

ORIGINAL RESEARCH ARTICLE

To disclose or not? Enabling pregnant women to disclose their HIV status to their male partners

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Abstract

Disclosure of HIV status by pregnant women to their male partners is vital to prevent re-infections. The aim of this study was to apply the Health Belief Model (HBM) to enable pregnant women to disclose their HIV positive status to their male partners. The setting included three antiretroviral (ARV) clinics at three hospitals in Limpopo Province, South Africa. A quantitative design was used with non-probability, convenience sampling of 170 respondents aged 18-40 years. A questionnaire was used to collect data that was analysed with the SPSS version 24.0. Results indicated that 20% of respondents had not disclosed their HIV status to their male partners. Barriers included fear of rejection (47.5%), fear of violence from partner (17.5%), blame for HIV exposure by partner (10%) and stigmatisation (25%). The conclusion was that health care workers should address these barriers through disclosure education with pregnant women who are HIV positive to facilitate HIV status disclosure to their male partners. (*Afr J Reprod Health* 2021; 25[3]: 30-40).

Keywords: Health Belief Model, barriers, HIV status disclosure, HIV and pregnancy, quantitative study

Résumé

La divulgation de la séropositivité par les femmes enceintes à leurs partenaires masculins est vitale pour prévenir les réinfections. Le but de cette étude était d'appliquer le Health Belief Model (HBM) pour permettre aux femmes enceintes de révéler leur statut séropositif à leurs partenaires masculins. Le cadre comprenait trois cliniques d'antirétroviraux (ARV) dans trois hôpitaux de la province du Limpopo, en Afrique du Sud. Un plan quantitatif a été utilisé avec un échantillonnage de commodité non probabiliste de 170 répondants âgés de 18 à 40 ans. Un questionnaire a été utilisé pour collecter les données qui ont été analysées avec la version 24.0 du SPSS. Les résultats ont indiqué que 20 % des répondants n'avaient pas divulgué leur statut VIH à leurs partenaires masculins. Les obstacles comprenaient la peur du rejet (47,5 %), la peur de la violence du partenaire (17,5 %), le blâme pour l'exposition au VIH par le partenaire (10 %) et la stigmatisation (25 %). La conclusion était que les agents de santé devraient surmonter ces obstacles en éduquant les femmes enceintes séropositives sur la divulgation pour faciliter la divulgation de leur statut sérologique à leurs partenaires masculins. (*Afr J Reprod Health* 2021; 25[3]: 30-40).

Mots-clés: Health Belief Model, obstacles, divulgation du statut VIH, VIH et grossesse, étude quantitative

Introduction

Pregnant women's disclosure of their HIV status to their male partners is essential for the prevention of the spread of HIV, Mother-to-Child Transmission (MTCT), the lowering of viral load, and adherence to treatment¹. During pregnancy, women are at considerably higher risk of HIV acquisition (male-to-female) and transmission (female-to-male). Disclosure may particularly be crucial for pregnant women to lower mortality and morbidity rates. The United Nations Programme on HIV/AIDS² reports that South Africa is severely affected, with an

estimated seven million people living with HIV in 2016. There were 380 000 new infections in 2015 and, in the same year, 180 000 people died from acquired immune deficiency syndrome (AIDS) related illnesses. An estimated 19.07% of the South African population aged between 15-49 years is HIV positive³. The role of disclosure is highlighted in the prevention and management of HIV and AIDS⁴. It is crucial that participants disclose their HIV status to their male partners to enhance ART initiation in both partners, and to promote safe sex practices to lower both transmission and viral load⁵. A low viral load is associated with reduced risk of

transmitting the virus to an HIV-negative partner (or an infant in the case of pregnant women), while a high viral load is associated with lower immunity and higher mortality⁶. Pregnant women are offered HIV testing during antenatal clinic visits. Although pregnant women are given this opportunity to know their status, it seems to be difficult for some pregnant women to choose to disclose their status to their male partners. Choosing to disclose their HIV-positive status to their male partners can assist pregnant women to adhere to treatment protocols and provide them with support. Despite literature indicating the benefits of disclosure, a study done in rural South Africa⁷ indicated that only 49% of pregnant women disclosed their HIV status to their male partners.

The researcher used the Health Belief Model (HBM)⁸ as a theoretical framework to draft the instrument and analyse the findings. The following key assumptions of the HBM were incorporated: perceived susceptibility; perceived severity; perceived benefits; perceived costs; perceived barriers. Perceived susceptibility refers to the perception that the diagnosis is relevant and accurate⁸. The pregnant women will not disclose their HIV status unless they perceive the risk of not disclosing. Perceived severity indicates that action will only be taken if the health problem is viewed as serious⁸. The pregnant women who were HIV positive were aware of the seriousness of their diagnosis as they were on antiretroviral therapy (ART) and visited the antiretroviral (ARV) clinic for treatment. The perceived benefits referred to the patient's beliefs that the treatment will cure or prevent the illness⁸. The respondents needed to believe in the benefits of disclosure to enhance adherence to their ART, lower their viral load and the re-infection rate. Perceived costs referred to financial implications⁸. Financial means of respondents can include their employment status and financial dependency on their male partners. The perceived barriers include the complexity, duration and accessibility of treatment⁸. The treatment referred to the ART that the respondents were on that requires lifelong adherence. Barriers to disclosure might include fear of rejection, abuse and stigmatisation and might hinder their adherence as they feel they need to hide taking their treatment. This model postulates that health-seeking

behaviour, in this context, the need to disclose HIV status to their male partners, is influenced by the presence of perceived barrier(s) posed by a health problem and the value associated with disclosure of HIV status to their male partners. The HBM was developed to change harmful, health-related behaviours⁵.

This article aims to apply the Health Belief Model⁸ to enable pregnant women to disclose their HIV positive status to their male partners.

Methods

Study design

A quantitative, explorative, descriptive cross-sectional design was chosen due to the sensitivity of the topic. The authors hypothesized that respondents may find it difficult to disclose their status to their male partners and therefore also to the researcher. The HBM was incorporated in the design and instrument to assess perceived benefits and barriers of disclosure of pregnant women's HIV status to their male partners.

Setting

The study was conducted in three ARV clinics based at three hospitals in the Capricorn District, Limpopo Province. Two of these hospitals were in rural areas, while 1 hospital was in an urban area. The population of Limpopo Province was estimated at 4,592,187 in 2019. The population group reflects 96.7% black; 2.6% white; 0.3% Asian and 0.3% Coloured. Approximately 51.2% of the population is female⁹. Census 2011 indicated that 46.1% of males and 53.9% of females were employed. Sepedi is the language spoken by most persons in Limpopo. The prevalence of HIV is 8.99%

Study population and sampling strategy

The study population comprised HIV-positive pregnant women who were attending ARV clinics at three hospitals in the specified district. The inclusion criteria focused on HIV-positive pregnant women who were in the age range of 18-40 years, attended the ARV clinics, were on ART, had undergone counselling and testing at least 1 month prior to the study and were invited to participate in the study.

The exclusion criteria was those HIV-positive pregnant women who refused to participate in this study; inability to communicate in English and pregnant women with complications during their pregnancy.

Non-probability, purposive and convenience sampling methods were used to select the three ARV clinics and respondents respectively. The sample size was calculated using the Raosoft sample size calculator. The calculator indicated that if the total population is 356, the sample size should be 52% of the total population. Therefore, 52% of 356 equals 185.12, rounded to 186 respondents.

Data collection

A pre-tested questionnaire was, with the permission of the original researchers/developers⁹ adapted to include aspects relevant to the HBM and the context where data was collected. The sections of the questionnaire were structured as follows: Section A: Socio-demographic characteristics; Section B: Sexual and reproductive health information; Section C: The motivating and enabling or modifying factors and Section D: The challenges/barriers of HIV status disclosure (view Table 1). Sexual and reproductive health information was assessed with 16 items that included one-answer items, yes/no and Likert scale items. For example 'Have you ever disclosed your HIV positive status to your partner?'. The motivating and enabling or modified factors were assessed with 9 items. Perceived benefits and modifying variables from the HBM included the availability of ARVs, the use of condoms and safer sex practices and the attitude towards disclosure to the male partner were included in this section. The challenges and barriers were assessed with 10 items, including a Likert scale. The perceived barriers from the HBM were included and referred to fear and discomfort linked to disclosure. The Likert scale assessed the HBM barriers that included fear of rejection, abuse and stigmatisation. The questionnaire were pre-tested with 5 respondents who met the inclusion criteria. The respondents were conveniently selected to participate in the pre-test and were not included in the main study. Minor technical aspects of the study were modified based on feedback from the pre-test. The average time required for questionnaire self-administration was ascertain to be 10 minutes and the researcher was

available to respond to questions during the data collection period.

Data collection took place from 1 February 2017 to 3 March 2017. The ARV clinics were visited on weekdays and each eligible respondent was provided with information leaflets containing information about the study. Those that were willing to participate provided informed consent by completing the questionnaire in a private room at the ARV clinic, while waiting for their treatment. A consent form was signed by respondents to indicate that they had voluntarily agreed to participate and that there was no coercion. Those respondents who were literate completed the questionnaires on their own. There were 4.70% ($f=8$) illiterate respondents who were assisted by the researcher to complete the questionnaire. The information was read back to them to ensure it captured the meaning they intended. The completed questionnaires were deposited in a sealed box and were collected by the researcher on the same day. The questionnaire took 20-25 minutes to complete. The questions on the questionnaire were written in English.

Data analysis

The questionnaires were scrutinized for errors and completeness, entered and analysed using statistical software, SPSS version 24.0. Descriptive and inferential statistics were generated to address study objectives. The Pearson's chi-square test was used to test relationships between variables. Statistical significance was attained at $p\text{-value} < 0.05$. The pre-test was used to evaluate the validity and reliability of the instrument. Reliability was enhanced as the researcher adapted a pre-existing questionnaire from previous studies where it had been implemented and tested⁹.

Confidentiality and anonymity

Confidentiality and anonymity were achieved in different ways. Potential respondents were approached individually, the purpose of the study explained and information leaflets were given to them. Those who were eligible and consented to participate in the study completed the consent form and questionnaire in a quiet, private room at the ARV clinics. Data was not linked to specific respondents as no identifying data was written on the questionnaire.

Results and Discussion

The interpretation of the research results is presented and discussed in the following sections: socio-demographic characteristics of respondents, perceived susceptibility, perceived severity, perceived benefits of disclosure, perceived costs and perceived barriers of disclosure. Out of the 186 respondents, 171 completed the questionnaire and 1 questionnaire was discarded as it was incomplete (N=170). The response rate was 91.39%.

Socio-demographic characteristics of respondents

The socio-demographic characteristics included age, relationship status, employment status and level of education.

Age

Seventy-seven point six five percent (77.65%; $f=132$) of the respondents were aged between 21 and 35 years old, while 18.24% ($f=31$) were aged between 36 and 40 years. Only 4.12% ($f=7$) of the respondents were aged between 18 and 20 years. Table 2 shows that most respondents delivered their babies aged between 21 and 35 years. The results indicated that 81.76% ($f=139$) of the respondents were between 18 and 35 years old (Refer to Table 2). This age group represents the 'child-bearing age for women who are sexually active. According to Statistics South Africa⁹, the reproductive age range is 15 to 49 years. The age group 18-40 years in this study falls within the South African reproductive age range. A study done in Kenya found that 73.8% of the woman were between the ages of 18 and 25 years and no correlation with age and disclosure were highlighted¹⁴. As indicated in Table 5, 41.18% of respondents who were aged between 18-30 years, and 38.82% who were between 31-40 years, were able to disclose their HIV status to their male partners. Age was not significantly associated with disclosure in the present study. Contradictory to the findings from a study in Uganda that indicated that a younger age was a barrier to disclosure to their male partners¹⁰.

Relationship status

Table 2 reported that 55.29% ($f=94$) of respondents were single, which concurs with the study¹¹ which

also listed that 66.98% ($f=71$) of their South African respondents were unmarried. Only 0.59% ($f=1$) of respondents were separated from their husbands, while 1.18% ($f=2$) of the respondents were widows, and 22.94% ($f=39$) of respondents were cohabiting. This correlates with the data on the profile of Limpopo that indicates that 50.2% of females never married and 30.7% married and 0.5% were separated⁹. In contrast, 78% of the respondents in the study conducted in China were married¹². A study in Tanzania found that women living apart from their male partner found it more difficult to disclose their status compared to married women¹³. Data indicates that 40% of those respondents who were in relationships had disclosed their HIV status to their male partners, 40% of those who were single and 0.59% of those who were separated reported to have disclosed to their previous male partners. The relationship between relationship status and disclosure was statistically significant among respondents who were in a relationship [$x^2 = 7.89$, p -value = 0.01], single [$x^2 = 5.04$, p -value = 0.03], and separated [$x^2 = 4.0$, p -value = 0.04]. All p -values were < 0.05 . This is in contrast with a study done in Kenya where no significance to relationship status was found¹⁴.

Employment status

The data reflected in Table 2 indicated that 71.18% ($f=121$) of respondents were unemployed, 9.41% ($f=16$) of respondents were employed part-time, 15.29% ($f=26$) were employed full-time, 4.12% ($f=7$) were self-employed. The South African population has a 26.7% of unemployment in 2017⁹. According to the Census 2011 the unemployment rate was 49.9% in Limpopo. There were 53.9% females compared to 46.1% males of working age according to the Census 2011⁹. Fifty percent (50%) of the female youth in the 20-24 years' age group were not in employment, education or training⁹. The high number of females that are unemployed in the present study might be explained by males being offered employment in agriculture in rural areas. Unemployment in Limpopo is aggravated by the lack of skills in labour force and the developing nature of the province as rural areas have limited work opportunities⁹. No statistical significance was observed.

Table 1: Sections of the questionnaire

SECTION	MAIN-HEADING	SUB-HEADING
Section A	Socio-demographic characteristics.	The age, religion, marital status, current partner, number of children, period of pregnancy, place of origin, employment status, level of education, head of household and knowledge of anyone who is HIV positive.
Section B	Sexual and reproductive health information.	The diagnosis, disclosure of HIV status, the use of condoms and CD4 cell count.
Section C	The motivating and enabling or modifying factors.	The knowledge of HIV transmission, ARVs and disclosure.
Section D	The challenges/barriers of HIV status disclosure.	The barriers of HIV status disclosure of pregnant women to their partners.

Table 2: Socio-demographic characteristics of respondents

Demographic characteristics	HIV-positive women	pregnant
	Frequency	Percentage
Age (N=170)		
18 – 20	7	4.12%
21 – 35	132	77.65%
36 – 40	31	18.23%
Total	170	100%
Relationship Status (N=170)	Frequency	Percentage
Married	34	20.00%
Single	94	55.29%
Separated	1	0.59%
Widowed	2	1.18%
Cohabiting	39	22.94%
Total	170	100%
Employment status (N=170)	Frequency	Percentage
Employed: Part-time	16	9.41%
Full-time	26	15.29%
Self-employed	7	4.12%
Unemployed	121	71.18%
Total	170	100%
Level of education (N=170)	Frequency	Percentage
No education	1	0.58%
Primary school	7	4.12%
Secondary school	118	69.42%
College	40	23.52%
University	4	2.36%
Total	170	100%

Table 3: Disclosure education received by respondents

Disclosure education received (N=170)	Frequency	Percentage
Yes	149	87.64%
No	21	12.36%
Total	170	100%

Level of education

As indicated in Table 2, 0.58% ($f=1$) of respondents had not attended any formal schooling, 4.12% ($f=7$) had attended up to primary level, 69.42% ($f=118$) had attended secondary school, 23.52% ($f=40$) had

attended up to college level, and only 2.36% ($f=4$) of respondents had attended up to university level. The results in Table 2 show that most of the respondents (69.42%) had attained a secondary level education. Any association between level of education and disclosure was not statistically significant.

According to another study¹⁵, 14.8% of their respondents had no formal education, 24.1% had primary education, 40.2% secondary education, 17% had completed Grade 12, and 3.9% had tertiary education. The findings from a study¹⁵ highlighted that caregivers who had primary education were three times more likely to disclose their HIV status than those who did not have formal education. In the present study, only 4.12% had primary education and therefore cannot be compared with the previous study. Although no statistical significance was achieved for the present study, 60% of respondents who schooled up to secondary level disclosed their HIV status to their male partners. There were only 20% of the respondents schooled up to tertiary level who disclosed to their male partners. Data reflected that 17.07% ($f=28$) of respondents feared loss of financial support from their male partners after disclosure. This might link to the level of education as lower levels of education limits employment opportunities. However, only 21.76% of the respondents who were employed, disclosed their HIV status to their male partners. No statistical significance was observed between employment and status disclosure.

There seems to be a combination of factors to be considered when enabling pregnant women to disclose their HIV status to their male partners. Some of these factors relate to the aspects identified by the HBM: perceived susceptibility; perceived severity; perceived benefits of disclosure; perceived costs and perceived barriers to disclosure.

Table 4: Disclosure of HIV-positive status to the partner as indicated by respondents

Disclosure of HIV-positive status to the partner (N170)	Frequency	Percentage
Yes	136	80%
No	34	20%
Total	170	100%

Perceived susceptibility

Perceived susceptibility in the HBM refer to the accuracy and relevancy of the diagnosis⁸. Perceived susceptibility refers to the risk of non-disclosure for respondents that can include the risk of re-infections of HIV in Figure 1. These women were tested and diagnosed as HIV positive at the ante natal clinic and accepted their diagnosis as accurate.

Perceived severity

Perceived severity of the HBM referred to the action that the patient will take considering the seriousness of the health problem⁸. Severity in this context links with the risk of non-disclosure. Health care providers facilitate disclosure education to create awareness of the risks of non-disclosure that include increased viral load and a higher risk for re-infections. Table 3 shows that 87.64% ($f=149$) of respondents had received disclosure education, while 12.36% ($f=21$) did not receive any disclosure education.

Table 5 indicated that 77.06% of respondents who had received disclosure education were enabled to disclose their HIV status to their male partners, while only 2.94% of those who did not receive disclosure education disclose their status. According to another study¹⁶, before receiving their first supply of ART, participants receive counselling for six months. In a study¹⁷ conducted in Botswana, 23.1% of the respondents were offered health education, and 30.8% received couple counselling and testing, which assisted with HIV status disclosure. There was sufficient evidence from the chi-square test [$\chi^2 = 5.84$, $p\text{-value} = 0.02$] that disclosure education positively influences HIV status disclosure to their male partners. Perceived severity as indicated by the HBM was an enabler for status disclosure as the disclosure education provided by health care providers assisted and

supported the pregnant women to disclose their status to their male partners.

Perceived benefits of disclosure

The perceived benefits of the HBM refer to the perception of patients that the treatment will cure or prevent the illness⁸. The perceived benefits of disclosure to their male partners include freedom from secrecy; obtaining support; improving health status and encouraging their partner to test. Only 60 of the 170 respondents indicated the perceived benefits of HIV status disclosure. The results in Figure 2 indicate that 9 out of 60 respondents needed to feel free from secrecy, 29 out of 60 respondents' benefit of disclosure was to obtain support from their male partners, 18 out of 60 respondents' benefit was to improve their health status (lower viral load), and 4 out of 60 respondents reported that their benefit for disclosure was to encourage their partner to test for HIV.

Similar findings were reported in a study¹⁸ where respondents claimed that the benefits of disclosure include: 4.8% freedom to use ARVs, 49.2% emotional support, and 11.9% financial support. In another study¹⁹, some participants disclosed their HIV status so that their male partners could get tested and because they wanted support from their male partners. Respondents in another study¹¹ concurred that major reasons for disclosure were fear of dying in isolation, and wanting support to be able to deal with HIV/AIDS. In contrast to the current study, a study¹² found that participants were motivated by perceived benefits to disclose their status to educate others about the facts of HIV infection, to ventilate feelings and to seek help, and similar to this study, to obtain support from their male partners. The most common finding which is similar to this study, as supported by previous studies^{11,12} is a need to inform significant others about the HIV status in order to obtain support. Someone who is ill needs physical, social and financial support from her partner, family members and friends for activities related to daily living. According to the HBM, the desire to comply with treatment can motivate the patient to disclose their HIV status to their partner because hiding treatment may lead to non-adherence and complications such as re-infection, MTCT, and infecting the partner.

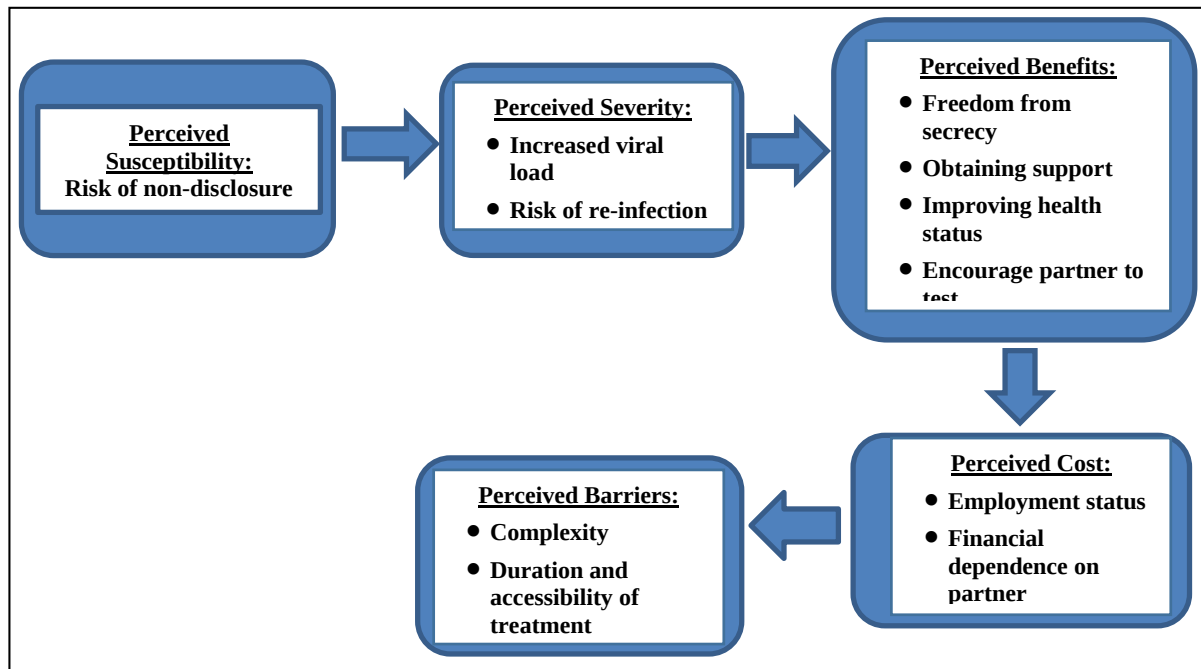


Figure 1: Diagram of conceptual framework – The Health Belief Model

Table 5: Relationship of age, relationship status, employment status and level of education to disclosure of HIV status to partners

Variable: partner	Disclosure to	Disclosed (N=170)		Had not disclosed (N=170)		Chi-Square	P-Value
		n	%	n	%		
Age:							
• 18-30yrs		70	41.18%	19	(11.18%)	0.10	0.71
• 31-40yrs		66	38.82%	15	(8.82%)	0.11	0.71
Relationship status:							
• In relationship		68	40%	5	2.94%	7.89	0.01
• Single		68	40%	28	16.47%	5.04	0.03
• Separated		00	0.00%	01	0.59%	4.0	0.04
Employment status:							
• Employed		37	21.76%	12	7.06%	0.57	0.51
• Unemployed		99	58.24%	22	12.94%	0.23	0.65
Level of education:							
• ≤ Secondary		102	60%	24	14.12%	0.07	0.81
• Tertiary		34	20%	10	5.88%	0.20	0.70
Disclosure education:							
• Received		131	77.06%	18	10.59%	5.84	0.02
• Not received		05	2.94%	16	9.41%	41.44	0.00

However, in this study participants disclosed mainly to gain support. Another component of the HBM's perceived benefits is that the patients believe a given treatment will help prevent the illness. The perceived benefits that a given treatment will help in the prevention of MTCT, especially when the disease is advanced, are beneficial enough to encourage the

respondents to disclose their status to their male partners. Even though there are benefits to disclosing HIV status, health care workers should not ignore the fact that the respondents may encounter perceived barriers in disclosure that can include costs, duration and accessibility of treatment.

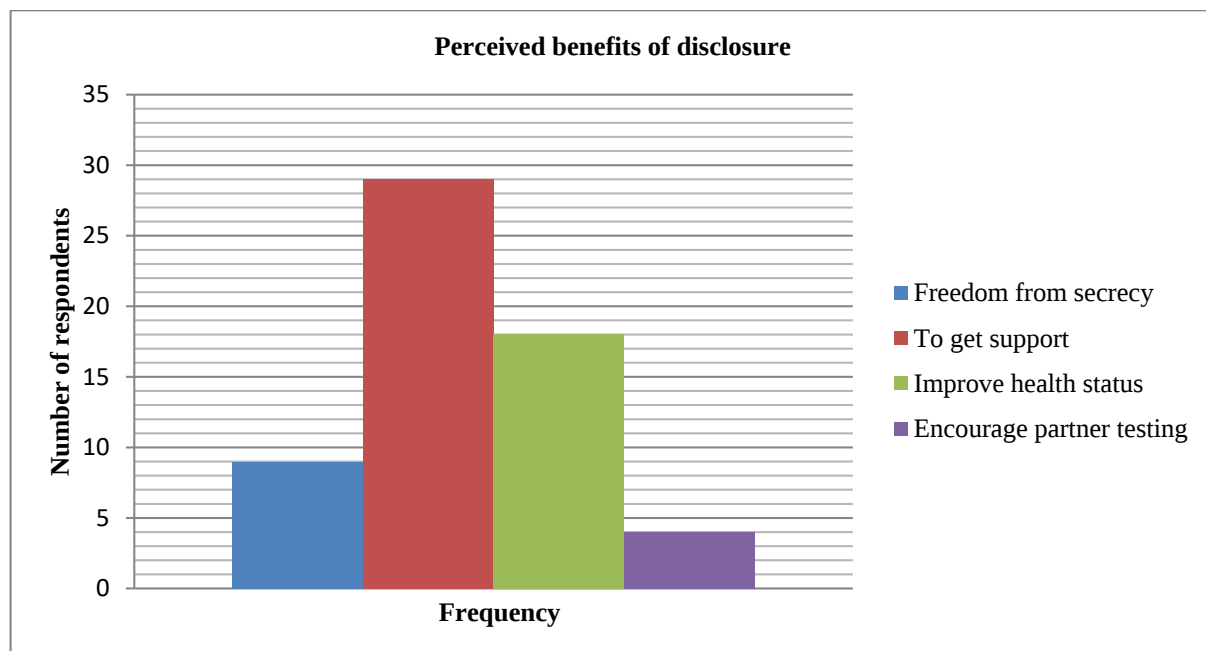


Figure 2: Perceived benefits of disclosure according to respondents (n=60)

Table 6: Perceived barriers of disclosure (n=40)

Challenges/disadvantages	Frequency	Percentage
Fear of rejection	19	47.50
Violent behaviour by the partner	07	17.50
Projection of blame by the partner	04	10.00
Fear of stigmatisation	10	25.00
Total	40	100
Not indicated	130	76.47

Perceived costs

Perceived costs according to the HBM reflects the financial implications of the illness for the patient⁸. The perceived costs linked to employment status of respondents and financial dependence on their partner. Table 5 indicates that any association between employment status and disclosure status was not statistically significant. In a previous study²⁰, 90% of their North West Province participants were unemployed. In a study done in China¹⁵ 17.20% of respondents were unemployed, while 82.43% of the respondents were employed, which is in contrast to this study's findings. China had a lower overall unemployment rate of 4.11% in 2017. Unemployment status in the present study might not have influenced the disclosure to the pregnant women's male partners. The data in the

present study reflects lower levels (21.76%) of disclosure among women who were employed.

Perceived barriers of disclosure

The perceived barriers of the HBM are the complexity, duration and accessibility of treatment for the illness⁸. Only 40 out of 170 respondents answered this question. The results in Table 6 indicate the perceived barriers of disclosure to their male partners include: feared rejection from their male partners (47.5%), feared violent behaviour/violence by their male partners (17.5%), indicated fear of projections of blame by their male partners (10%), and feared stigmatisation (25%).

In another study²¹, similar results on barriers to disclosure were found that included: fear of infidelity, blame, abandonment, rejection, discrimination, and disruptions of family relationships, and physical and emotional abuse. According to the HBM, the focus is on changing behaviour by encouraging compliance and preventive health care practices⁸. Identifying the barriers in status disclosure can assist in the facilitation of change in disclosure through disclosure education that can enhance compliance with treatment and condom use as a preventive strategy. In a study²² conducted in Hlabisa District,

KwaZulu-Natal, South Africa, reported that 7 out of 10 participants indicated that living with HIV/AIDS had exposed them to stigmatisation. The findings in the present study highlights the fear of stigmatisation as a serious perceived barrier for status disclosure to their male partners.

These findings highlight the need for disclosure education to address issues related to the fear of rejection, violence or blame by the male partner as well as fear of stigmatisation. Disclosure education can enable HIV positive pregnant women in preparing them to face these fears. Support for these women can be generated by health care providers who encourage them to invite their male partners for disclosure education and couple counselling. Stigmatisation can be addressed by enhancing HIV awareness in the community.

Disclosure of HIV-positive status to the partner

The results in Table 4 indicate that 80% ($f=136$) of respondents had disclosed their HIV-positive status to their male partners, while 20% ($f=34$) had not disclosed their HIV-positive status to their male partners. These findings are in contrast with a study²³ where only 40% of their participants had disclosed their HIV status to their male partners. The proportion of HIV status disclosure to their male partners was 60.9% in Togo²⁴. The African studies cited indicate disclosure rates by a partner as ranging from 25% to 60.9%, as compared to 80% of the respondents in this study. It was not clear from the data why it was higher in this study. Disclosure to the partner is an essential strategy for the success of PMTCT²⁴. It also plays a crucial role in the adoption of consistent condom use among couples to prevent new infections and re-infections, and improves adherence to ARTs, thus enhancing the health status of patients²⁴. Results from this study indicated a high disclosure rate (80%) that correlates with the 77.06% of respondents who received disclosure education from health care providers.

Ethical considerations

The researcher obtained ethical approval from the Health Studies Higher Degrees Committee, College of Human Sciences, University of South Africa (Reference number HSHDC/484/2015). Approval

was obtained from the relevant Department of Health, the managers/facility supervisors at the three hospital ARV clinic units and the developers of the questionnaire, and the respondents gave their informed consent.

The rights of the respondents to human dignity, privacy, anonymity and confidentiality, fair treatment, and being protected from discomfort and harm were respected and observed during data collection. Debriefing sessions were provided for the respondents to express their feelings and ask questions. None of the respondents experienced a need or wished to be referred to the psychologist (an option offered free of charge) for emotional support. The principle of justice was achieved by including respondents who complied with the inclusion criteria and who were at the ARV clinic during the data collection period.

Conclusion

Clinical practice can be enhanced when health care workers provide pre-pregnancy HIV screening to women who plan to become pregnant in order to reduce HIV related complications during pregnancy. HIV status disclosure to their male partners can be encouraged to enhance support during pregnancy. Disclosure education should aim at enabling pregnant women to disclose their HIV status to their male partners. All male partners should be encouraged to attend antenatal clinics with their pregnant partners to facilitate couple counselling.

The HBM can be used when training health care providers for disclosure education to enhance the perceived benefits of disclosure while decreasing the perceived barriers of disclosure. Health care workers should enable HIV-positive pregnant women's disclosure to their male partners by offering disclosure education and stress the importance of adherence to ARVs to facilitate adherence to treatment. Health care workers should re-educate the communities about condom use in order to prevent re-infection and transmission, as well as about the benefits of disclosure and the impact of stigmatisation.

Future research contributions include the trend of stigmatisation and its impact on society could be investigated. The views of the respondents' male partners were not heard and therefore further research could be conducted that would include

respondents' male partners. Pregnant women's satisfaction with service delivery at ART clinics should be researched. The role of condom use in safe sex practices related to disclosure of HIV status needs to be explored in more depth in future research.

The study revealed that even though most of the respondents from this study chose to disclose their HIV status to their male partners, some perceived barriers including fear of rejection, fear of violence from partner, blame for HIV exposure of partner and stigmatization still exist. The study revealed that 20% of the respondents had barriers to disclosing their HIV status to their male partners as 80.58% respondents did not always use condoms, thus PMTCT was not adhered to.

Disclosure education and support provided by health care workers is crucial in assisting HIV positive pregnant women in breaking the silence of their status disclosure to their male partners. Disclosure can enable HIV testing in others and increase prevention strategies to reduce MTCT and HIV-related mortality.

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Competing interests

There are not competing interests. The authors declare that they do not have any financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Author contribution

The data was collected by one author and a combined effort was made to draft and revise the article.

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