

The Mentor-Mothers program in the Nigeria Department of Defense: Processes and Implementation

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Abstract

Background : Nigeria has the second largest HIV epidemic in the world and one of the countries with the highest rates of new pediatric infections in sub-Saharan Africa. The country faces several challenges in the provision of healthcare services and coverage of Prevention of Mother to child transmission of HIV (PMTCT). Antiretroviral coverage is still low as research has shown that in 2019 only 32% of pregnant women living with HIV had access to antiretroviral drugs for PMTCT, with about 12% of HIV-exposed infants receiving testing for early diagnosis by age 2 months. To achieve optimal viral load suppression and reduce the risk of mother-to-child transmission (MTCT) of HIV, the World Health Organization in 2006 recommended “Task Shifting” as a means of initiating and managing more patients to meet the demand for antiretroviral therapy. In the Nigeria’s Department of Defense (DoD) this task redistribution necessitated utilizing Mentor Mothers to facilitate antiretroviral compliance and retention in care. This was to boost the health workforce and attain target achievement with PMTCT in the DoD. The aim of this study was explore those processes that guide implementation of the mentor mother program for PMTCT of HIV in some hospitals in the DoD in Nigeria as no research has been conducted in this area so far.

Methods: The case study methodology, qualitative research approach was utilized and in-depth interviews were conducted with relevant stakeholders. Open coding for major themes and sub-themes was done and data analyzed using thematic analysis.

Results: Foundational Factors; Leadership; Skill acquisition; and Service Characteristics emerged as processes guiding the implementation of the Mentor-Mothers program in the Nigeria DoD.

Conclusion: The findings support the Mentor Mother (MM) Model, which empowers mothers living with HIV – through education and employment – to promote access to essential services and medical care to other women. Working with governments, local partners, and communities played a pivotal role in the formation, facilitation, and implementation of the MM model to effectively decrease HIV infections in children, reduce child and maternal mortality, and support the livelihood, development of women, families and communities.

Background

It has been documented [1]that Nigeria has the second largest HIV epidemic in the world and one of the countries with the highest rates of new infection in sub-Saharan Africa. This is reflective of the numerous challenges in the provision of healthcare services and coverage of PMTCT of HIV in the country. Despite recording an improvement in the HIV prevalence of 1.4% among adults aged 15–49 years as compared to the previous estimate of 2.8%, in 2019, [2] report that only 32% of pregnant women living with HIV have access to antiretroviral drugs for PMTCT, with about 12% of HIV-exposed infants receiving HIV testing for early diagnosis by age 2 months in Nigeria. Several studies document that maximum adherence to ART is of extreme importance in achieving optimal viral load suppression to reduce the risk of mother-to-child transmission (MTCT) [3]

Therefore the World Health Organization (WHO) in 2006 recommended “Task Shifting” as a means of initiating and managing more patients to meet the demand for antiretroviral therapy [4]. According to [5], this

rational distribution of tasks could occur amongst members within health workforce teams such as doctors to nurses and midwives, lay health workers or community workers, and people living with HIV. One of such categories of personnel are Mentor Mothers (MMs). They are mothers living with HIV who have had personal experience in PMTCT programs, trained briefly on the basic rudiments of HIV and are willing to use their own personal experience to support other women and their families in HIV care. They act as mentors to diagnosed HIV positive pregnant women within the PMTCT programme to ensure compliance and retention in care [6]. They have been utilized to propagate the concept of the PMTCT program in the sub-Saharan Africa and beyond. In Nigeria, the concept of the PMTCT program began in December 2000 with the inauguration of the PMTCT National Task Team (NTT) in line with the World Health Organization (WHO) guidelines, while actual PMTCT services commenced as a pilot project in July 2002 [7]. Much as literature demonstrates the beneficial impact of the Mentor Mother (MM) program on PMTCT globally, no structured evaluation of PMTCT, the effectiveness of its services since inception has been undertaken in Nigeria despite the high burden of MTCT of HIV, and no published studies have explored the perspective of the MM program implementation in the Nigeria's DoD. As such; [8] note that there exists inadequate data on the MM programs in Nigeria. This is the view of [9] when they said that the involvement of "Mentor Mothers" in HIV service delivery has not only created an additional source of human resource for health, especially in low-resource, high disease-burdened settings but is also very effective in the context of rapid antiretroviral therapy (ART). They provide additional counselling, education and support to enhance coping skills of pregnant women newly or previously diagnosed with HIV infection. This strategy ensures that women are retained in PMTCT care and treatment as stated by [10]. [11] reiterates that the MM model has been standardized for PMTCT care and implemented in 10 other African countries (within the sub-Saharan Africa) apart from South Africa where it was first introduced. According to the [12], evidence has demonstrated that the intervention has significantly improved maternal HIV and pediatric outcomes across cultures. [13] also affirm this beneficial impact of peer support on knowledge and attitudes to HIV.

Objective

The objective of this study was to explore the MM program in the Department of Defense in Nigeria with a view to understanding its processes and Implementation. This paper is one in a series of five from a PhD research that sought to analyze the Mentor Mother implementation in the DoD and provides the basis for developing a framework to facilitate utilisation of mentor mothers in all the hospitals in the DoD.

Methods

Study design

The case study methodology, qualitative research design [14] was utilized to explore the processes that guide the implementation of the MM program in the DoD. This approach was deemed appropriate in order to explore and understand the influence of some national health policies and processes in Nigeria that govern the implementation of the MM program in the DoD [15]. By the qualitative nature of this project, semi structured interviews were conducted and the participants were purposely chosen as they play a pivotal role in the Implementation and coordination of all HIV/PMTCT services in all the armed forces hospitals across the 36 states in Nigeria. Two individual interviews were conducted with two critical stakeholders responsible

for administering and coordinating the Armed forces HIV program in the DoD. Field notes, verbal and non-verbal cues were taken during the interviews. These were utilized during analysis to better interpret the results.

Setting

This study presents data collected as part of a PhD research conducted in some selected Hospitals under the Army, Navy, and Airforce at the Department of Defense in Abuja-Nigeria where the MM program took effect in 2014 [16]. The Army, Navy and the Air Force each has a corresponding Medical Corps/Services and headed by the Corps Commander Medical (Army) and Director Medical Service (Navy and Air Force). Medical facilities of secondary and tertiary levels run by the military include: Defense Headquarters (DHQ) -2, Army- 12, Navy- 4, Air Force- 5. These hospitals are distributed across some of the 36 states in Nigeria including Abuja, the Federal Capital Territory (FCT). Abuja administratively assumes the status of a state with its own minister who is equivalent to a governor in any of the 36 states. Abuja is in the north central part of Nigeria (Middle belt region) and is home to the headquarters of the Nigeria's Department of Defense with well-established health facilities providing HIV/PMTCT care.

Participants

The participants in this study included two directors(Medical Doctors): one in charge of the Nigerian Military HIV program and the other (the Senior Programs Specialist- coordinator of the MM program in the DoD. These participants were purposely selected based on their training and specialty in HIV, experience with PMTCT care and their pivotal roles in the administration and sustainability of the program in the DoD . Their perspectives were sought in respect of the MM program implementation, the DoD's responsiveness to the Program to understand the intervening conditions that have facilitated and/or hindered the implementation of the MM program in the DoD. The rationalization of their personal experiences and the DoD operational activities was employed as a means of harnessing data to understand the processes governing the implementation of the MMs program for PMTCT of HIV within the Nigerian DoD health facilities.

Instrument

The WHO Health Systems Responsiveness Key Informant Questionnaire (2000), Key Informant Survey (2001) and The Health system performance assessment (HSPA) tool guided the development of the semi structured interview tool for this study. Instrument was developed by the PI after conducting Literature review and validated by presentations at an expert panel of the University of KwaZulu-Natal Professors and PhD students of the School of Nursing and Public Health.

Data collection

Permission to conduct the research was obtained from the Ministry of Defense Health Research Ethics Committee (MODHREC), (the coordinating arm of the Nigeria's DoD) after which appointments were made with the two Directors for the purpose of self-introduction, explaining the research topic and obtaining permission to conduct interviews. A second appointment was made to obtain their written consent emphasizing the fact that participation was voluntary. Written and verbal informed consent was obtained

from the participants and at their choice, the interviews were conducted while they were on duty in a quiet venue, free from distractions. A semi-structured interview guide was utilized with each participant. The interviews which lasted between 30–45 minutes each took the form of an open conversation and were audio recorded with the participants' permission. The participants were assigned pseudonyms "Bogo" and "Sesa" to ensure their identity remained confidential. All interviews were conducted in English language and data were later transcribed verbatim into written text for data analysis.

Trustworthiness

In order for the participants to contribute meaningfully during interview sessions, the PI attempted to establish trust with them by reemphasizing that participation in the study was voluntary. This was established in the opening moments of each session by indicating that the study was for academic purpose only and also encouraging them to be frank. Emerging categories from the data have been communicated to the participants with a view to exploring their opinion of the interpretations for validity of the findings.

Data analysis

The audio recordings were transcribed verbatim. Transcripts were stored and organized with NVIVO™ software. Open coding – word-by-word – for major themes and sub-themes was done. The codes, discussions outlines and themes that emerged were compared based on similarities and differences and categorized as (themes), and finally the themes were formulated into different format based on the research phenomenon. The correlation between each of the themes was identified which explored the views of management (stakeholders) on the policies and procedures guiding the implementation of the MMs program for PMTCT of HIV within the Nigerian DoD health facilities. To accurately assess the above within the Nigerian DoD health facilities, a TA technique [17] was used by the researcher to demonstrate the relationships between key performance indicators (themes or factors) and their impact on the overall facilitation and implementation of the MMs program within the Nigerian DoD health facilities. This allowed the researcher to individuate the role that each of these factors played as far as the program implementation and sustainability within the Nigerian DoD health facilities is concerned [18].

Results

The findings are presented by categories, themes, and essences to examine the processes and implementation of the MMs program in the Nigeria DoD. Ultimately, describing essences was employed in this descriptive study in an effort to provide a true essence (meaning) of the descriptive responses shared by some of the program stakeholders [19] These categories which emerged through asking some of the program stakeholders what the processes are that guide the implementation of the Mentor-Mothers program in the Nigeria DoD include Foundational Factors; Leadership; Skill acquisition; and Service Characteristics. The reviewed relevant literature provides insights into the processes and implementation of the MMs program and the resources and skills needed to deal with the challenges in order to lead effective organizations. For this study, this led to the discovery of four (4) categories that encompass the processes guiding the implementation of the Mentor-Mothers program in the Nigeria DoD.

Foundational factors

This category emerged through asking some of the stakeholders if there was any document(s) guiding the implementation of the MMs program. Here, the relevant literature suggested that the National Strategic Framework 2017-2021, and the WHO Global Plan which aims at ending HIV/AIDS play a major role in the implementation of the MMs program in the Nigerian DoD towards achieving Zero new infections, zero AIDS related deaths and stigma [20]. Unlike the United Kingdom and some countries in Sub-Saharan Africa (Such as South Africa, Kenya, Lesotho, Malawi, Swaziland, Uganda, and Zambia) where the MM program is well established by law, there are no direct policies or Acts establishing the mothers2mothers (Mentor Mothers) program in Nigeria. While the Mentor Mothers model has been standardized and implemented for PMTCT care in these countries and other countries in the globe [11], the Nigeria's National Health Act (No 8 of 2014) sections 42 (a-f) empower the minister of health to create new categories of health care providers to be trained or educated in conjunction with appropriate authority to meet the requirements of the national health system [21]. Though the MMs program is not officially incorporated in the Nigerian National Health Strategic Plan, the Ministry of Health guidelines are an important part of the DoD' strategy to reduce mother to child transmission of HIV through some mainstreams' frameworks together with the National Health Act. These further support the findings recorded in the Kenya MM Program (KMMP) – suggesting that through the National Health Strategic Plan, aligned with the national Elimination of Mother-to-child Transmission (eMTCT) Framework, and the Kenya National AIDS Strategic Plan – the Kenya Mentor Mother Program was developed [22]. Thus, as a participant in the Global Plan on eMTCT, the Government of Kenya supports the facilitation and implementation of the MMs program in the country [22]. In addition, the Kenya Government also recognizes that women living with HIV must be at the centre of the response to the epidemic by critically playing a role in task-shifting to promote health service quality improvement as well as uptake, retention in and adherence to care [22].

The Foundational Factors revealed three (3) themes which are crucial to the facilitation and implementation of the MMs program in the Nigeria DoD. They include ***guiding principles/models, PEPFAR and State funding;*** and ***partnership with the national health system.***

Guiding principles/models.

The findings from this study support the arguments reported in the Literature Review Chapter. For example, even though the MMs program is not legally supported by policy in the country, the Mentor-Mothers initiatives exists in Nigeria since 2007, currently guided by the [23] and operates in line with the WHO global plan (with some success), at different levels of training and structure in some states of the federation [15, 24]. All the stakeholders noted that the Nigerian DoD MMs program is modelled by mainstream guidelines/model, such as the WHO guidelines, the ICAP model, National Health Policy, and the Nigerian DoD policy.

If we are to talk about documents, that was what came up from the World Health Organization. Based on that, we are leveraged on that. As they do that, with other implementing partners, we adopt it. That is what is guiding us, in regard to that. We are more of leveraging on the international mentor mother model to be able

to fashion out or carve out what we practice in the DoD and it is the same checklist used in accessing the progress, that is more of what we do here. Which means positively it has been able to help us adopt what they have and as well as use that to make sure that we are getting it right.(Bogo)

Partnership with the national health systems. The other participant having compared program activities with stakeholders from the east African region notes the difference in the recruitment criteria for mentor mothers:

I must be frank with you. Being the person anchoring the programs I have had very little interactions with the Mentor Mother Programmes elsewhere apart from the pages of theories of books and the little experience I came with from ICAP. But again, I think I have not been able to look at that clearly, except one of the review meetings we had with other countries from the east African sub region in Tanzania where experiences were shared and I saw that our operation was little bit far. Because the criteria we set for recruitment, our standard is high. At least we need a minimum of secondary school level. But in their region a lay person that has just little knowledge of how to write well were recruited. So I think that is just the difference I saw compared to the program elsewhere... from the experiences I came with from ICAP I proposed to the office and they gave me the go ahead to implement the Mentor Mother Program. ...ICAP like CIHP is one of the international NGOs, it is the University of Columbia that supported the HIV program.(Sesa).

Working with governments, local partners, and communities played a pivotal role in the formation, facilitation, and implementation of the mothers2mothers' MM model to effectively decrease HIV infections in children, reduce child and maternal mortality, improve the health of (women, adolescents, and families), reduce stigmatization and discrimination, and support the livelihood, development of women, families and communities [25]. Furthermore, findings from this study also support the National Guidelines for the KMMP for PMTCT of HIV programs.

PEPFAR and State funding

The findings of this study further suggest that the MMs program is funded by PEPFAR and State funds as corroborated by the participants.

The program is funded by counterpart funding. The DoD brings some part which they administer themselves and the Federal Government of Nigeria makes available some parts. Unfortunately, things have not been rosy, from time to time it goes up and down.(Bogo).

We have been funded through PEPFAR and we are in collaboration with the Nigerian Minister of Defense. So, funding has been through the Nigerian government and the American government through PEPFAR(Sesa).

In addition, when asked of specific challenges facing the facilitation and implementation of the MMs program, these stakeholders also indicated that there has been a funding challenge facing the progressive implementation of the program. This is an indication that funding the program in the Nigeria DoD has been very unstable over the years. Thus, expanding the MMs program to other military sites in the country is limited by the amount of funds injected into the program over the years. This threatens the expansion and sustainability of the program.

They feel the program has been worthwhile, met its goals. The only challenge is that they look at the funding that has crashed, you know PEPFAR funding has been dwindling over the years. Otherwise I know they would have said 'well go ahead and expand to all the other sites'. I think they see it that the program has worked and has impacted, and they are happy with what I am doing. ...But again, funding has been a challenge; I could not expand that far.(Sesa)

Funding, funding, funding because when there is fund we are able to get personnel, we are able to get equipment, we are able to get all the logistics required to keep the program running.(Bogo)

Leadership

Leadership was also noted by the participants as one of the key performance indicators that influenced the facilitation and implementation of the MMs program in the Nigeria DoD. This was determined by asking the stakeholders to specifically describe what has enabled the successful implementation of the program in the DoD.

I think the leadership has been there whenever I make a request. I seek approval to do some things and they allow me to do that. So, I think they have been supportive either through guided, quicker reviews of my proposals and my requests. They have been very supportive. ... The leadership support, team support and the facility being there and the ownership i am seeing over time with facilities because i know by the time the little incentives we are giving to the sites stop which we do not pray for, i am sure the level of commitment i have seen from the leadership of those facilities would be able to take this on, so that the program would not just crash.(Sesa).

Thus, this category was associated with themes such as *management team support*, the *military factor*, and *team player/spirit*. The essences behind these three (3) themes speak more on the management team, the wisdoms and solutions that the management team brings into the program (management of the program), and the team spirit of the sites' managements. These were deemed to be effective factors influencing the implementation of the program to improve the health of mothers through improving reproductive, maternal, newborn and child health outcomes. Through the DoD's MMs program, the DoD leadership factor propagates working with governments, local partners, and communities. Hence, the findings from this study support the mothers2mothers' Mentor Mother Model, which empowers mothers living with HIV – through education and employment – to promote access to essential services and medical care to other women [25]. Just like the National Guidelines for the KMMP were established through the participatory and consultative processes drawn from expert opinions from public health institutions, academic intuitions, NGOs, and development partners [22], the findings from this study are an evidential conclusion that leadership support such as government support, experts support, institutional support (such as health, academic, private, and development intuitions), local partners, and communities play a pivotal role towards the formation, facilitation, and the implementation of the MMs programs in the DoD. Although findings from this study and other studies [15, 24] suggest that MMs program is not nationally implemented in Nigeria, the development and implementation of the program in Kenya incorporates best practice approaches from PMTCT implementers across the country for the development of the Kenya Mentor Mother Model [22].

Team spirit describes the feeling of loyalty, commitment, and pride that exists among members of a team that keeps them committed to the team's success. This entails a lot of corporation among team members. This theme emerged as one of the key factors influencing the MM program implementation as volunteered by Bogo ;although that has not been without some challenges:

The team spirit, encouragement, training and the willingness to sacrifice. ... on the positive side we have our site team commanders, especially site team commanders give us a lot of encouragement in making sure that the program flourishes. But on the negative side they are bound to be some challenges here and there. But in the communities where we operate, the military, the commanders, the nurses, every other person is very supportive. That is the spirit behind the success of this program as a whole in the military (Bogo).

While a portion of the program success story is attributed to the management team (including the program staff), the findings of this study further revealed that poor management also impacts negatively towards the facilitation of the program. Bogo states further:

My problem is the program staff and some of the challenges that they have. They are trained on logistics to be able to have about two months stock for them to make requisition using CRF (Cost Revolving Fund), but some people will just wait until everything is finished and they wake up one morning and then say there is no test kit and they start talking about emergency order and the rest. When you look at it, it is not that the program is out of these consumables, it is just the inertia on the part of people who are supervising the training. Occasionally I tell them, "in your house would you wait until the whole salt that you have in your house is finished"? You do not wait, because when you see it is halfway gone, you start looking for how to make them available... "in your houses do you wait until the whole box of matches is finished"? You have and keep a spare, that is why we are able to have some buffer supply in case there is need (Bogo).

Skills Acquisition

As a category, skills acquisition was described as one of the focal points that plays a significant role for the facilitation and implementation of the Program in the DoD. Here, the findings suggested that the program staff acquire skills through three (3) main themes: *personal experiences with HIV; training* (trained through general training on HIV, PMTCT training, review meetings and skills update, workshops and seminars, and data literacy), and *basic education qualification* (a minimum Secondary School qualification). The essence of these themes is to measure providers' preparedness, skills, and competency. In other words, the findings from this study revealed that to ensure the successful facilitation and implementation of the MMs program in the Nigeria DoD requires skills acquisition. This entails selected candidates undergoing several trainings. Here, the most important primary engagement criteria are personal experience (women who are living with HIV and had successfully undergone the PMTCT program) and have a minimum of a Secondary School certificate. Thereafter, they are trained in several specific aspects related to PMTCT to enable them deliver the right services needed as Mentor Mothers. Although not the same approaches are applied in different MMs Programs in other countries, these findings are similar to the findings recorded in most studies around the globe. For example, several studies venture on personal experiences (women who are living with HIV and had successfully passed through the PMTCT program) as their primary engagement criteria [26,22, 12, 15, 25, 27, 28, 11,29,30]. Concerning specific training, both the findings from this study and other studies agreed in most

of the specific trainings that Mentor Mothers undergo to deliver quality services such as basic communication and counselling skills, HIV testing and counselling, PMTCT and paediatric care, training on adherence to HIV care and treatment, record keeping, training on confidentiality, infant feeding and child nutrition training and many more [22, 12, 15, 25, 27, 28, 11,29,30].

When asked about the criteria for engagement as a Mentor Mother in the DoD, the specific training they require for the performance of their duties, the contents and nature of their training, and the efficacy of the training – in response to skills acquisition the participants provided these responses:

Engagement criteria

Basically the person must be able to read and write, so a minimum of a secondary school certificate suffices. Although we have some that are Bsc holders. Then the person must have a fair knowledge of HIV services, must be a positive woman living with HIV and would have gone through the PMTCT program in the sites. ... Ja even though, first and foremost as a Mentor Mother the issue of stigma should not be in the way. That is one of the criteria. It should be a woman that can come in front of other mothers and say "I am a positive mother". But again, we also tell them that HIV issues surround confidentiality, stigma to ensure that a high level of confidentiality is needed from them. As much as possible clients' information should not be divulged to people who should not know and I think they have been doing well on that, compliant to that.(Sesa).

What plays out most of the time is-those people who probably have the same status challenge, those are the ones we make use of because they are veterans in that field and they have done very well. Based on that we could use them to mentor other people (Bogo).

Having been employed, the MMs undergo training to enable them carry out their duties:

Specific training

They receive basic training about prevention of mother to child transmission, HIV testing, disclosure of results to mothers, we teach them how to track, we also give them some elements of EID services, that is early infant diagnosis services. And basically, those are them; and how they can track lost clients. Those are the basic things that are captured in the curriculum we currently operate for them now (Sesa).

The mentor mothers occasionally are brought along with the HEADS of Nursing Services in the different health facilities and they are just given a general training on HIV, at least a basic foundational training on HIV for about two days. Some of them come in here for about three days and from time to time they are still invited and updated on the current knowledge (Bogo).

Training contents and nature of the training

In Ethiopia, the Mentor Mothers Training curriculum encompasses 14 modules, encompassing 52 individual sessions, [36] carefully developed to cover the objectives of PMTCT including male involvement in PMTCT/ANC/MNCH and reduction in gender-based violence. Asked what the content of the training curriculum for MMs in the DoD entail, the participants related thus:

It is both didactic and practical hands-on training especially when it requires EID services. We put them through that even though some facilities would not ask them to do it physically but again, we give them that knowledge so they know how those services are done. It is both didactic and also hands-on training (Sesa).

It is more of foundational training, more of telling them about HIV incidence, how it is acquired, how it is transmitted, what we can do to avoid getting infected, and the need for breastfeeding because of some of the challenges we have with people who mix feed and the rest of them. These are the contents of what we mentor them on and the need to tell them about adherence on their drugs, how to follow the mothers up especially those 'lost-to-follow up'. Apart from the general tracking, they still do their own tracking. ... from time to time, there are other central trainings...(Bogo).

Their narratives reveal an absence of a structured curriculum for training of the MMs as it obtains in South Africa. The MM program in the DoD being borne out of the initiative of one of the directors could be one of the reasons for the absence of a definitive policy establishing its implementation and subsequently, lack of a definitive career structure for the MMs.

Training efficacy

To effectively build human resource capacity for health particularly in HIV care requires implementing HIV care and treatment programs for health care providers. The PI sought further clarification on the effectiveness of the training programs for the healthcare providers which included the MMs, and Sesa responded as follows:

Sometimes whenever we call them for the review meeting, we also flash on those trainings to remind them especially if there are new things introduced into the program. So, I think on the effectiveness I will say it is good because that has improved our indicators for lost- to follow up... it has come down because mothers have been tracked now actively. Positive mothers not just pregnant positive mothers(Sesa).

Service characteristics

Facility and service characteristics predict access to ART, retention in care and PMTT outcomes. Four (4) key performance indicators that promote the facilitation and implementation of the MMs program in the DoD emerged from this study. They aim at promoting healthy living (through tracking patients' progress, free and inclusive services, EID services and HIV testing, and promoting zero discrimination). These are: *Staffing and wages, social, financial and service quality, socioeconomic and psychological support, and service satisfaction*. The essences in this category include: Personnel, Services and Products, and Service quality. In summary, this study findings concur with the argument that the utilization of mentor mothers in PMTCT, especially in high-burden-low-resource centers, improves rates of retention in care with positive outcomes [12]. In agreement with [31] findings, the results of this study revealed that Scale-up of ART and PMTCT has been some of the great successes of the MMs program in the DoD since its inception. Therefore as part of its strategic interventions, the MM program fosters an enabling environment for HIV positive pregnant and breastfeeding mothers and HIV-exposed infants to access antiretroviral drugs.

Staffing and wages

Areas worst hit by the HIV epidemic require an ideal number of health workers, who are suitably distributed across different occupations and geographical regions, to ensure population coverage of health interventions. Health worker shortages in HIV care provision are high in Nigeria which is listed among countries with acute health worker shortages and by extension the DoD. This has been seen to impact on the progress towards reducing the rate of new infections in the country. Asked to describe what guides facility decisions regarding the implementation of the MM Program in the DOD, the participants responded thus:

Data shows that many women that are positive are not remaining faithful on their drugs. Sometimes they will initiate it, before they leave, we hardly see them, So, we felt getting an effective tracker using the Mentor Mothers who are by themselves positive mothers who have delivered in our sites... getting them on board so they will be able to come in and also track the sites, that is how we got them on board. ... There are nineteen of them at the moment, one per site.(Sesa).

We could say we have about 30 mentor mothers because they are attached to each site, comprehensive sites based on what I have said.(Bogo).

The participants also gave reasons for the current state of the MMs wages based on the complaints by the MMs:

Ja, I remember in a few of the sites they have made this thing known to me. But again, that even informed why we increased the stipend we are giving them. I know we started with about N20 000 and when I presented their issues to the office, office said I can ensure an increment over that which they now gave close to about 100% increment. So, they are now paid a maximum of N40 000. But what we did not do was to look at the various sites based on the standard of living there. We just did it as a program so as to have a unified structure for them.(Sesa).

We give the mentor mothers some stipends to encourage them at least for their transport, for making their time to be able to follow up on these other mothers who are challenged. ... Looking at the financial status of the country; and these are mentor mothers. Some of them get as much as N40 000, whereas graduates are not even getting up to twenty thousand. So, it is really big, really and for some of them who have lost their husbands, this has been a source of income...they are very happy as far as I am concerned.(Bogo).

It would appear that definitely, the MMs exist in the DoD to fill a gap based on an existing need. Therefore when asked about their employment status, Bogo described it as ad hoc (not permanently employed):

We can say that they are not permanently employed; they are more of ad hoc, contract ad hoc staff. As far as the program lasts and there is funding, they will continue to exist (Bogo).

An interaction with one of the MMs confirmed the narrative above:

As a MM you are not employed, and because you are not employed you have not tendered any certificate to say this is what they are employing you based on. The qualification that they need is if you could read and write, and you are "positive". Some with primary school certificate could read and write so they came in as volunteers. Some with secondary school certificate, some with BSc and some with Masters. So if at least they

can look out for...ok people with this qualification maybe will be paid a certain amount because you have this qualification, you can be paid this other amount, I think it would go a long way.

Much as complaints such as this had attracted an increment to their stipends, the narrative of Bogo reemphasized the status of their employment:

Being a mentor mother is a privilege and not a right.. it is not a regular job. . And there is no work, no employment for now and they are not coerced, it is offered to them. Some people who are out there are struggling to see how they can come into the program. But I know that for some other people even if they are placed on N200 000, they will still say 'how we wished they could make it N250'.(Bogo).

The above narratives underscore the lack of permanency of the MM's employment which perhaps MMs view as a lack of support and subsequently could impact on service delivery. However, Sesa paints a clearer picture of the MMs engagement for service delivery:

Services and Products

Basically, we are exposing them to also look at more of tracking among people on treatment, that is, mothers that are on HIV treatment, not necessarily mothers who are pregnant now. So, we are using them on that and also exposing them to data recording around EID services (Sesa).

Clearly, from this participant's narrative, tracking is a focal aspect upon engagement as an MM. Interestingly, they are also trained on data recording which is a more engaging aspect of the MM system, which not only affords research capacity building but also for the MM's to witness how their involvement contributes more comprehensively to the programme.

The DoD management also avails patients and other healthcare consumers with social support services to further build capacity towards sustaining the program:

There are other social services beside HIV services and we've always encouraged patients to go to the right place to seek those services. Those rights to treat, patients' rights also spell out some of those things in sites where those services are available. So, they go in and seek those additional services. ...(Sesa).

Bogo further justifies the existence of the MM program and services:

The mentor mothers program has come to be simply because we want to use them to encourage other people who have these HIV challenges so that they can encourage them to adhere to their treatment and other processes that are supposed to keep them and their families healthy. ...we counsel them one on one on pre-counselling, post-counselling and other necessary things. It is done in such a way that they are away from where people can hear what they are discussing, where them only can see one on one so that there will not be any need for anybody to know who they are talking to, or who is volunteering information. ... Occasionally we make available little things, there is this OVC site where we have an OVC program that takes care of about 250 OVCs and those ones who are out of school. We send them for skills acquisition. Just last week Tuesday we had four of them who passed out from OVC skill acquisition and they were given start up packs. ... there is some social support and financial benefits. These are the things that are the motivating

factors behind the progress so far made. ... we are sponsoring about 250 pupils, I mean students now. And we have some people for out of school program and we've spent almost up to eight to ten million Naira in the OVC program. I think it is fairly encouraging (Bogo).

When asked about how accessible the services within the program are, the participants responded that their services are:

Very accessible and that is why even most of our clients are even civilians. About 85/90% of our clients are civilians. That is just to tell you our services are very accessible. ...we provide them with mamma packs, we make sure antenatal investigations are free, and that when they deliver the delivery fees are made very cheap and attractive. And in some of our facilities, from the time of registration to the time of delivery they do not pay anything (Bogo).

All our services are at no costs. PEPFAR supports everything. ... They are very accessible, except because of the insurgency, some restriction to the barracks has been enforced, where we see some sites still having to profile clients coming in to seek ANC services. But again, with our engagement with the commanders, women who are pregnant are not being profiled because that women first is seen as a pregnant person who is going to access services in the ANC. So, access I think we don't have any issue with that (Sesa).

Service quality

Quality determines the extent to which a product complies with a set standard. The core of the MM program is access to anti-retroviral therapy with positive outcomes for both mother and baby. To achieve this, trained MMs within peer group settings provide individual support for HIV-positive pregnant women and postpartum mothers to help them address unmet needs for understanding HIV, psychosocial support and acceptance, self-care, infant care, and over the longer term, economic needs [30].

On how the recipients of the program would describe the services they receive, the participants had this to say:

I think the mothers are happy for it because on two occasions on a site visit, I engaged with them, they would tell me this mentor mother is a superb woman around, she is so welcoming, she is so supportive of their actions, of the services. The mothers see it as a welcome service and these services have actually improved, improved on their engagement with the facility. So, they see it more as a beneficiary service, rather than being a burden. So, I think the recipients are happy, and they will never want this program to die so soon (Sesa).

He went further to highlight the gains of the program:

I think the goals have been well met and that is why we've sustained that action. As I said we've seen improvement especially in our PMTCT final outcome where most babies are coming soon after eighteen months negative. To me it has been well met. With the engagement of Mentor Mothers, with advocacy, with the kind of improvement they are seeing with those that are attending services there. So many are now seeing the need to have facility delivery. ... In summary as I said, we are having better outcome for our babies now. We are having increase in facility deliveries. And the issue of stigma that has been a major issue in the

program has actually crashed down. People are now ready to come and disclose their status, because they feel that for the Mentor Mother in the first place to come out publicly and tell them well, "I am positive and I am looking healthy and I have given birth to so so number of children who are negative". So those are the good effects of the entire program (Sesa).

This view was corroborated by Bogo:

From my own assessment I will say to a reasonable extent they will give it a pass mark. ... they see the services of the mentor mothers as encouraging, because when I say encouraging, I am saying it from the perspective that those who would not have followed both treatments, care and the other supports have now been able to be retained in the program by virtue of the activities of the mentor mothers. ... The significant difference that I have found is that we have more people being retained in our care now compared to what it used to be (Bogo).

Discussion

The current study critically explores the processes guiding the implementation of the MMs program for PMTCT of HIV in the Nigeria's DoD and highlights the core components, resources and skills needed to deal with the challenges in order to realize organizational goals. [32] draw our attention to the shortage of virtually all cadres of health care workers in Nigeria, leading to poor utilization of most health facilities for essential services in the country, ranging from HIV, ANC to other basic services. This prompted the establishment of the Nigeria's National Health Act (No 8 of 2014) Sect. 42 (a-f) empowering the minister of health to create new categories of health care providers to be trained or educated in conjunction with appropriate authority to meet the requirements of the national health system [21]. Consequently, the concept of PMTCT program in Nigeria, which began in December 2000 (modelled after the World Health Organization (WHO) guidelines) started with the inauguration of the PMTCT National Task Team (NTT), but actual PMTCT services commenced as a pilot project in July 2002 [7]. As an important entry-point for PMTCT services, pregnant women were captured at the earliest opportunity and tested during antenatal care, labour and delivery [33]. In order to scale up access to ART and ensure effective PMTCT coverage, the DoD has utilized Mentor Mothers for PMTCT in most of its hospitals. Unlike in Nigeria where there are no direct policies or Acts establishing the MM program, the Mentor Mothers model has been standardized and implemented for PMTCT care in some sub-Saharan countries such as South Africa, Kenya, Lesotho, Malawi, Swaziland, Uganda, and Zambia [11]. These have been expressed in the views of the participants in this study specifically Bogo who admits that the MM program in the DoD has been modelled after the WHO and implementing partners guidelines to suit the needs of the Nigerian Military PMTCT program. Similarly, Sesa as the program initiator and coordinator relates that he consolidated on his experiences and gains from ICAP which guided him on the Initiation and Implementation of the MM program in the DoD. Much as this program is not legally backed by a definite policy or officially incorporated in the Nigerian National Health Strategic Plan, this initiative exists in Nigeria since 2007 and operates in line with the WHO global plan (with some success), at different levels of training and structure in some states of the federation [15, 24] such as Kebbi State, Sokoto State, Taraba State and Zamfara State where the volunteers are trained under the auspices of Management Science for Health to plan and coordinate public health interventions for linkage and retention of HIV positive women in

PMTCT and treatment services. These findings are in line with the Views of [7] which indicate that the PMTC initiative in Nigeria has been modelled after the WHO and implementing partners guidelines. Again, no structured evaluation of the MM program in Nigeria has been undertaken since it began [15], and that has prompted this research in the DoD. Similarly, [8] lament the inadequacy of data on its effectiveness which reflects the manpower personnel and infrastructure challenges with implementing PMTCT and EID services particularly in resource-limited settings. The current study having examined the MM program in the DoD revealed 4 institutional categories which formed the bedrock for the initiation and running of the program, even as no definitive policy governing its implementation exists (in the DoD). This underscores the implementation bottlenecks of the PMTCT/MM programs in Nigeria. Notwithstanding, the DoD has leveraged on the gains of the program in other sub-Saharan African countries to plan activities in line with WHO Global plans by incorporating mentor mother activities for effective PMTCT care and services in the Nigerian military health facilities. The need to ensure all HIV positive pregnant mothers are reached and able to access care and all HIV exposed infants (HEIs) screened early enough to receive care and treatment however remains expedient.

Study Limitations

Being that the Nigerian Military is highly regimented and intelligence guarded, the participants in this study were being cautious with volunteering certain information particularly when it had to do with policy. Much as information about HIV is available in the public domain, research on engaging MMs for PMTCT in the DoD is limited. Although the participants had been assured that this study was strictly for academic purpose, the use of a tape recorder during the interviews may have added to the participants' exercise of caution.

Recommendations

Further research on the importance of the peer mentorship strategy for PMTCT needs to be done in Nigeria and the DoD with more focus on incorporating the mentor mother program into the mainstream of the Nigerian health care system.

Conclusion

This study has explored the policies and processes that govern the implementation of the MM program in the DoD. Some of those processes that have in one way or the other shaped the MM initiative in Nigeria and by extension the DoD are the UNAIDS Global Plan, The 2014 Nigerian PMTCT guidelines, the WHO "Option B" triple ARV regimens through pregnancy and breastfeeding and most importantly the peer support strategy using MMs. The findings support the Mentor Mother (MM) Model, which empowers mothers living with HIV – through education and employment – to promote access to essential services and medical care to other women. Working with governments, local partners, and communities played a pivotal role in the formation, facilitation, and implementation of the mothers2mothers' MM model to effectively decrease HIV infections in children, reduce child and maternal mortality, improve the health of (women, adolescents, and families), reduce stigmatization and discrimination, and support the livelihood, development of women, families and communities [25]. In the DoD, the program has not been without some challenges which bother majorly on

funding and leading to challenges with sites maintenance. Data revealed that not all the sites in the DoD are covered by mentor Mothers whose roles have even been extended due to manpower shortages. However, the critical implementation gaps identified will need to be reflectively and evaluatively addressed in order to achieve the 90-90-90 goals for pregnant and postpartum women in Nigeria even as others have surpassed [34]. In addition, the MM initiative requires a more formalized, well-defined position that will properly position it in the National health system which is responsive to the needs of recipients as suggested by [35].

Abbreviations

ART = Antiretroviral therapy, ARVs = Antiretrovirals, DoD = Department of Defense, eMTCT = elimination of mother-to-child transmission, ENHAT-CS = Ethiopia Network for HIV/AIDS Treatment, Care and Support, FCT = Federal Capital Territory, HIV = Human immunodeficiency virus, KMMP = Kenya Mentor Mother Program, MHRP = Military HIV Research Program, MM = Mentor Mothers, NMOD = Nigeria Ministry of Defense, OVC = Orphans and vulnerable children, PEPFAR = President's emergency Plan For Aids Relief, PMTCT = Prevention of Mother-to-child Transmission, SPS = Senior Programs Specialist, WHO = World Health Organization, WRAIR = Walter Reed Army Institute of Research.

Declarations

Ethics approval and consent to participate

Approval to conduct this study was obtained from the University of KwaZulu-Natal's Humanities and Social Sciences Research Ethics Committee (HSSREC) Number: HSSREC/00000186/2019 and Gatekeeper permission was granted by Ministry of Defense Military Medicine and Research Health Implementation Program Number: MOD/HIP/G3/230/09. Written and verbal consent was obtained from the participants who were informed that Participation was voluntary and that they could withdraw from the research at any time. Confidentiality was assured through use of pseudonyms so that data could not be linked to participants. The data were kept in a secure place available only to the PI and her supervisor.

Consent for publication

Not applicable

Availability of data and materials

The datasets for the current study are not publicly available as this is meant for this research specifically. However, Data can be available upon reasonable request to the corresponding author.

Competing interest

None. The authors declare there are no potential conflicts of interests.

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Authors' contributions

JMI conducted research in preparation for a doctoral thesis and prepared the manuscript. EMM supervised the study, provided guidance in preparation and completion of the manuscript.

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Table 1

Table 1: Summary of Categories and Themes of the program facilitation and implementation

Categories	Themes	Essence
Foundational factors	Guiding principles/models PEPFAR and State funding Partnership with Nigerian DoD	Program model Funding and key stakeholders
Leadership	Management team support The military Team players/spirit	Management team Management solutions/wisdoms Team spirit or relations
Skills acquisition	Personal experiences with HIV Training Basic educational qualification	Training and Skills Competency
Service characteristics	Promote healthy living Staffing and Wages Social, Financial and Psychological support Service satisfaction	Personnel Services and products Service quality

Figures



Figure 1

Summary of Categories for the program facilitation and implementation. Figure 1 above presents a summary of categories that emerged from data indicating the processes governing the implementation of the MM

program in the DoD. The foundational factors which included guiding principles /models, PEPFER and State funding in partnership with the Nigeria DoD suggested that the Nigerian DoD MMs program is modelled by mainstream guidelines/model as described by the participants. The DoD management provided effective leadership through support from the Nigerian military itself, and the various site commanders which built a strong 'team player spirit' towards the implementation of the MM program at the various sites. Skills acquisition which was necessary for care givers to deliver quality care was achieved through training and retraining . Basic educational qualification and personal experience with HIV formed the bedrock of training for the most critical stakeholders who were the MMs . Service characteristics which included staff welfare, salaries and wages, social and psychological support were all aimed at ensuring quality health care services delivered to the consumers. A summary is presented in table 1 below.