific clinics for pregnant couples would be effective ways to increase male involvement in PMTCT activities [10]. Similarly, it was noted that a lack of space to accommodate couples in consultation rooms was a barrier to MI because it made men feel uneasy when seated next to women they do not know [16,30,50]. Belato et al. (2017) advocated for separate waiting areas for men and women visiting maternal and child health clinics [51]. The current health systems of Malawi face a challenge of lack of adequate space to accommodate men in PMTCT service [13]. This suggests that there may be need to engage other partners who may help in renovating the current health facilities and create enough space that would accommodate men in PMTCT services. This finding requires careful consideration because it may discriminate women without partners or are in unstable relationships [41]. Related to space was the need for privacy which has been reported in earlier studies [13,14]. Although our study did not report what other studies

highlighted that there should be a different exit for male and female partners after HIV testing to avoid being identified by other health facility users [51], our study highlighted that HIV testing rooms should be behind other service rooms so that the areas should not be crowded and albeit preserve privacy.

At community level, services can be integrated with events where most men patronize like soccer. This approach which builds upon community based strategies ensures that influential men learn about their roles from health care workers in environments of comfort [14]. This approach would encourage community members to understand the new concepts which would promote behaviour change. A community's supportive attitudes towards PMTCT services will give a symbol about a changed cultural environment that permits and expects male partners to be involved in PMTCT services [14].

Men want to be taught on PMTCT services. Delivering sessions on PMTCT services as men suggested for in our study will require overcoming some barriers that may impede provision of education services, accessing the information and bringing the information to the required people [52]. At health facility level, the health promotion service messages can be delivered through audio visual aid and provision of health education sessions in all areas men patronise such as outpatient department (OPD) or ART clinics. Similarly, earlier studies in Malawi stated that there is need for health information sharing and male education about the importance of ANC and PMTCT [10,13] and IEC has a key role in promoting MI in PMTCT [15,53]. There is an association between exposure to media and uptake of HIV testing; more women and men who watched TV and women who read newspapers and listened to the radio daily took and HIV test than their counterparts who did not [53]. Information, education and communication is vital in understanding issues and has proved to improve attitudes of people on services[3,54].Provision of leaflets will not be a new thing in the health system because with voluntary medical male circumcision (VMMC) they provide leaflets or brochures that contains all the information a person might need [55].

Optimal delivery of community services is influenced by prior stakeholders mapping and collaboration, integration within pre-existing services and creation of peer support groups. Earlier studies highlighted the provision of community services through collaboration with

different stakeholders [10,13,14,30,56]. The stakeholders include church leaders, traditional leaders, health care workers who can convey PMTCT messages in various forums [10,30,56]. It is believed that men are likely to change their views towards PMTCT when messages are shared at a church or a mosque which may result in an increase in participation in PMTCT services [14,15,29]. A multi country study done in Sub Saharan Africa reported that negotiating with community partners and working with leaders helped dismiss myths and fears around HIV and addressed challenges with stigma [56]. Similar approaches were described in the DRC and Côte d'Ivoire, where both community and religious leaders were lobbied to strengthen the capacity of those giving messages in the communities [14].

Equally, the study revealed that there is a need to collaborate with family members through the their clan to promote male participation in PMTCT. Similar suggestions were reported by Besada et al. (2010) whereby the community members instilled powers to the people who were working in communities to sensitize the family on PMTCT with potential of the message trickling toward their family members [14]. In Uganda, the collaboration of village elders and community leaders in the elimination of mother-to-child transmission (eMTCT) of HIV was expressed as fundamental in introducing a shift in the attitude of community members towards the role of men in ANC and eMTCT [17].

Creation of peer support groups in villages can facilitate male participation in PMTCT services. Similar findings were also reported in other studies [13,14,27]. Male peer approach would be culturally appropriate for men to get information from their fellow men other than women [13]. This study did not find other support groups that have been advocated in PMTCT like expert clients are in general HIV care [57]. This is so because the focus of expert clients is for people who are living positively, while this study would want to reach all men regardless of their HIV status.

Strength And Limitation

The study has presented the opinions and perceptions of health care workers, men and traditional leaders, which means that it provides a holistic approach to MI, however this study excluded the voice of women who are an important party in MI in PMTCT. Although some men refused to participate in the study, we searched for more men to ensure that we have a purposive sample of what we studied. The sampling technique and study design employed does not allow for generalizations.

Conclusions

Male partners in PMTCT have expectations that need to be at both health facility and community levels. Male partners play supportive roles, health behaviour roles for HIV prevention and decision-making roles in PMTCT. Health assessment services and health promotion activities are the major male specific services required in PMTCT. Strengthening awareness services at both health facility and in communities is more desirable. Additionally, stipulating the roles of men in PMTCT in necessary documents would guide the health care workers in knowledge and practice which will help them to meet the needs of male partners in PMTCT services. Further studies should focus on delivering a male-tailored package of interventions within PMTCT services.

Declarations

Availability of Data and Materials

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

List of Acronyms and Abbreviations

ANC: Antenatal Care, ART: Antiretroviral Therapy, ARVs: Antiretroviral drugs, CDH: Chiradzulu District Hospital, CHAM: Christian Health Association of Malawi, CMA: Community Midwives Assistants, COM: College of Medicine, COMREC: College of Medicine Research Ethics Committee, DHO: District Health Officer, DIP: District Implementation Plan, GoM: Government of Malawi, HIV: Human Immunodeficiency Virus, HMIS: Health Management Information System, HAS: Health Surveillance Assistant, HTC: HIV Testing and Counseling, IDI: In-Depth Interviews, KII: Key Informant Interviews, MA: Medical Assistant, MCC: Maternal Child Care, MI: Male Involvement, PMTCT: Prevention of Mother to Child Transmission, TRA: Theory of Reasoned Action

References

1. Nyondo AL, Chimwaza AF, Muula AS. Exploring the relevance of male involvement in the prevention of mother to child transmission of HIV services in Blantyre, Malawi. BMC International Health and Human Rights. 2014;14:30.
2. Msuya SE, Mbizvo EM, Hussain A, Uriyo J, Sam NE, Stray-Pedersen B. Low male partner participation in antenatal HIV counselling and testing in northern Tanzania:

- implications for preventive programs. *AIDS Care*. 2008 Jul 1;20(6):700–9.
3. Theuring S, Mbezi P, Luvanda H, Jordan-Harder B, Kunz A, Harms G. Male Involvement in PMTCT Services in Mbeya Region, Tanzania. *AIDS Behav*. 2009 Jun 1;13(1):92–102.
 4. Brittain K, Giddy J, Myer L, Cooper D, Harries J, Stinson K. Pregnant women's experiences of male partner involvement in the context of prevention of mother-to-child transmission in Khayelitsha, South Africa. *AIDS Care*. 2015 Aug 3;27(8):1020–4.
 5. Matseke MG, Ruiter RA, Barylski N, Rodriguez VJ, Jones DL, Weiss SM, et al. A Qualitative Exploration of the Meaning and Understanding of Male Partner Involvement in Pregnancy-Related Care among men in rural South Africa. *Journal of social, behavioral and health sciences*. 2017;11.
 6. Sherr L, Croome N. Involving fathers in prevention of mother to child transmission initiatives – what the evidence suggests. *Journal of the International AIDS Society* [Internet]. 2012 Nov 7 [cited 2017 Apr 5];15(4). Available from: <http://www.jiasociety.org/index.php/jias/article/view/17378>
 7. Ramirez-Ferrero E, Lusti-Narasimhan M. The role of men as partners and fathers in the prevention of mother-to-child transmission of HIV and in the promotion of sexual and reproductive health. *Reproductive Health Matters*. 2012 Dec;20(39, Supplement):103–9.
 8. Kalembo FW, Zgambo M, Mulaga AN, Yukai D, Ahmed NI. Association between male partner involvement and the uptake of prevention of mother-to-child transmission of HIV (PMTCT) interventions in Mwanza district, Malawi: a retrospective cohort study. *PLoS One*. 2013;8(6):e66517.
 9. Akarro R, Deonisia M, Sichona F. An Evaluation of Male Involvement on the Programme for PMTCT of HIV/AIDS: A Case Study of Ilala Municipality in Dar es Salaam, Tanzania. :11.
 10. Kalembo FW, Yukai D, Zgambo M, Jun Q. Male partner involvement in prevention of mother to child transmission of HIV in Sub-Saharan Africa: Successes, challenges and way forward. *Open Journal of Preventive Medicine*. 2012;02(01):35–42.
 11. Makoni A, Chemhuru M, Chimbetete C, Gombe N, Mungati M, Bangure D, et al. Factors associated with male involvement in the prevention of mother to child transmission of HIV, Midlands Province, Zimbabwe, 2015 - a case control study. *BMC Public Health*. 2016;16:331.
 12. Birhanu T, Ababa A. Knowledge, Attitude and Practices of Male Partners Involvement in Reducing Antenatal HIV Infection and PMTCT. 2014; *unpublished thesis Addis Ababa University*. Accessed from <http://213.55.95.56/bitstream/handle/123456789/11466/Tsehay%20Birhanu.pdf?sequence=1&isAllowed=y> on 20 April 2017.
 13. Nyondo AL, Chimwaza AF, Muula AS. Stakeholders' perceptions on factors influencing male involvement in prevention of mother to child transmission of HIV services in

- Blantyre, Malawi. BMC Public Health. 2014;14:691.
14. Besada D, Rohde S, Goga A, Raphaely N, Daviaud E, Ramokolo V, et al. Strategies to improve male involvement in PMTCT Option B+ in four African countries: a qualitative rapid appraisal. Glob Health Action [Internet]. 2016 Nov 7 [cited 2017 Apr 3];9. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5102106/>
 15. Nyondo AL, Muula AS, Chimwaza AF. Assessment of strategies for male involvement in the prevention of mother-to-child transmission of HIV services in Blantyre, Malawi. Global Health Action. 2013 Dec;6(1):22780.
 16. Reece M, Hollub A, Nangami M, Lane K. Assessing male spousal engagement with prevention of mother-to-child transmission (pMTCT) programs in western Kenya. AIDS Care. 2010 Jun 1;22(6):743-50.
 17. UNICEF. Improving Male Involvement to Support Elimination of Mother to Child Transmissin of HIV in Uganda: A case Study. 2016 [cited 2018 Aug 6]; Available from: https://www.childrenandaids.org/sites/default/files/2017-03/Uganda%20Case%20Study%203_15%20HR_0.pdf
 18. Microsoft Word - Malawi PMTCTGuidelines_18.08.08 - latest version.doc - s19270en.pdf [Internet]. [cited 2017 May 22]. Available from: <http://apps.who.int/medicinedocs/documents/s19270en/s19270en.pdf>
 19. Aluisio A, Richardson BA, Bosire R, John-Stewart G, Mbori-Ngacha D, Farquhar C. Male Antenatal Attendance and HIV Testing Are Associated With Decreased Infant HIV Infection and Increased HIV-Free Survival: JAIDS Journal of Acquired Immune Deficiency Syndromes. 2011 Jan;56(1):76-82.
 20. Greene KL, Householder BJ, Hale JL. The theory of reasoned action. The persuasion handbook: Developments in theory and practice. 2002.
 21. Kielmann K, Cataldo F, Seeley J. Introduction to qualitative research methodology: a training manual. United Kingdom: Department for International Development (DfID). 2012;
 22. Hennink MM, Hutter I, Bailey A. Qualitative research methods. London ; Thousand Oaks, Calif: SAGE; 2011. 304 p.
 23. Baker SE, Edwards R, Doidge M. how_many_interviews.pdf. 2012.
 24. Corden A, Sainsbury R, University of York, Social Policy Research Unit. Using verbatim quotations in reporting qualitative social research: the views of research users. York: University of York; 2006.
 25. Harper M, Cole P. Member Checking: Can Benefits Be Gained Similar to Group Therapy? :10.
 26. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006 Jan;3(2):77-101.

27. Larsson EC, Thorson A, Nsabagasani X, Namusoko S, Popenoe R, Ekström AM. Mistrust in marriage--reasons why men do not accept couple HIV testing during antenatal care- a qualitative study in eastern Uganda. *BMC Public Health*. 2010 Dec 17;10:769.
28. Shey Nsagha D, Edie Halle-Ekane G, Shei Nfor C, Ngowe Ngowe M, Tatchwanglie Nasah B. The Role of the Male Partner in the Prevention of Mother to Child Transmission of HIV in Cameroon. *American Journal of Epidemiology and Infectious Disease*. 2014 Mar 11;2(2):52-9.
29. Nkuoh GN, Meyer DJ, Tih PM, Nkfusai J. Barriers to Men's Participation in Antenatal and Prevention of Mother-to-Child HIV Transmission Care in Cameroon, Africa. *Journal of Midwifery & Women's Health*. 2010 Jul;55(4):363-9.
30. Manjate Cuco RM, Munguambe K, Bique Osman N, Degomme O, Temmerman M, Sidat MM. Male partners' involvement in prevention of mother-to-child HIV transmission in sub-Saharan Africa: A systematic review. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*. 2015 Jan;12(1):87-105.
31. Chikalipo MC, Chirwa EM, Muula AS. Exploring antenatal education content for couples in Blantyre, Malawi. *BMC Pregnancy and Childbirth* [Internet]. 2018 Dec [cited 2019 May 19];18(1). Available from: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-018-2137-y>
32. Nyondo-Mipando AL, Chimwaza AF, Muula AS. "He does not have to wait under a tree": perceptions of men, women and health care workers on male partner involvement in prevention of mother to child transmission of human immunodeficiency virus services in Malawi. *BMC Health Services Research* [Internet]. 2018 Dec [cited 2018 Aug 9];18(1). Available from: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-018-2999-8>
33. Kamire VA. Factors influencing male partners' involvement in prevention of mother to child transmission of HIV/AIDS program in Gucha South District, Kenya [Internet] [Thesis]. University of Nairobi, Kenya; 2011 [cited 2017 Apr 3]. Available from: <http://erepository.uonbi.ac.ke:8080/xmlui/handle/11295/4955>
34. Adelekan AL, Edoni ER, Olaleye OS. Married Men Perceptions and Barriers to Participation in the Prevention of Mother-to-Child HIV Transmission Care in Osogbo, Nigeria. *Journal of Sexually Transmitted Diseases*. 2014 Feb 19;2014:e680962.
35. Alemayehu M. The Role of Male Partner Involvement on Mother's Adherence to PMTCT Care and Support, Tigray, Northern Ethiopia. *Family Medicine & Medical Science Research* [Internet]. 2014 [cited 2017 May 22];03(04). Available from: <https://www.omicsgroup.org/journals/the-role-of-male-partner-involvement-on-mothers-adherence-to-pmtct-care-and-support-tigray-northern-ethiopia-2327-4972.1000137.php?aid=35756>

36. UNAIDS. Joint United Nations Programme on HIV/AIDS. 90-90-90 An ambitious treatment target to help end the AIDS epidemic. 2014.
37. Mlay R, Lugina H, Ph.D SB. Couple counselling and testing for HIV at antenatal clinics: Views from men, women and counsellors. *AIDS Care*. 2008 Mar 1;20(3):356-60.
38. Manzi M, Zachariah R, Teck R, Buhendwa L, Kazima J, Bakali E, et al. High acceptability of voluntary counselling and HIV-testing but unacceptable loss to follow up in a prevention of mother-to-child HIV transmission programme in rural Malawi: scaling-up requires a different way of acting. *Tropical Medicine & International Health*. 2005 Dec 1;10(12):1242-50.
39. Mitchell GT. Male Involvement in Maternal Health Decision-Making in Nkwanta South District, Ghana. :119.
40. Arifah I, Rahfiludin MZ. Father's roles on the exclusive breastfeeding practice. *Kes Mas: Jurnal Fakultas Kesehatan Masyarakat*. 2014;8(2).
41. Osoti A, Han H, Kinuthia J, Farquhar C. Role of male partners in the prevention of mother-to-child HIV transmission [Internet]. *Research and Reports in Neonatology*. 2014 [cited 2017 May 22]. Available from: <https://www.dovepress.com/role-of-male-partners-in-the-prevention-of-mother-to-child-hiv-transmi-peer-reviewed-fulltext-article-RRN>
42. Farquhar C, Osoti A, Han H, Kinuthia J. Role of male partners in the prevention of mother-to-child HIV transmission. *Research and Reports in Neonatology*. 2014 Jul;131.
43. Koo K, Makin JD, Forsyth BWC. Barriers to Male-Partner Participation in Programs to Prevent Mother-to-Child HIV Transmission in South Africa. *AIDS Education and Prevention*. 2013 Feb 1;25(1):14-24.
44. The Essential Health Package (EHP). <http://www.health.gov.mw/index.php/essential-health-package>.
45. Yeatman S, Chamberlin S, Dovel K. Women's (health) work: A population-based, cross-sectional study of gender differences in time spent seeking health care in Malawi. Anglewicz P, editor. *PLOS ONE*. 2018 Dec 21;13(12):e0209586.
46. Cornell M, McIntyre J, Myer L. Men and antiretroviral therapy in Africa: our blind spot: Men and ART in Africa: our blind spot. *Tropical Medicine & International Health*. 2011 Jul;16(7):828-9.
47. WHO. Task shifting to tackle health worker shortages. 2010.
48. Manthalu G. Health Sector Strategic Plan II. :140.
49. Haile F, Brhan Y. Male partner involvements in PMTCT: a cross sectional study, Mekelle, Northern Ethiopia. *BMC Pregnancy Childbirth*. 2014 Feb 12;14:65.
50. Byamugisha R, Tumwine JK, Semiyaga N, Tylleskär T. Determinants of male involvement in the prevention of mother-to-child transmission of HIV programme in Eastern Uganda: a cross-sectional survey. *Reproductive health*. 2010;7(1):12.

51. Belato DT, Mekiso AB, Begashaw B. Male Partners Involvement in Prevention of Mother-to-Child Transmission of HIV Services in Southern Central Ethiopia: In Case of Lemo District, Hadiya Zone. *AIDS Research and Treatment*. 2017;2017:1–8.
52. Boggis T, Brown S, Reisch R, Shaffer K, Nice AV, Potter A, et al. A Community-Based Approach to Health Promotion. :35.
53. John A. Use of Social Media in HIV and Aids Communication among Undergraduate Students in South-West Nigeria. :239.
54. Ramírez-Ferrero E, World Health Organization, World Health Organization, Reproductive Health and Research. Male involvement in the prevention of mother-to-child transmission of HIV [Internet]. Geneva, Switzerland: World Health Organization; 2012 [cited 2017 May 22]. Available from: http://apps.who.int/iris/bitstream/10665/70917/3/9789241503679_eng.pdf
55. Curran K, Njeuhmeli E, Mirelman A, Dickson K, Adamu T, Cherutich P, et al. Voluntary Medical Male Circumcision: Strategies for Meeting the Human Resource Needs of Scale-Up in Southern and Eastern Africa. Sansom SL, editor. *PLoS Medicine*. 2011 Nov 29;8(11):e1001129.
56. Besada D, Goga A, Daviaud E, Rohde S, Chinkonde JR, Villeneuve S, et al. Roles played by community cadres to support retention in PMTCT Option B+ in four African countries: a qualitative rapid appraisal. *BMJ open*. 2018;8(3):e020754.
57. Cataldo F, Sam-Agudu NA, Phiri S, Shumba B, Cornelius LJ, Foster G. The roles of expert mothers engaged in prevention of mother-to-child transmission (PMTCT) programs: a commentary on the INSPIRE studies in Malawi, Nigeria, and Zimbabwe. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2017;75:S224–S232.

Table

Due to technical limitations, table 1 is only available as a download in the supplemental files section

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [supplement1.docx](#)
- [supplement2.docx](#)