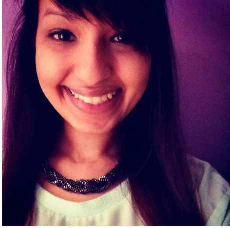
Evaluation of the new Option B+ PMTCT programme for HIV infected women at hospital facilities: case study at the Rahima Moosa Mother and Child Hospital, Johannesburg, South Africa



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Background: South Africa's National Department of Health has adopted World Health Organizations (WHO) 2013 consolidated guidelines on the use of ARVs for treatment and prevention of HIV infection.[1] The guidelines include changes for prevention of mother to child transmission (PMTCT) through the implementation of Option B+.

Option B+ aims to reduce the HIV prevalence rate amongst pregnant mothers by placing all pregnant women on ART for the rest of their lives, no matter their CD4 count.[2] Option B+ is an approach where triple ARV drugs in the form of a fixed dose combination (FDC) pill starts the same day the patient is diagnosed as HIV-positive and treatment is continued for life. FDC was introduced, made up of the regular three drugs, tenovoir (TDF), lamivudine (FTC/3TC), and efavirenz (EFV) used in the first-line regimen.[2]

Prior to this, WHO member countries had the option to choose between two prophylaxis regimens for pregnant women with HIV and a CD4 greater than 350 cells/mm^3.[3] Under Option A, pregnant women received either intrapartum antiretroviral (ARV) prophylaxis or lifelong ART based on their CD4 count of 350 during pregnancy.[3] Option B, on the other hand, has a simpler clinical flow in which *all* pregnant women with HIV are offered ART beginning in the antenatal period and continuing throughout the duration of breastfeeding.[3] At the end of breastfeeding those women who do not yet require ART for their own health would discontinue the prophylaxis and continue to monitor their CD4 count, eventually re-starting ART when the CD4 falls below 350 cells/mm^3.

In January 2015, the WHO consolidated guidelines were implemented for the Option B+ PMTCT programme at Rahima Moosa Mother and Child Hospital (RMMCH). However, little is known about the impact of these new guidelines on the PMTCT programme, its effect on the work of healthcare professionals in state hospitals and the women targeted by the programme. In particular, no research has focused on adherence implications of Option B+.

Purpose: The purpose of this research is to explore the impact of the Option B+ PMTCT programme on the work of healthcare professionals, and to understand pregnant HIV-positive women views and experiences on ART for life, as a way to improve management of the Option B+ PMTCT programme.

Upon completion, this study will provide needed evidence on whether the programme is adaptable in other settings which could improve access for pregnant women in areas with limited resources. The research study explored the following questions: 1) *How has Option B+ PMTCT affected the work of healthcare professionals?* 2) *What are pregnant HIV-positive women's views and experiences about lifetime treatment with ARVs?*

In addition, information about women's attitudes towards the programme will be beneficial for healthcare professionals to better understand what factors may act as barriers to adherence and contribute to how they feel about being asked to follow the regimen.

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Methodology: A qualitative study design was used for a pilot health facility in Johannesburg, South Africa. RMMCH is a state hospital that has already adopted the national guidelines for Option B+ and is in the implementation stage, providing a platform to analyze the PMTCT programme.

The RMMCH is located in the suburb of Coronationville, an area that the government previously delegated to coloured folk after the apartheid. A few squatter camps rest behind the hospital. RMMCH is formerly known as Coronation Hospital, has 110 general paediatric beds, 30 neonatal beds and a 6 bed intensive care unit. The healthcare workers see more than 36,000 outpatients annually and approximately 15 clinics refer to the antenatal clinic at the hospital creating a busy healthcare environment. RMMCH has more than 10,000 births a year.

This qualitative study conducted 67 semi-structured, audio-recorded interviews with pregnant HIV-positive women (n=55) and healthcare professionals (n=12).

A phenomenological approach was used to investigate lived experiences of HIV-positive pregnant women and healthcare professionals under the Option B+ PMTCT programme. Patients and healthcare professionals' perceptions of HIV were investigated to learn more about their perspectives and stories prior to the implementation of Option B+. For example, patients were asked "*How did you feel when you first found out you were HIV-positive?*" This study explored this specific phenomenon between healthcare workers (nurses, physicians and healthcare management) and patients, providing in depth understanding of how the Option B+ programme is now impacting the work of healthcare professionals and the adherence of patients.

Furthermore, all participants were recruited through convenience sampling in the hospital and filled out a questionnaire providing demographic data. This opportunity aimed to fill the knowledge gap in order to better understand if the programme is working effectively and what women's attitudes are towards going on ARVs for the rest of their lives.

Findings: The analysis of the study revealed that the implementation of the Option B+ PMTCT programme according to the national consolidated guidelines has been challenging for both patients and healthcare professionals. The following four sections discuss the principal findings of how the PMTCT programme for Option B+ HIV PMTCT have impacted the healthcare environment for (a) patients; (b) frontline nurses; (c) healthcare physicians; and (d) managers.

Patients: Pregnant HIV-Positive Women

Patient acceptability of medication adherence and the changes in their ART regimen was influenced by the information they receive. The quality of care made available to patients affected their overall experience and contributed to decision-making for a patient. In addition, patients' willingness to incur opportunity costs and return to RMMCH was largely dependent on their experience. Patients required education and continuous support to understand the benefits of Option B+ PMTCT and ART for life. All 55 patient participants responded that they chose to take the FDC to protect the health of the baby and felt that treatment could be stopped after giving birth. They were unaware of the benefits of continuing treatment.

Frontline Nurses

Frontline nurses were not willing to acknowledge the significant changes in workload that come with the PMTCT programme, and this affected the patient experience. The initiation and maintenance of the programme have increased responsibilities for healthcare professionals. These responsibilities include making services available for the patients which include: delivery of educational sessions, communication and consistent messaging for patients, monitoring ART adherence, and the provision of thorough counseling.

Physicians

The work environment has become less effective with managing the large number of patients. The physician's role has changed from providing support for the patient to spending less time managing patient adherence and conveying the importance of benefits of ART for life. Option B+ has decreased the amount of time physicians spend with patients by diagnosing and initiating them on treatment the same day. Physicians are unaware of the opportunity costs pregnant HIV-positive women undergo to attend RMMCH. However, increased patient access to ART does not resolve issues with ART initiation, viral load monitoring, thorough counseling and support groups, communication for transfers between departments, privacy, and overall quality of care for patients.

Managers

The state hospital organization has initiated administrative practices to help manage PMTCT. However, Option B+ PMTCT has challenges in education and awareness of ART and its integration into the already existent stigma and cultural beliefs in the surrounding South African community of RMMCH. Management has utilized strategies that include education and training across departments that need to assist healthcare professionals in better understanding the implementation of the programme at RMMCH. There is still a need to strengthen indicators of the PMTCT programme in order to evaluate its success.

Patients are lost to follow-up (LTFU) because they cannot afford to incur opportunity costs and return to RMMCH. There is a lack of consistent indicators used across departments for the programme in order to decrease LTFU, increased numbers of pregnant women are put onto ART the same day as being diagnosed as HIV-positive.

There is inconsistency in delivery of counseling and support services for patients at RMMCH. There is a lack of communication across clinical departments because guidelines are taking time to be translated across the healthcare system in a manner that allows for consistency in messaging.

There is a lack of compassion and understanding by service providers due to the emotional risks that healthcare workers are undergoing associated with changes to their work. The implementation of the new guidelines for the Option B+ PMTCT programme has created frustration for both clinical and management levels at RMMCH.

The study revealed that there is insufficient time and counseling services provided for pregnant women to absorb the shock of finding out her HIV diagnosis and starting lifelong treatment immediately. Option B+ aims to reduce the number of missed dosages for women through the one pill a day regimen. However, there is a lack of knowledge translation between healthcare professionals and patients in understanding the benefits of the FDC. This poses a barrier to effective uptake in treatment and increased loss to follow up. Pregnant women feel the need to adhere only until giving birth, not understanding that ART is beneficial in the long term. Many of these women feel the need for more education to understand why they are taking this drug beyond childbirth.

Recommendations and Conclusions: There are major challenges in keeping current with the national guidelines. These changes affect the policies and procedures at RMMCH both at the clinical and management levels.

Pregnant HIV-positive women's views and experiences of the Option B+ PMTCT programme are very informative in understanding the patients' perception about going on ART for life.

In order for the Option B+ PMTCT programme to function and be successful in other settings for HIV-positive pregnant women, certain components need to be addressed. By providing these pregnant women with better counseling and support services

for this programme, women may better understand ART for life.

The Option B+ PMTCT programme implemented at RMMCH needs to improve their internal communication and collaboration amongst healthcare professionals to develop consistency for the use of indicators for the programme and understand their roles in delivering consistent messages and services to mothers. Communication is essential in helping patients build trust in service delivery, decreasing the LTFU and can alter the patient perception on long term adherence. Most importantly, an HIV-positive pregnant woman needs to understand the long term benefits of FDC for both the woman and the baby.

The staff at RMMCH needs to pay attention to internal communication between units in order to increase consistency for use of indicators of the programme. This will help build trust in services utilized by these pregnant women and alter their perceptions on medication adherence and looking at the more holistic picture.

It is crucial to understand the barriers to the short and long term sustainability of the Option B+ programme. Understanding the environment in which a PMTCT programme operates can address policy implementation and programme issues and hence inform how adaptable Option B+ PMTCT programming is on a larger scale. The national guidelines have been developed but *adaptability* may remain problematic to successful roll out of the Option B+ programme outside of RMMCH.[4]

Implications for this research include the need to address changes within the healthcare system at both clinical and management levels. It is crucial to incorporate the perspective of patients in policy implementation; uptake and adherence are key indicators in informing if the Option B+ PMTCT programme is adopted into state hospitals effectively. In addition, extensive research needs to be done on how to strengthen indicators for long-term sustainability of the programme in conducting a longitudinal study comparing system planning between healthcare facilities and state hospitals. Future evaluations need to address if interdisciplinary collaboration within hospitals can improve the management and understanding of Option B+.

This research will contribute to the HIV/AIDS prevention programme literature in the health policy field. In our increasingly globalized world, it is important to determine how processes and policies in one country can be successfully adapted to another country.[4]

Global Health Relevancy

Currently, much of the Option B+ literature focuses on the first policy implementation in Malawi, where national ART and PMTCT programmes were functional and the public health approach did not depend too heavily on CD4 testing to determine who should initiate treatment. However, little thought has been given to women's attitudes towards the policy to better understand how they feel about being asked to take the drugs for the duration and frequency (and any cost) expected as a way of informing implementation of the policy.