Research Article

Awareness and willingness to recommend HIV pre-exposure prophylaxis among private practitioners of Central Karnataka, India

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ABSTRACT

Background: HIV continues to be a major public health problem. Single daily oral dose in formulation containing tenofovir and emtricitabine is approved for HIV-negative people who are at high risk of acquiring HIV. Since pre-exposure prophylaxis (PrEP) does not prevent other sexually transmitted infections and is not a contraceptive, it should not replace with other well-established HIV prevention interventions. **Objective:** The objective of this study was as follows: (i) Awareness toward HIV PrEP among private practitioners and (ii) willingness to recommend HIV PrEP to the people at risk of HIV. **Materials and Methods:** It is a cross-sectional study. This study was conducted among 100 private practitioners of Davangere city. **Results:** In the present study, 63% of private practitioners were correctly knowing the drugs used in HIV PrEP. About 3% and 13% of practitioners knew the contraindications and side effects of HIV PrEP, respectively. About 17% of practitioners correctly knew efficacy of HIV PrEP. About 83% of practitioners opine PrEP would not have impact on ART drug resistance. All study participants felt that HIV PrEP should be made available to target group at risk of HIV. The knowledge score was poor among 27% of private practitioners. Knowledge score was good among 23% of practitioners. The attitude score was poor among 13% of practitioners and it was good among 64% of practitioners. All the study participants were willing to recommend PrEP to at least one of the at-risk populations. Private practitioners were most willing to recommend PrEP to men who have sex with men (76%) and serodiscordant couples (60%). **Conclusions:** In the present study, although over two-third of health-care providers scored average to good in knowledge related to HIV PrEP, they were less aware of eligibility criteria, contraindications, side effects, and efficacy of PrEP. Most of the respondents had favorable attitude about HIV PrEP. Almost all participants were willing to prescribe PrEP to at least one of the risk populations and were more willing prescribe to serodiscordant couples and men who have sex men.

KEY WORDS: Pre-exposure Prophylaxis for HIV; Awareness; Private Practitioners

INTRODUCTION

HIV continues to be a major worldwide public health problem although the burden of this widespread disease continues to vary between countries and regions. Since the beginning of this widespread disease, more than 70 million people have been infected and about 35 million people have died of HIV. There were about 36.9 million people who were living with HIV at the end of 2017.[1]

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As stated by centers for disease control and prevention (CDC), when single intervention is not 100% effective in preventing HIV transmission, integrating all available preventive strategies is extremely important.[2] A research conducted in 2015 found that oral pre-exposure prophylaxis (PrEP)

containing tenofovir can reduce the risk of HIV infection by 86% among men who have sex with men (MSM) and by 96% among serodiscordant couples.[3] PrEP is defined as the daily use of antiretroviral drugs by HIV uninfected people to prevent them from acquiring HIV.[4] Using antiretroviral medicines for treatment and PrEP add synergistically to the 90–90–90 target, target of reducing the number of people acquiring HIV by 75% by 2020. PrEP can also contribute to decreasing stigma and discrimination of HIV, especially in situations of vulnerability and disempowerment. The PrEP trials taken place in different parts of the world using tenofovir-based regimens proved that oral PrEP is safe and protective for both men and women when used correctly and consistently.[5] PrEP not only protects individuals taking it but also may additionally have an indirect effect on non-PrEP users since it has reduced the numbers of HIV infections and transmission.[6]

The United States Food and Drug Administration and CDC approved the single daily oral dose in formulation containing tenofovir (300 mg) and emtricitabine (200 mg). The World Health Organization and CDC have also produced PrEP implementation guidelines. Increasing the awareness and demand for PrEP for those at substantial risk of acquiring HIV should be part of comprehensive HIV programs.[5]

Since PrEP does not prevent other sexually transmitted infections and is not a contraceptive, it should not to be replaced with other well-established HIV prevention interventions. As the use of PrEP may lead to behavioral disinhibition/risk compensation, i.e., increased sexual risk behavior because people may feel protected against HIV infection, the PrEP users need extensive counseling and follow-up.[5,6] PrEP trials have been conducted in India among men who have sex with men (MSM) and female sex workers. In India, PrEP has recently been approved for the prevention of HIV[4,7] and there are limited studies conducted on HIV PrEP among private practitioners. Private practitioners play a critical role in implementing PrEP, so it is very necessary to know their awareness and willingness to recommend PrEP. With this background, the present study has been undertaken.

Objective

The objective of this study was as follows:
- Awareness toward HIV PrEP among private practitioners
- Willingness to recommend HIV PrEP to the people at risk of HIV.

MATERIALS AND METHODS

It is a cross-sectional study conducted from June 1 to December 31, 2018. The current study was conducted among 100 qualified, registered allopathic private practitioners of Davangere city. Participants who fulfilled inclusion and exclusion criteria were selected at random.

Inclusion Criteria

The following criteria were included in the study:
- Qualified, registered allopathic private practitioners of Davangere city.
- Private practitioners who had work experience at least 1 year.

Exclusion Criteria

Private practitioners who were not cooperative and did not consent for the study were excluded from the study.

Ethical clearance was obtained from the institutional ethical review board.

Data collection from these 100 participants as stared using self-administered predesigned, pre-tested, semi-structured questionnaire after obtaining informed verbal consent. The questionnaire comprised 10 questions regarding knowledge and six questions regarding attitude. Data were entered into MS Excel sheet, analyzed, and presented in the form of descriptive statistics (means, proportions, and percentages).

RESULTS

Knowledge of PrEP for HIV among the Study Participants

In the present study, 63% of private practitioners were correctly knowing the drugs used in HIV PrEP. About 3%, 7%, and 13% of practitioners knew the contraindications, eligibility criteria, and side effects of HIV PrEP, respectively. About 17% of practitioners correctly knew efficacy of HIV PrEP [Table 1].

Attitude toward HIV PrEP among the Study Participants

In the current study, 87% of practitioners felt that using HIV PrEP would not increase the incidence of HIV. About 83% of practitioners opine that PrEP would not have impact on

Table 1: Knowledge of PrEP for HIV among the study participants

Knowledge questions	Number (%)
Drugs used in PrEP for HIV	63 (63)
Indications for PrEP	37 (37)
Contraindications for PrEP	3 (3)
Eligibility criteria for PrEP	7 (7)
Protection offered/efficacy of PrEP drugs	17 (17)
Side effects of PrEP drugs	13 (13)
Impact of inconsistent use of PrEP medications	80 (80)
PrEP should be taken only before sex	87 (87)
Using PrEP does not help to prevent other STIs	60 (60)

PrEP: Pre-exposure prophylaxis

ART drug resistance. All study participants felt that HIV PrEP should be made available to target group at risk of HIV. About 77% of practitioners felt that PrEP use would not result in condom use [Table 2].

Knowledge Score Distribution among the Study Participants

The knowledge score was poor among 27% of private practitioners and good among 23% of them [Table 3].

Attitude Score Distribution among the Study Participants

The attitude score was poor among 13% of practitioners and it was good among 64% of practitioners [Table 4].

Willingness to Recommend PrEP among the Study Participants

All the study participants were willing to recommend PrEP to at least one of the at-risk populations. Private practitioners were most willing to recommend PrEP to men who have sex with men (76%) and serodiscordant couples (60%) [Table 5].

DISCUSSION

In the present study, 63% of private practitioners were correctly knowing the drugs used in HIV PrEP. About 3%, 7%, and 13% of practitioners knew the contraindications, eligibility criteria, and side effects of HIV PrEP, respectively. In the current study, 87% of practitioners felt that using HIV PrEP would not increase the incidence of HIV. All study participants felt that HIV PrEP should be made available to target group at risk of HIV. The knowledge score was good among 23% of practitioners and attitude score was poor among 13% of them. All the study participants were willing to recommend PrEP to at least one of the at-risk populations. Private practitioners were most willing to recommend PrEP to men who have sex with men (76%) and serodiscordant couples (60%).

As PrEP trials have been conducted in India, and recently, it has been approved for prevention, we felt to be the appropriate time to assess the awareness and willingness to recommend PrEP among private practitioners. This is the first study to our knowledge in this region that examines awareness of HIV PrEP among private practitioners.

The United States Food and Drug Administration and CDC approved the single daily oral dose containing 300 mg of tenofovir and 200 mg emtricitabine. In the current study, two-thirds of respondents were correctly knew drugs used in HIV PrEP.[8]

According to the WHO guidance, potential PrEP candidates include serodiscordant couples, sexual partner with HIV

Table 2: Attitude toward HIV PrEP among the study participants

Attitude questions	Number (%)
PrEP would not increase incidence of HIV	87 (87)
PrEP would not result in an increase in other STIs	70 (70)
PrEP would not have impact on ART drug resistance	83 (83)
PrEP should be made available to target groups at high risk of HIV	100 (100)
PrEP would not result in stopping condoms use	77 (77)
PrEP is necessary	73 (73)

PrEP: Pre-exposure prophylaxis

Table 3: Knowledge score distribution among the study participants

Knowledge score %	Number (%)
Poor (≤50)	10 (10)
Average (51–69)	67 (67)
Good (≥70)	23 (23)

Table 4: Attitude score distribution among the study participants

Attitude score %	Number (%)
Poor (≤50)	13 (13)
Average (51–69)	23 (23)
Good (≥70)	64 (64)

Table 5: Willingness to recommend PrEP among the study participants

People at risk on HIV	Number* (%)
Men who sex with men	76 (76)
Transgender	50 (50)
Commercial sex workers	57 (57)
Injecting drug users	57 (57)
Serodiscordant couples	60 (60)

*(multiple responses)

risk factors, history of sexually transmitted infection or syndromic sexually transmitted diseases treatment, and sexually active in a high incidence/prevalence population. In the present study, more than one-third of respondents were correctly aware of indications for HIV PrEP. According to the WHO guidance, PrEP is not indicated for HIV positive or person with creatinine clearance <60 ml/min or allergy to PrEP medicines. In the current study, very few participants were well aware of contraindications. Few side effects due to PrEP are nausea, vomiting, abdominal pain, rarely creatinine elevation, and loss of bone mineral density. In our study, very few private practitioners knew about these side effects. Knowing side effects are very important from the point of medication adherence. Eligibility criteria as suggested by the WHO are HIV negative, at high risk of HIV, and willingness

to use PrEP. In the present study, very few participants were aware of criteria.[9]

In our study, over two-third of private practitioners were having average to good knowledge related to HIV PrEP and this is consistent with CDC estimates and the study conducted by Walsh and Petroll.[10] However, in the study conducted by Blackstock *et al*.[11] and Puro *et al*.,[12] only one-third of primary care physicians scored good knowledge. Most of the study participants had good knowledge in studies done by White *et al*.[13] and Desai *et al*.[14] Literature review done by Turner *et al*.[15] concluded that primary care providers had high variability of attitudes, knowledge, and prescriptive practices related to PrEP. These differences of results could be due to the difference in the study designs, patient selection, different health-care system, and countries involved.

The PrEP users may have feel protected from HIV which may increase the sexual risk behavior is point of concern for medical personnel and the same was opined by few participants in the current study. Similar finding was observed in studies conducted by Blackstock *et al*.[11] and Baptista-Gonçalves *et al*.[16] However, overall majority of the study participants had favorable attitude toward HIV PrEP. In various studies conducted by Walsh and Petroll,[10] Puro *et al*.,[12] and Hoffman *et al*.,[17] health-care providers had positive attitude toward HIV PrEP.

In our study, most of the respondents recommended PrEP should be made available for people at substantial risk of acquiring HIV. Health-care providers involved in the studies conducted by White *et al*.[13] and Baptista-Gonçalves *et al*.[16] opine the same, but they were more concerned about drug resistance, decreased funds for other forms of HIV prevention, and side effects of medications.

In the present study, all respondents were willing to recommend PrEP to at least one of the risk populations and more willing to prescribe to men who have sex with men and serodiscordant couples. Similar finding was observed in the studies conducted by Edelman *et al*.[18] and Puro *et al*.[12]

In the study conducted by Andrew *et al*.,[19] willingness to prescribe PrEP was 75% and in the study by Hoffman *et al*.[17] ranged from 65% to 91%. In the study conducted by White *et al*.,[13] 96% of the physicians felt that CDC guidelines would have the greatest impact on their willingness to prescribe PrEP. The study by Adams *et al*.[20] providers' willingness to prescribe PrEP varies by patient group, with providers most willing to initiate the regimen with MSM who have an HIV-positive partner, and least willing to prescribe to high-risk heterosexuals or injection drug users.

The strength of the present study is that it elicited awareness and willingness to recommend HIV PrEP which provides baseline data and helps the government in training practitioners on HIV PrEP. Limitation of the study is small sample size which limits to generalize the results.

Recommendations

As most of private practitioners are having favorable attitude towards HIV PrEP and its the efficacy is also proven the government can initiate its incorporation into HIV preventive measures. Regular educational programs like continued medical education should be initiated for health- care providers to raise their knowledge of HIV PrEP. Health education activities should be made available for HIV risk population to make them understand the importance of HIV PrEP.

CONCLUSIONS

In the present study, although over two-third of health-care providers scored average to good knowledge related to HIV PrEP were less aware of eligibility criteria, contraindications, side effects, and efficacy of PrEP. Most of the respondents had favorable attitude about HIV PrEP. Only few health-care providers were concerned about risk compensation. Most of the respondents recommended PrEP to be made available for people at risk of HIV infection. Almost all participants were willing to prescribe PrEP to at least one of the risk populations and were more willing prescribe to men who have sex men and serodiscordant couples.

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