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Department of Public Health and Preventive
Medicine, Faculty of Medicine,
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¹Postgraduate Public Health Program, Faculty
of Medicine, Udayana University, Bali,
Indonesia

²Department of Public Health and Preventive
Medicine, Faculty of Medicine, Udayana
University, Bali, Indonesia

³Population Health, Medical School, Australian
National University

*Correspondence to: ptputripratiwi87@gmail.com

Acceptance strategy of HIV pre-exposure prophylaxis for female sex workers in Badung, Bali, Indonesia

Ni Putu Putri Pratiwi^{1*}, Luh Seri Ani², I Nyoman Sutarsa^{2,3}

ABSTRACT

Background and purpose: HIV pre-exposure prophylaxis (PrEP) is aimed to prevent the transmission of HIV infection. The use of PrEP by female sex workers (FSWs) in Badung District, Bali Province was relatively low. This study explores critical strategies to increase the acceptance of HIV PrEP program by FSWs in Badung District, Bali, Indonesia.

Methods: A qualitative descriptive study was conducted in Badung District. This study involved 16 purposively selected informants consisting of 5 FSWs who had used PrEP, 5 FSWs who had not and 6 stakeholders whom involved in the PrEP implementation. Data was collected using in-depth interviews which include: strategies for strengthening self-confidence, social support, effectiveness of PrEP implementation, and accessibility of health services. Data was analyzed using a thematic approach.

Results: The research highlights several key strategies to enhance the acceptance of PrEP including strengthening self-efficacy, empowering individuals with the confidence and skills to utilize PrEP effectively, bolstering of social support networks by reducing stigma and fostering a supportive environment. The effectiveness of PrEP program implementation is crucial by ensuring well-structured, responsive, and capability to meet the population needs. Finally, improving service accessibility is crucial, as it removes barriers to obtaining PrEP. Together, these strategies form a comprehensive framework for improving PrEP acceptance.

Conclusion: To increase PrEP acceptance among FSWs, the primary strategy that needs to be implemented is strengthening the service sector. For this reason, it is suggested that the health office carry out outreach and increase access to health services and assistance.

Keywords: resilience, emergency room nurses, qualitative study, the COVID-19 pandemic

INTRODUCTION

The World Health Organization (WHO) has recommended HIV pre-exposure prophylaxis (PrEP) as an additional strategy to prevent HIV transmission, particularly targeting key populations such as men who have sex with men (MSM), female sex workers (FSWs), transgender individuals, injecting drug users (IDUs) and individuals with serodiscordant partners, who are at high risk for HIV infection.¹⁻⁴ PrEP program emphasizes consistent adherence to the medication schedule, yet studies indicate a concerning trend of users discontinuing PrEP within the first year, potentially jeopardizing program sustainability.^{5,6} Reasons for discontinuation include concerns about drug side effects, stigma, lack of confidence in PrEP, and accessibility issue.⁷ Additional factors influencing PrEP utilization were awareness, perceived HIV risk, stigma from healthcare providers or social circles, distrust in healthcare systems, cost, and general apprehensions regarding PrEP efficacy and accessibility.⁸

The percentage of PrEP use in seven provinces in Indonesia among high risk groups, namely MSM (76.4%) tends to be better than FSW (10.86%), serodiscordant couples (7.04%), transgender (5.43%), IDU and others 0.1%.⁹ Specifically in Bali Province, data from five services in Denpasar City and Badung District show that coverage of using PrEP among FSW's was only 29.7%, much lower than the MSM group (66.2%).⁹ Furthermore, based on the PrEP program achievement data from Badung Health Office until September 2022, the FSWs who assessing PrEP was only 10.9% (27 of 248 targeted FSW). The coverage of PrEP in FSWs was also the lowest when compared to other PrEP recipient groups, namely 33.3% for MSM and 23.5% for transgenders in Badung District.¹⁰

The low coverage of PrEP use among FSWs is attributed to various factors, including service providers and health care systems, availability of PrEP, individual factors, and sociocultural factors, including stigma and social support.^{11,12} The combination of these factors influences the low acceptance and utilization of PrEP by FSWs.¹³

Studies on the acceptance of PrEP among FSW in Indonesia and Bali have yet been available. Several previous studies on PrEP acceptance, such as in Uganda, recommended various efforts to increase PrEP acceptance and coverage by FSWs, including, social support by family and close friends to de-stigmatize FSW and PrEP.¹⁴ A study in Mississippi, United States, addressed the problem of lack of knowledge, low awareness, and stigma by providing education and motivation to increase PrEP use.¹⁵ Structural, capacity, and policy challenges to increase PrEP uptake require innovation in clinical approaches, utilization technology, and policy change.¹⁶

Development of strategies to increase the acceptance and coverage of PrEP by FSWs is context-specific, so efforts that are successful in other countries may not necessarily be successful if implemented in Indonesia. To date, no research has been specifically looking at strategies to increase the coverage and acceptance of PrEP by FSWs in Indonesia. This study aims to explore and identify key strategies to increase the acceptance and coverage of PrEP among FSWs in Badung District, Bali Province. This study is the first step to developing locally-driven strategies that can be implemented by the government and local stakeholders in Indonesia to strengthen PrEP implementation and to increase acceptance and use of PrEP by FSWs in order to achieve the

zero new infection target in 2030.

METHOD

The research was conducted using a qualitative descriptive approach to explore an event that will be examined thoroughly, broadly, and in-depth. A qualitative descriptive approach was chosen because this study aims to explore PrEP acceptance strategies for FSWs. The study was conducted in Badung District, Bali Province, Indonesia. The number of HIV AIDS cases in Badung District was ranked the second highest in Bali Province. Based on the results of the 2021 mapping, there were 543 FSWs in Badung District.¹⁰ Badung is one of the districts that have become a pilot project for PrEP program in Indonesia. Three public health centers in Badung District have been facilitated to implement the HIV PrEP pilot program, namely Kuta I Public Health Center (PHC), Kuta II PHC, and South Kuta PHC, which have been actively implementing the PrEP program since September 2022.

A total of 16 informants were purposively selected to participate in this study, consisting of 5 FSWs using PrEP, 5 FSWs who were not using PrEP, and six stakeholders involved in the PrEP program (1 Badung District Health Office staff, 3 PHC officers, one District AIDS Commission staff, and 1 NGO staff). The informants were selected to obtain various perspectives for a comprehensive information regarding the development of critical strategies to increase the acceptability and coverage of PrEP among FSWs in the study locations. Informant recruitment was also selected based on the needs of the study regarding PrEP acceptance. FSWs were selected based on their PrEP utilization status. Selected respondents who met the inclusion criteria were given an explanation of the research, its benefits and impacts, then they provided with written consent.

Data were collected through in-depth interviews using semi-structured in-depth interview guidelines and recording devices. This research adopts The Theoretical Framework of Acceptability (TFA), which examines acceptance based on seven components: affective attitude, perceived burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness and self-efficacy.¹⁷ The data collection process was carried out for three months, from April to May 2023. The interviews were conducted directly by the principal researcher but the interview guidelines were jointly developed by all researchers. Aspects explored through in-depth interviews included demographic characteristics of informants and strategies necessary to increase acceptance of the HIV PrEP program in FSWs.

The analysis was conducted using a thematic approach with the following stages.¹⁸ The data analysis process begins with the verbatim transcription of the interviews' recordings. The interview transcripts were analyzed manually and the coding tree developed was validated by the researchers. These codes were then classified into several data categories, such as health service strategies, strategies by the government, individual FSW, and social support. The relationship between these categories were used to identify key themes and describe critical strategies that can be implemented to increase acceptance and coverage of PrEP by FSWs in Badung District.

To ensure the data credibility, researchers carried out several strategies, including member checking, source triangulation, and peer debriefing. Member checking was carried out by the researcher through reconfirming the results of the interview transcripts with two FSWs and three stakeholders.

This research has received an approval from the Research Ethics Committee of the Faculty of Medicine, Udayana University/Sanglah Hospital Denpasar, with ethical license number: 555/UN14.2.2.VII.14/LT/2023.

RESULT

Characteristics of informants

The characteristics of the informants are presented in Table 1. The FSWs’ age was ranged from 22 to 42 years, with a range of experience working as FSWs varying from just five months to ten years. As for the region of origin, all FSWs came from outside Bali; almost all came from Java. The education level of FSWs was also varied from never went to school to diploma, with almost 40% of them complete junior high school. Meanwhile, the stakeholders’ age was range from 37 to 45, the average length of work was 6.5 years, and the majority have a bachelor degree.

Table 1. Characteristics of informants

Informant code	Status	Origin	Age	Education	Length of work
11a	PrEP users	Banyuwangi	42	Elementary school	10 years
11b	PrEP users	Semarang	40	Junior high school	4 years
11c	PrEP users	Banyuwangi	30	Junior high school	3 years
11d	PrEP users	Jember	42	No school	10 years
11e	PrEP users	Jember	23	Junior high school	2 years
12a	not a PrEP user	Surabaya	30	Diploma	6 years
12b	not a PrEP user	Jember	22	Junior high school	7 months
12c	not a PrEP user	Bondowoso	27	Senior high school	2 years
12d	not a PrEP user	Bandung	35	Junior high school	5 months
12e	not a PrEP user	Palembang	29	Senior high school	2 years
13a	NGO outreach	Banyuwangi	42	Elementary school	10 years
13b	HIV Officer, District Health Office	Badung District Health Office	39	Bachelor	10 years
13c	HIV Officer, PHC	Public Health Centre	40	Bachelor	10 years
13d	HIV Officer, PHC	Public Health Centre	37	Bachelor	6 years
13e	HIV Officer, PHC	Public Health Centre	37	Diploma	2 years
13f	Program coordinator, NGO	NGO	44	Senior high school	19 years
13g	District AIDS Comission secretariat coordinator	AIDS Commission	45	Bachelor	17 years

Strategies to improve acceptance of PrEP

We identified four main themes and eleven sub-themes related to strategies for improving the acceptance of HIV PrEP among female sex workers in Badung District. The four key themes are: self-efficacy, social support, program effectiveness, and access to health services. Within these themes, the eleven sub-themes provide a more detailed understanding of the specific factors that influence PrEP acceptance (Table 2). These

themes and sub-themes form a comprehensive framework for developing targeted interventions to increase PrEP uptake among FSWs in the region.

Table 2. PrEP acceptance strategies among FSWs

Theme	Strategy	Description
Self-Efficacy	1. Education for FSWs	- Direct education for FSWs in locations they frequently visit.
	2. Mobile health services to FSWs in hotspots	- Operate a mobile clinic that visits homesteads and residences of FSWs regularly. - Provide a safe and private consultation room to increase the comfort and trust of FSWs
	3. Promotion via social media	- Conduct educational campaigns about PrEP through social media platforms that are popular among FSWs.
Social support	1. Support from spouses, homestead owners, and FSW friends	- A support group consisting of couples, homestead owners, and friends to provide mutual support. - Regular meetings to discuss experiences and provide moral support.
	2. Support from related stakeholders (PHC, AIDS Commission, NGOs)	- PHCs, AIDS Commission, and NGOs to discuss joint strategies. - Providing logistical support and resources from PHCs, AIDS Commission, and NGOs to increase program effectiveness.
Program effectiveness	1. Hotspot location mapping	- Map the location of FSWs hotspots in Badung District
	2. Outreach volunteers available	- Train outreach volunteers who specifically handle FSWs. - Ensure outreach volunteers have access to necessary information.
	3. Coordination between stakeholders	- Regular meetings consisting of PHC, AIDS Commission, NGOs and other stakeholders. - Effective communication system between stakeholders for collaboration.
Access of health services	1. Adjusting health service hours	- Extend PrEP service hours at clinics and PHCs. - Provide flexible health service hours to accommodate FSW schedules.
	2. Fast and easy registration system	- Simplifying the registration process for PrEP. - Using digital technology to speed up the registration process.
	3. PrEP working group	- Hold regular working group meetings to coordinate policy and program implementation.

Self-efficacy strengthening

Limited health promotion about PrEP may affect self-efficacy. The strategy that needs to be implemented is to promote the benefits of PrEP to FSWs directly in hotspot locations. Mobile services from health workers directly to prostitution locations provide information about PrEP, PrEP screening, and PrEP medication. Integrated HIV PrEP services could be more accessible to deliver.

"... For mobile VCT, information was given to friends, like yesterday... the strategy is to have mobile services. Yes, like in other provinces, like in Surabaya, so that my friends who want PrEP are quick. Continue promotion from PHC to be even more active for mobile PrEP services at this location." [13a, NGO outreach]

The promotion of the PrEP program remains limited primarily through social media because the target audience for social media is the public. PrEP program promotion is primarily promoted directly by field workers and by services during mobile VCT services. This PrEP program's target is a population at high risk of infection, and has yet to target the public. The PHCs need to be actively involved in providing information about PrEP directly in the field. They can provide promotion related to PrEP with print and electronic media.

"The promotion were only from field outreach. If we do outreach with social media, we have not done it because this is for special populations who are at risk of being afraid later, afraid of missing the public's perception." [13b, PP HIV Badung District Health Office]

"Occasionally, the PHC staff will come here by bringing the medicine. If possible, try it for some people, and introduce the drug from the service, come to the location to provide information." [12e, FSWs are not PrEP users]

Strengthening social support

Social support may influence the decision to use PrEP. Friendship and the information provided are considerations for PrEP users. Negative information about PrEP may influence the decision not to use it. Support from outreach workers to provide information directly to hotspot locations is also helpful.

"I'm still not ready, because none of my friends here are using PrEP. Maybe they already know the side effects." [12d, non-PrEP user]

"A lot of that support was from outreach workers... they were the ones who told us about the benefits of PrEP. Education of outreach workers and support for using PrEP is very helpful." [11e, PrEP user]

Furthermore, it is revealed that there was also a suggestion to initiate the formation of a PrEP working group. This working group involves all parties who can participate in the PrEP program, especially the location owner. Location owners can motivate program implementation. A vital figure in the location must be trusted and respected.

"... Make a PrEP working group, for example. The head of the health office can become the head of the PrEP working group. Then a work team was formed. [13g, AIDS Commission Secretariat Coordinator for Badung District]

"... Formerly, the site owner participated in the prevention program. He was respected there. Suppose there are programs delivered quickly. There was an influential person in that location. However, now it is not like that anymore, but it might not be easy now due to the effects of the closure. [13g, AIDS Commission Secretariat Coordinator, Badung District]

Effectiveness of PrEP program implementation

The real-time location hotspot mapping strategy effectively speeds up response and ensures more targeted service distribution. This approach allows the team to quickly and accurately determine areas requiring PrEP intervention, promptly providing the necessary services.

"... To identify the service provider's hotspot. We do the real-time mapping. So, we visited there to find a hotspot." [13g, AIDS Commission Secretariat Coordinator for Badung District]

Outreach workers can assist and follow up with FSWs who use PrEP. They can help FSWs understand the importance of repeat visits. Regular health monitoring, facilitating access to PrEP medication, and providing support in coping with problems during PrEP use.

"After he gets PrEP, the NGO is obliged to follow up on the continuation of PrEP. FSW must take medication for one month. Then monitored, whether the next month he comes again or not. If they do not return, we from the PHC and NGOs evaluate why the client does not want to take the medicine." [13b, PP HIV Badung District Health Office]

Coordination meetings between institutions such as PHCs, the AIDS Commission, and NGOs are held every three months. This activity aims to gather all policy makers involved. In this meeting, monitoring and evaluation of the implementation of the PrEP program were carried out. Through this coordination, the effectiveness of the program can continue to be improved.

"Coordination meetings, for example, PHC with the AIDS Commission and NGOs. The strategy is like that by gathering stakeholders and evaluating activities. Then make the right solution to the problem. So, evaluate every three months." [13g, AIDS Commission Secretariat Coordinator for Badung District]

Service accessibility

Before accessing PrEP, prospective users must fill out a self-screening questionnaire and book a schedule. Applications for self-screening should be more accessible and concise so FSWs can fill in themselves. Suggestions are to bring laboratory support services closer by collaborating with the nearest hospital or clinic.

"The suggestion is that the online application is simpler and easier. People can access health services everywhere". [13c, PP HIV Kuta I PHC]

"The government can expand PrEP services. Collaborating with private services to facilitate access to taking PrEP..." [13c, PP HIV]

One strategy that can be implemented to increase PrEP in FSWs is their willingness to access PrEP to make a joint schedule to the health service. PHC may also carry out services outside working hours. FSWs have difficulty accessing health services in the morning, thus PHC can perform mobile services to locations.

"Yes, maybe I can schedule what can be done. We plan to schedule this later. We have talked to field officers."

We collect PrEP users and schedule samples to be shipped." [13e, HIV program manager, PHC]

"...if it can be assisted for strengthening services outside working hours. The PHC is already working in the morning, and maybe it can be supported with overtime services, for example." [13b, PP HIV Badung District Health Office]

The PrEP program implemented in Badung District is a pilot program provided free of charge at designated services, including for all medical consumables, supporting examinations, and PrEP drug logistics, so PrEP users are not charged. All funding for this program comes from the Indonesian Ministry of Health, which allows free access for those at high risk of HIV infection, thereby encouraging acceptance of the PrEP program among FSWs.

"Getting PrEP medication at the PHCs is free because the government covers it. We just have to register and there will be officers specifically to serve us." [11d, FSW PrEP user]

DISCUSSION

This study explored strategies to improve HIV PrEP acceptance among FSWs. This study found that strategies to increase PrEP acceptance can be divided into four themes: strengthening self-efficacy, strengthening social support, effectiveness of PrEP program implementation, and service accessibility. The role of self-confidence and easy access to health services can encourage people to accept the PrEP program.

The strengthening self-efficacy measures were conducted by increasing the confidence of FSW to use PrEP. PHC carries promotion activities directly to hotspot locations. Health workers who directly provide information can provide motivation as well. A study in China found a relationship between PrEP knowledge and motivation on self-efficacy levels. Self-efficacy in rural areas also shown to be lower than in urban areas.¹⁹ Other study also found that knowledge, motivation, and self-efficacy are essential for PrEP and reducing barriers to health care systems.²⁰

Strategies to increase knowledge, risk perception, sexual health communication, and access to PrEP can increase acceptance of PrEP programs.²¹ This strategy can also provide education through websites and social media campaigns to increase PrEP use among priority HIV populations.²² Raising awareness about PrEP among healthcare providers and critical populations, facilities, and work force was a positive strategy. Unlimited patient recruitment quotas and PrEP training to strengthen provider trust and knowledge is critical for implementing PrEP.²³ Health education can increase awareness and willingness to use HIV PrEP.²⁴ The friendliness of PrEP services and laboratory access for FSW needs to be increased, which can affect PrEP acceptance in Badung District.

The accessibility strategy is related to PHC service hours, one-stop laboratory services, and facilitating procedures in services. The health office coordinates and cooperates with the PHC, NGOs, the AIDS Commission, and prostitution owners. The role of the PHC is to provide easily accessible services to FSW. So

far, there have been problems with setting service hours at PHC. Therefore, it needs a more extended, more straightforward, and faster service time.

Field outreach officers provide education and refer FSWs to the PHC. They can also have a role in monitoring and assisting in the provision of PrEP medication. A similar study in South Africa stated that an intervention strategy of increasing outreach and training to healthcare workers and the community could reduce barriers to PrEP services.²⁵ Technological developments also help by using telemedicine to provide education, laboratory monitoring, and prescribing drugs.²⁶ Efforts are needed to overcome structural, capacity, and policy barriers to increase acceptance of PrEP.¹⁶

The role of the location's owner who manages the FSWs is to cooperate well with NGOs, PHC, the AIDS Commission, and the district health office. Previously there was a good relationship with the owner of a guest house, who was part of the location working group. However, due to the location closure, the location working group has finally disbanded, and they are carrying out activities in secret. Finally, it is not easy to control the existence of the FSWs. Therefore, there must be good coordination in the future so that the homeowners can report the number of FSWs and refer them to health services. Support from partners and friends can also encourage PrEP use in FSWs.

The stigma attached to PrEP use can be a barrier. Interventions to reduce stigma and increase social support can increase acceptance of PrEP.¹¹ This social support plays a role in encouraging HIV testing and awareness of using PrEP.²⁷ Support from partners also plays a role in increasing compliance with ARV users.²⁸ Other studies also mention that self-protection from HIV infection, fear of broken condoms, risky behaviour, and positive support from others encourages PrEP use.²⁹

The government needs to map the hotspots in each region, outreach to FSW and medication assistance. Health workers must remind FSWs to take their medication on schedule and monitor them on PrEP. FSWs can also activate a medication reminder alarm on his cell phone. Thus, they can adhere to the medication schedule more easily. Cross-sectoral coordination is needed to communicate policies, program implementation, and program monitoring and evaluation. Thus, it can facilitate if there are obstacles found. Prepare drug logistics, human resources, and funding for implementing the PrEP program. For example, there is a delay in the distribution of drugs from the health office, which can disrupt services at the health center. Other studies show that strategies for implementing PrEP are reducing the stigma of PrEP-using FSWs, lifestyle modification, education, and integration of PrEP in health services.³⁰

This research, while providing valuable insights into strategies for increasing HIV PrEP acceptance among female sex workers (FSWs) in Badung, Bali, it has several limitations. The study's small sample size of 16 informants may not fully represent the broader population of FSWs, potentially limiting the generalizability of the findings. Additionally, the research relies solely on qualitative data, which, while rich in detail, may not capture the full scope of factors influencing PrEP acceptance. Furthermore, the study's focus on specific strategies such as self-efficacy, social support, program effectiveness, and service accessibility may overlook other relevant factors, such as cultural influences or economic barriers. Future research should consider larger, more diverse samples and incorporate quantitative measures to validate and expand upon these findings.

CONCLUSION

This study found that the strategy to increase acceptance of HIV PrEP among FSW in Badung District was carried out through practical and strategic steps by various parties based on their respective roles and authorities—strategies for strengthening self-efficacy, strengthening social support, effectiveness of PrEP program implementation, and service accessibility.

A multifaceted approach to enhance the acceptance of HIV PrEP among FSWs in Badung District should be adopted. Future studies should focus on developing and testing tailored interventions that strengthen self-efficacy, build robust social support systems, and improve the effectiveness of PrEP program implementation. Additionally, research should explore innovative strategies to increase service accessibility, particularly in underserved areas. Collaborative efforts involving health authorities, community organizations, and policymakers are crucial to refining these strategies and ensuring their sustainability. This holistic approach will not only increase PrEP uptake but also contribute to the broader efforts in HIV prevention and public health.

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AUTHOR CONTRIBUTION

NPPP designed and conducted the research, analyzed data, wrote the first draft, and edited the manuscript. LSA and INS were involved in the study design and research concept, provided feedback, and edited the manuscript.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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