



## Professional Nurses' Perceptions of Gender Inclusiveness of HIV Prevention of Mother to Child Transmission Programme in Kwazulu-Natal

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### Abstract

A qualitative, descriptive, explorative study was conducted via in depth individual participants' interview until data saturation. The purpose of the study was to explore and describe the range of barriers and motivational factors for gender inclusiveness within the PMTCT programme in public hospitals in KwaZulu Natal as perceived by professional nurses.

The study revealed that main barriers of gender-inclusiveness range from restrictive policies, resource and interpersonal factors, impact of HIV stigma and issues relating to treatment adherences. The study recommends intense male recruitment into PMTCT to ensure effective management of HIV in pregnancy and to prevent MTCT. This will ensure a holistic support needed by pregnant women on PMTCT.

**Keywords:** Acquired Immune Deficiency Syndrome; Gender inclusiveness; Human Immune Virus; Prevention of Mother to Child Transmission

### Introduction

The prevention of mother-to-child transmission (PMTCT) programme dates back to the year 2000 (when it was first recommended by WHO in the year 2000 and no country had used anti-retroviral agents in pregnancy before) and was declared in 2001 in the United General Assembly special session on HIV/AIDS. The members committed themselves to reduce HIV infections by 50% by the year 2010 [1], five years later post international PMTCT inception, the programme was grossly criticised by most researchers [2,3]. To have neglected the controversy and confusion concerning optimal infant breast feeding and most health personnel were in a dilemma with little knowledge of how to assist mothers in making informed decisions on a feeding method, where reports showed that the HIV/AIDS epidemic among pregnant women has reduced support for breast feeding interventions in African States and has resulted in a reduction in breast feeding rates amongst women not known to be HIV positive at PMTCT sites.

A study conducted by [4] concluded that the [5] promotion of exclusive breast feeding for six months is an informed and scientific decision that ought to be adopted by the global health communities to maximise child survival and not only the avoidance of HIV transmission. The [6], defines breastfeeding as healthy, which creates a strong child's immunity against disease and prescribes that health care workers must assess an individual mother and recommend breast feeding on the following basis; being acceptable, feasible, affordable, sustainable and safe [4-6].

Thus [2] concluded that there were significant shortcomings in even the most basic knowledge of HIV transmission through breastfeeding amongst health workers and community members in spite of training and counselling of HIV positive mothers concerning infant feeding. It was felt that the options were too brief, and only focused on one type of infant feeding option and rarely extended to supporting practices after childbirth. The South African PMTCT programme was also criticised by [7], having failed to prevent drug resistance of nevirapine, hence a new document on PMTCT was published and the programme was revised in RSA with a new regimen introduced correcting identified errors [8].

In response to the breast feeding controversy, [9] published a comprehensive plan of HIV elimination in the global community, the infections among children and keeping their mothers alive. The planned focus is on reaching pregnant women living with HIV, and their children, from

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**Table 1:** Preparation phase.

Participant number	Age	Gender	Years of experience
1	27	M	3
2	38	F	9
3	42	F	20
4	50	F	22
5	25	F	4
6	60	F	32
7	35	F	15
8	36	F	14
9	36	F	11
10	36	F	13
11	42	F	18
12	40	F	15
13	22	F	1
14	38	F	16
15	39	F	15

the time of their pregnancy until the mother stops breastfeeding. Prior to pregnancy, and after breastfeeding ends, HIV prevention and treatment needs of mothers and children will be met within the existing continuum of comprehensive programmes to provide HIV prevention, treatment, care and support for all who need it.

## Background

PMTCT is a global effort to reduce HIV among children, and WHO facilitate the elimination of mother-to-child transmission of HIV, by advocating for all international HIV positive pregnant mothers who meet set pre-requisites to be commenced on antiretroviral agents. Early PMTCT studies were done in well-developed European countries like the United States of America (USA), women in these countries have good prenatal and delivery care ranging from laboratory testing, and breast feeding options. Whereas the situation in most developing countries like Zimbabwe, RSA and other African countries differs dramatically [10]. African states were struggling to have all PMTCT related services up and fully functional, services like laboratory testing, community awareness campaigns, proper funding of PMTCT institutions, elective caesarean sections. Worse still to inconvenience pregnant women to utilise limited available antenatal, perinatal and post-partum services. The PMTCT suffered a lot of teething challenges like all other programmes and it is very disappointing to learn that even after 10 years of global PMTCT that children still get infected by HIV/AIDS and mortality rates remain high [10].

The world community needed PMTCT programmes to ensure children's survival, even Zimbabwe in 2004, was evidently mobilised towards a meaningful PMTCT implementation [11]. The PMTCT inception in 2000 ensured the WHO's strength of improving quality of life for HIV positive pregnant mothers and continues to strive for a HIV free generation with no vertical transmission which is in line with the millennium developmental goal adopted by international countries including RSA, that of saving mothers and children [1]. Researchers are still struggling to detect the most suitable monitoring tool for the PMTCT programme, several meeting in line to improve treatment regimen to avoid adverse reactions during and after pregnancy, and global countries have been called by the WHO to

make visible efforts to eliminate vertical transmission [12] is working tirelessly in collaboration with UNICEF, UNFPA and UNAIDS to ensure technical consultation and proper implementation of PMTCT as high fatalism was estimated before a child could reach a second birthday with HIV infection.

Nevarapine had been effective and widely used in PMTCT as early as 1999 by the global community and it was indeed cost effective even within developing countries like RSA. In the early implementation process of PMTCT around 2002, RSA used district hospitals as sites for the pilot study. The focus was on ANC, as mothers did not feel the need for a hospital based delivery but were willing to attend ANC [13,14].

The Western Cape Province in RSA, as early as 2002 had an effective PMTCT programme and set good precedence for the country and continent. By the year 2002, Western Cape pregnant mothers (60%) were attending public sector maternity services and PMTCT had already commenced. It was believed that by June 2002, they would have reached 90% and hoped for universal coverage by March 2003 (Western Cape Health, 2002) while implementation of PMTCT in the Eastern Cape was a major struggle due to poor infrastructure and poor clinic attendance, poor sanitation exposed children on milk formula to greater risks of infections [15].

Most developing and developed countries were concerned with the increasing numbers of HIV positive clients. Uganda started to intensify its PMTCT programmes, pregnant ladies were offered HIV/AIDS testing, counselling and if positive offered a single dose of nevarapine at the onset of labour but only a minority received ARV (HAART). PMTCT modified all care rendered to HIV positive women, even staff attitudes had to be transformed to cater for both mothers and babies as per Millennium Developmental Goals, modified intrapartum obstetric care, vaginal cleansing, delaying rupture of membranes in labour, limiting number of episiotomies and delivery by caesarean section in exceptional circumstances only [16]. PMTCT is a comprehensive programme with independent functions, even neonates born from an infected mother were to be given nevarapine or zidovudine for a week after delivery, and a rapid HIV test done at 3 and 6 months, or 18 months if still breast feeding [13].

A fully functional PMTCT programme requires collaborated efforts from government, non-governmental organisations, parastatals, politicians, and even religious organisations [1,17] believes that PMTCT is an integrated approach that requires collaborated efforts from all stake holders for effective and efficient service delivery. [18] shares the sentiment that PMTCT and ARV must be scaled up, and share a unique similarity of programmatic, logistical, resources mobilisation and community needs. The integration approach of PMTCT has different levels of implementation and must be well co-ordinated for positive outcome of PMTCT programmes, levels range from policy development, planning, management and co-ordination, service delivery, community mobilisation and patient follow up for effective adherence [1]. All stakeholders in PMTCT programmes are important and have interdependent roles that are, supply management, monitoring and evaluation components, budgets, and partners' roles and responsibilities; all efforts are geared towards a HIV free generation, and improvement of quality of life for HIV pregnant women and their children [19] are of the view that the complexity of PMTCT programmes require that PMTCT activities be carried out by several workers at different times and in different

settings. Horwood et al (2010) cited Gold et al 2007 who believed that to achieve comprehensive implementation, it is critically necessary that HIV infected women and their babies are identified at every contact with the health service and that all steps in the PMTCT process are fully implemented. The overall effectiveness of PMTCT depends on HIV positive pregnant women with low CD4 count, being identified, with the initiation of highly active antiretroviral treatment (HAART) before delivery, in this high risk group. Accurate record keeping and continuity of care is required, and any break in the chain of activities will lead to a reduction in the expected benefits of the programme for both mother and infant.

PMTCT in Zimbabwe was implemented at a decimally slow rate, pregnant women continued to suffer and little was done by the government to assist. In 2001, only 4% of women and children in need of PMTCT services were receiving them [16]. In a study conducted in Zimbabwe in 2001, 326 of 437 tested HIV positive and only 104 women received nevirapine prophylaxis which exposed 222 innocent infants to HIV/AIDS in Zimbabwe (Perez et al, 2001). A study conducted in RSA on PMTCT implementation revealed that PMTCT coverage in South Africa is feasible, however very high rates of loss to follow up have been observed especially for HIV exposed children [20,21]. A PMTCT study conducted in KZN in 2005 indicated that PMTCT programme had little impact on transmission rates [22], as mothers were fearful to test, fearing victimisation by relatives if found to be HIV positive, and mothers were not even keen to care for infants that were HIV exposed [19] believe that improving integration of PMTCT services into routine care is critical to improve access to these services. The PMTCT coverage in KZN is evident during pregnancy and delivery. 97.3% females were tested in their pregnancy and CD4 counts were done and recorded, clinics had dedicated PMTCT nurses in a study conducted in KZN in 2010 evaluating coverage of PMTCT programme in Amajuba and UThukela districts. The study did not focus on each talk and treatment given to clients to prevent MTCT and strategies of follow up care are not clear.

Proper implementation of PMTCT is extremely important, can save lives and innocent infants and channel infected mothers appropriately to HAART thus improving the quality of life in the presence of HIV/AIDS. According to a surveillance study conducted by [22], PMTCT programme fails to quantify numbers of infected infants due to poor postnatal follow up.

The [1], assessed and felt the global need to save children from vertical transmission acknowledged HIV as a global burden to both children and women and acted accordingly. PMTCT programme was invented and the [1] revealed shocking HIV statistics, stating that 39.5 million people were living with HIV/AIDS, including an estimated 17.7 million women. That women had the fastest rate increase of HIV with a lead in the Sub-Saharan Africa (by 2005, 540,000 children were reported as new infections, 90% of those children were from Sub-Saharan Africa) [23] rated RSA as one of the 12 countries with escalating figures of new HIV infections; other countries with high rates included, Zimbabwe, Uganda, Tanzania, Nigeria, Congo, Kenya, Mozambique, India, and Ethiopia. The HIV prevalence amongst mothers and children in the year 2000 compelled implementation of new strategies such as PMTCT, the new infections at that time amounted to 60% amongst women, infants and young children (under the age of 15) at a rate of 1400 per day.

Children are at risk of contracting HIV from their mothers during pregnancy, birth and through breastfeeding [1]. RSA is in most need

for vibrant and well monitored PMTCT programme as statistics show that it has 29% of HIV positive women and 37% of such HIV positive women are in KwaZulu Natal [23,1] reported more than 10% of global new HIV infections were related to vertical transmission and formulated 90% in infants and young children. The PMTCT regimens have been revised regularly ever since the inception to ensure efficacy and more studies are conducted to ensure a HIV free generation through the PMTCT programme [1,5].

The PMTCT programme has been developing since its inception in the year 2002 in RSA [23]. Research has influenced South African PMTCT into various directions in hopes of improving maternal and child welfare [5]. According to Sherman et al (2004), RSA implemented PMTCT in July 2002 when a Constitutional Court judgement ordered the DOH to make NVP universally available to HIV infected pregnant mothers. The NVP efficacy was therefore left open for health researchers to study and evaluate, hence a series of studies followed and more agents were added in 2010 such as AZT and Truvada to prevent drug resistance [8]. Honourable President Jacob Zuma in 2009 on a world AIDS day announced improved HIV/AIDS management adjustments and new interventions to improve access to ARV for priority groups in order to decrease the HIV/AIDS burden and to address maternal and child mortality, and to improve life expectancy [8]. The South African HIV/AIDS protocols and procedures to ART were adjusted accordingly; hence [17] reported increased figures of people on antiretroviral treatment (ART) even in low and middle income countries, figures had reached 7.4 million by 2010, a more than 16 fold increase in seven years which represents 47% coverage of those in need of ART while 63% is without help still and shall continue to infect others and die of AIDS.

## Methods

### Study design

An explorative, descriptive, qualitative design was used [24] identifies qualitative research as being focused on an in-depth exploration of a phenomenon and can be presented in a narrative form whose aim is to offer meaningful insights. In keeping with the principal tenets of qualitative research, as described by [24], In depth individual interviews were used to capture the depth and breadth of gender inclusiveness within an identified PMTCT programme.

### Study setting

The study was undertaken in KwaZulu Natal Department of Health which has six Health districts. Within this, HIV positive pregnant women are referred to the larger hospitals for comprehensive HIV management in pregnancy. Three of these larger hospitals were selected in KZN province for the purpose of the study. Selected hospitals were as follows: one from Ethekewini Health District (about 192 patients attend the clinic daily) which is situated South of the province, one from the central region of the province (about 164 patients attend the clinic daily) which falls under Mgungundlovu Health District and one from from Zululand Health District which is the North of KZN (210 patients attending daily). The selected hospitals were selected to ensure geographical representation of the province. An additional criterion for inclusion was the large numbers of pregnant HIV patients managed by each of the Mother to Child Transmission (MTCT) services.

### Sample

The study population consisted of professional nurses on PMTCT programme in three selected public hospitals in KwaZulu-Natal.

Professional nurses were the primary target population for the study since they were actively involved in PMTCT roll out.

The sample size was initially determined as 13 purposively selected participants based on the point at which data saturation was initially reached. To confirm the data saturation status, a further two participants were engaged and in the end, a total of 15 participants took part in the interviews.

### Ethical consideration

In ensuring full ethical adherence, the researcher approached the Department of Health in KwaZulu Natal for initial discussion of the research project and to request permission to submit an application to utilize the chosen study sites ahead of obtaining academic ethical clearance from the higher Degrees committee in the Department of Health studies at UNISA. In accordance with this articulated plan, a full proposal of the study was submitted and approved by the Departments Higher Degrees Committee. A formal letter was submitted to the Department of Health requesting site permission for each of the study sites. Formal permission to access sites was therefore granted. Explicit consent was sought from prospective participants two weeks before the initiation of the study and was later reconfirmed at the beginning of each of the interviews. The data collected was coded to ensure that there was no link to participants and only the researcher had access to the raw data and reassurances of commitment to confidentiality were made and reiterated throughout the study.

### Measurement/instruments

Measures to ensure trustworthiness are described according to Lincoln & Guba's model (1995). Trustworthiness is a method of establishing or ensuring rigour in qualitative research without sacrificing relevance. Method of trustworthiness involves four criteria namely credibility, transferability, dependability and conformability.

**Credibility (internal validity):** the researcher ensured truthfulness when reporting on professional nurses' perspectives of gender inclusiveness of HIV prevention of mother to child transmission programme in KwaZulu-Natal, South Africa by spending a long time with the participants; each interview lasted up to 60 minutes. Interviews were conducted in comfortable hospital duty room to ensure comfort and relaxation.

**Dependability (reliability):** is concerned with results consistency and reproducibility. Researchers gave an explicit description of how research results shall be obtained. The description provided information as to how reproducible the study might be or how unique the situation is.

**Confirmability (Objectivity):** refers to how neutral the findings are in terms of whether they are reflective of the informants and the enquiry and not a product of the researcher's bias and prejudice. To adhere to the criterion of objectivity, the researcher gave a complete study report to two participants to read through and confirm the truthfulness of the study.

**Transferability:** refers to showing that the findings have applicability in other contexts. It is attained through purposive non-probability sampling, saturation of data and thick description of the research strategy and method of the study which researchers intend. The findings of the study cannot be applied in other provinces due to cultural diversity in South Africa.

## Data Collection/ Procedure

Data was collected through one on one interview until data was saturated at the 15<sup>th</sup> interview with the participants actively involved in PMTCT programme in selected hospitals.

## Data Analysis

Data was analyzed using the content analysis approach outlined by [25]. Through this process, an inductive development of categories formed the basis of analysis. The main aim was to build a post analysis descriptive overview of the range of barriers and motivational factors for gender inclusiveness within the PMTCT programme. Within this, process standards were enacted to build a replicable and valid method for making specific inferences from the text (data collected) to other statements (data interpreted) or properties of its source [26]. Thematic analysis and content analysis [24,25] were used to analyse the data elicited from the exploration of the range of barriers and motivational factors for gender inclusiveness within the PMTCT programme in public hospitals in KwaZulu Natal as perceived by professional nurses on the same programme. Views expressed by participants were collated in general thematic groupings to generate "master-theme groupings" and within each of these, more specific sub-themes were identified. Finally, as a way of clarifying how commonly expressed themes were, the appearance of "descriptive terms" was numerically counted and expressed through content analysis. Content analysis has been widely used in nursing studies as a systematic and objective method in quantifying phenomena [24]. The researcher maintained accuracy in data analysis and interpretation by following all the steps of content analysis and categorising emerging findings.

## Results

### Results and discussion

The study was specifically focussed on eliciting the views of 15 professional nurses involved in PMTCT, whose primary demographic characteristics (age, gender, and years of experience) are diagrammatically represented below in (Table 1). First, three copies were made of the hand written transcripts to facilitate notations within the transcription and the entire text was read. The research data was initially reviewed a number of times to ensure and in-depth understanding of the emerging themes within the text; the first reading was just a general overview of the text while the second review focussed on identifying thematic words. Different colour pens were utilised to highlight the main themes and categories. These were then transcribed to a coding sheet. Content analysis facilitated exploring and describing the range of barriers and motivational factors for gender inclusiveness within the PMTCT programme in public hospitals in KwaZulu as perceived by professional nurses.

## Open Coding and Establishment of Categories

The second review focussed on underlining the thematic words, used to categorise the content into themes and subthemes. Within the text, areas such as "perception of roles", motivating barriers in PMTCT programme as perceived by female patients, were all specifically noted and specified as important emerging themes. Different colour pens were utilised to highlight themes and subthemes which were then transcribed to a coding sheet. Content analysis was applied to facilitate a quantitative representation of emergent themes as they related to implementation processes used in the PMTCT programme; Participants' perceptions of PMTCT gender inclusiveness and their

**Table 2:** Professional Attributions for level of participation of partners in the PMTCT service.

THEME IDENTIFIED	SUB-THEMES EMERGING FROM INTERVIEW FEEDBACK	EXAMPLAR VERBATIM STATEMENT FROM PARTICIPANTS
<b>Policies and Procedures.</b>	<ul style="list-style-type: none"> <li>- Restrictive Policies.</li> <li>- Limited procedures to support inclusive practice.</li> </ul>	<p><i>I have never seen any policy on gender inclusiveness but I know it's allowed. No objection to gender inclusiveness, yet no policy has been read to us regarding males in maternal services.</i></p> <p><i>As far as I know, women wards restricts male presence</i></p>
<b>Resource related factors</b>	<ul style="list-style-type: none"> <li>- Declared focus on male inclusion not supported with expected resource investment.</li> <li>- Lack of resources most important barrier to male inclusion.</li> </ul>	<p><i>Personally, I feel that the government institutions continue to adjust programmes to please the public without ensuring feasibility.</i></p> <p><i>Allowing males in PMTCT means more manpower shall be needed.</i></p> <p><i>A number of skilled advanced midwives have resigned due to heavy workload, I doubt if such adjustments shall be effected as expected.</i></p>
THEME IDENTIFIED	SUB-THEMES EMERGING FROM INTERVIEW FEEDBACK	EXAMPLAR VERBATIM STATEMENT FROM PARTICIPANTS
<b>Impact of Stigma related to HIV/AIDS</b>	<ul style="list-style-type: none"> <li>- Societal prejudices may outweigh professional aspirations.</li> <li>- HIV/AIDS stigma more prevalent in Zulu culture.</li> <li>- Acceptance of PMTCT services seen as acknowledgement of positive HIV/AIDS status.</li> </ul>	<p><i>Most females decide to keep to themselves out of fear of being rejected and victimised by both family members and spouses.</i></p> <p><i>Zulu men are quick to judge a woman for bringing the HIV/AIDS in their homes. In-laws are the worse creatures as reported by patients to me, they get taunted and ridiculed by sister in-laws for being HIV while pregnant so these Zulu women chose to be silent about their status.</i></p>
<b>Interpersonal Factors</b>	<ul style="list-style-type: none"> <li>- HIV/AIDS infection a source of social exclusion.</li> <li>- Issues related to HIV infection never discussed.</li> </ul>	<p><i>Most girls seen by me, are never too sure of the baby's father and I always wonder whom shall they bring, if they have to bring a spouse.</i></p> <p><i>No males in townships trust their girl friends, cheating is a style and fashionable in the townships.</i></p> <p><i>Incest is also common in the African communities and always becomes an issue if a health practitioner request the involvement of the spouse.</i></p>
THEME IDENTIFIED	SUB-THEMES EMERGING FROM INTERVIEW FEEDBACK	EXAMPLAR VERBATIM STATEMENT FROM PARTICIPANTS
<b>Gender based considerations</b>	Females disproportionately blamed for HIV/AIDS status by male partners.	<p><i>Females always complain that partners have rejected them and the pregnancy. Zulu girls are often then not on their own during the course of pregnancies since most males insist on seeing the baby before accepting the pregnancy.</i></p> <p><i>We consult almost 300 patients from peripheral clinics and our space has never been enough for females and where shall all these males be accommodated suddenly?</i></p>
<b>Issues related to treatment adherence</b>	<ul style="list-style-type: none"> <li>- Adherence generally poor across patient population.</li> <li>- Non-participation often attributed to cultural preferences.</li> </ul>	<p><i>Due to poverty, ARV's are sold for illegal/street drugs manufacturing hence leading to poor adherence and allowing HIV to pass easily from the female to the baby.</i></p> <p><i>Traditional beliefs make patients not to fully adhere to our medication education and instruction.</i></p> <p><i>Our catchment area involves a large population and greater areas where street drugs abuse is a daily reality; patients even forget to take their medication under the influence of either alcohol or street drugs.</i></p>

views about the way in which the programme was implemented.

### Themes from the Professional Interviews

Interviews of health professionals who worked within PMTCT service areas were done via one on one. A total of 15 professional nurses participated in individual interviews. The participants were asked two open-ended questions within each of their interviews. The participants were asked the following:

**Question One:** -“From your experience, what do you think prevents partners of expectant mothers from being involved in the mother to child programme?”

**Question Two:** “Please tell me what do you think can be done to motivate and involve partners in the mother to child programme?”

With each of the questions, participants were allowed to take the necessary time to respond and verbatim responses were captured and analysed to determine the most noteworthy responses from participants. For ease of presentation, the themes that emerged from this phase of data collection are presented in a summary table below.

When asked to offer possible suggestions for improving the involvement of male partners, the participants identified issues that they believed were related to societal changes for example, there was acknowledgement that some of the reasons for non-participation were

driven by cultural beliefs that advised against males being involved in issues that were traditionally seen as belonging to women. Notably, there were a number of professionals who specifically indicated that they differentiated between modifiable and non-modifiable factors. The former were the primary focus for some of the responses elicited from participants for example, there was suggestion by five of the participants that the name “maternal services” needed rethinking to portray a more inclusive service. In support of this, one of the participants said,

“We must stop calling our service a maternal clinic...what about paternal and maternal services or even just family services?”

This suggestion was often expressed in the context of views that service policies needed to be reviewed to ensure that all aspects of the service were gender inclusive. In articulating this issue, one of the participants criticised general policies within obstetric and gynaecological service areas as being non-inclusiveness. She noted,

“all our services that we offer in the maternal clinic are designed for women. We even have fewer restrooms for men and it feels to me like we accommodate them as an afterthought”.

In addition to suggesting changes in service structure, there was identification of the fact that staff within PMTCT service areas needed training on being more gender sensitive. The issue of training

was explored further with each of the participants who raised it and each confirmed that they believed that too little attention was given to the likely differences of working with males and as such; they often felt ill prepared to include male partners in PMTCT programmes.

## Discussion

### Limitation of the study

The study was done in three selected hospitals and as such the sample was not wholly representative of their wider province of KZN. Within that consideration, it is noted that the findings cannot be generalised to other areas in KwaZulu-Natal or South Africa. Secondly, although reassurances of confidentiality and anonymity were addressed in the information and consent sheet it is possible that some participants offered responses that they thought would not impact future treatment - to this end, there was a specific acknowledged need for the research to evaluate whether participants' answers reflected noteworthy levels of social desirability bias. Detailed review of the content of the transcripts showed this to be a very limited and small possibility.

### Recommendations

The study offered a range of meaningful insights into participants' perceptions as they related to the inclusion of males within their treatment programmes. To ensure application to wider practice contexts, participants' views and the determinations from the background literature review were summarized into corrective service and practice recommendations as noted below:

**Service structure:** the design of service provision should be gender sensitive and make accommodations for males to be part of the serviced population. This may require additional monetary investment by health providers.

**Primary resource capacitation:** the current resources appear adequate to offer limited support the women who attend MTCT services and if any expansion in groups to be served occurs, then there will be a pre-requisite need for a total review of resources to ensure that the inclusion of males does not further deprive expectant mothers from the scarce resources they currently have to share amongst themselves.

**Cultural inclusivity:** there is a need for service development to take full account of issues that could enhance the involvement of males from cultural groups that may have historically opted out of such initiatives. This could include partnering with key cultural leaders to elicit their support for male inclusive PMTCT services.

**Service accessibility/Flexibility:** General access to services should be widened to cater for those couples who have competing priorities during the usual opening times and where possible, mobile services should be offered to support those with travel difficulties.

**Gender based sensitivity:** Feedback from potential male service users highlighted a general impression that current service structure was not gender sensitive and any future development of services would require that services be reconfigured and adapted to be inclusive of male requirements.

**De-stigmatisation Interventions:** PMTCT services have inherent stigma based challenges by virtue of their association with HIV/AIDS and this requires a concerted effort by service developers to work with local communities in educating them about HIV/AIDS to reduce the stigma associated with this area of health care.

## Conclusion

The results of this study highlight key barriers to the inclusion of males in PMTCT services and utilises these findings to propose specific recommendations to promote male inclusion. The engagement of service-users, their partners and professionals simultaneously offers unique insights into this important area of study. Importantly, the study demonstrates that it is possible for researchers to simultaneously consider the attributions for male exclusion from three data without compromising the academic value of the study and in a way that has practical value to service-users and service providers alike. By virtue of treading on untested ground with respect to the multi-approach data collection stance adopted, the study has much to learn and will benefit from testing and critique from future researchers.

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