p-ISSN 2086-6380
e-ISSN 2548-7949

Jurnal Ilmu Kesehatan Masyarakat, Jul2022, 13(2):155-167
DOI: https://doi.org/10.26553/jikm.2022.13.2.155-167
Available online at http://ejournal.fkm.unsri.ac.id/index.php/jikm

SPATIAL DISTRIBUTION OF HIV CASES IN FEMALE SEX WORKERS IN PALEMBANG CITY

Risda Anjani, Amrina Rosyada[*] , Najmah, Dini Arista Putri
Faculty of Public Health, Universitas Sriwijaya, Jl. Palembang-Prabumulih KM 32 Ogan Ilir, 30662, Indonesia

ABSTRACT

Key populations such as PSP (Female Sex Workers) are one of the factors that have the potential to influence the number of HIV-positive cases. The prevalence of HIV cases in Indonesia in the PSP group is 2.1%. This study aimed to examine the spatial distribution of HIV cases in PSP in Palembang City. This type of research is descriptive with an ecological study design. The population groups studied were 41 Public Health Center, 14 hospitals, and other HIV services such as Class I Rutan and Class IIA Women's Prisons in 18 sub-districts in Palembang City. The study used secondary data from the KT (Counseling and Testing), and TIPK (HIV test by the initiation of health workers) HIV Reports from the City Health Office, while spatial data were obtained from government websites and Google Maps. The results showed that the distribution area of the PSP key population was at most 23 Ilir, Merdeka Health Center and Campus Health Center, and in the working area of hospitals, detention centers, and women's prisons, there was no distribution of PSP key populations. Then, the distribution of HIV-positive cases in the PSP key population found no distribution of HIV confirmed cases in the working area of the public health center or the working area of hospitals, detention centers, and women's prisons. The need for further attention to policymakers on the unequal distribution of VCT (Voluntary Counseling and Testing) services and socialization from health workers is also needed to increase awareness of PSP key populations regarding the importance of conducting VCT to prevent and control HIV cases in key populations to suppress HIV cases in Palembang City.

Keywords: *HIV, spatial analysis, female sex workers*

ABSTRAK

Populasi kunci seperti Pekerja Seks Perempuan (PSP) merupakan salah satu faktor yang berpotensi mempengaruhi jumlah kasus positif HIV. Prevalensi kasus HIV di Indonesia pada kelompok PSP berada pada angka 2,1%. Tujuan penelitian ini adalah untuk melihat distribusi spasial kasus HIV pada PSP di Kota Palembang. Jenis penelitian ini adalah deskriptif dengan desain studi ekologi. Kelompok populasi yang diteliti adalah 41 Puskesmas, 14 Rumah Sakit, dan layanan HIV lain seperti Rutan Kelas I, dan Lapas Wanita Kelas IIA di 18 kecamatan di Kota Palembang. Penelitian menggunakan data sekunder dari Laporan formulir KT (Konseling dan Test) dan TIPK (Tes HIV berdasarkan Inisiasi Petugas Kesehatan) HIV Dinas Kesehatan Kota sedangkan data spasial didapatkan dari situs pemerintah dan *Google Maps.* Hasil penelitian menunjukkan daerah persebaran populasi kunci PSP paling banyak berada pada 23 Ilir, puskesmas Merdeka dan puskesmas Kampus dan pada wilayah kerja rumah sakit, rutan, dan lapas wanita tidak terdapat sebaran populasi kunci PSP. Lalu, Sebaran kasus positif HIV pada populasi kunci PSP, didapatkan hasil bahwa tidak terdapat sebaran kasus konfirmasi HIV pada wilayah kerja puskesmas maupun wilayah kerja rumah sakit, rutan, dan lapas wanita. Perlunya perhatian lebih lanjut kepada pemangku kebijakan terhadap persebaran layanan *Voluntary Counseling and Testing* (VCT) yang belum merata dan sosialisasi dari tenaga Kesehatan juga diperlukan untuk meningkatkan kesadaran populasi kunci PSP terkait pentingnya melakukan VCT sebagai upaya pencegahan dan penanggulangan kasus HIV pada populasi kunci dengan tujuan menekan kasus HIV di Kota Palembang.

Kata Kunci : HIV, analisis spasial, Pekerja Seks Perempuan

Correspondece Address: Amrina Rosyada, Health Faculty of Sriwijaya University, Palembang-Prabumulih street Km 32 Ogan Ilir , Indonesia , E-mail: amrinarosyada@unsri.ac.id

Received : May 29, 2022 Accepted : August 2, 2022 Published: September 1, 2022

Introduction

Human Immunodeficiency Virus or HIV is a virus that spreads through certain body fluids that attack the immune system, especially CD-4 cells, often also called T cells. This virus is transmitted through blood contact and sexual contact and can be transmitted from the mother to its foetus. Over time, HIV can destroy so many immune cells that the body can not fight off infection and disease. HIV is not treatable and can reduce the number of CD-4 cells (T cells) in the body. HIV also causes low body immunity; this makes HIV patients suffer from Acquired Immune Deficiency Syndrome (AIDS), a collection of several disease symptoms due to weak human immunity.[1]

HIV continues to be a major global health problem that has so far infected more than 50,000 people. It is estimated that there were 50,282 HIV sufferers at the end of 2019, with 78% of new HIV infections in the Asia Pacific region.[2] Meanwhile, 680,000 people globally have died from HIV-related diseases, and 1.5 million people have been infected with HIV. The development of the number of new HIV cases in Indonesia increased significantly in 2016 and 2017 when compared to the relatively stable development of the number of new cases in 2010-2012. However, in 2015, HIV cases decreased from 2014 to 30,935 cases.

Provinces with the highest HIV cases were East Java, DKI Jakarta, and West Java. For new AIDS cases, there was a decrease in cases from 2016 to 2017, from 10,146 cases to 9,280 positive cases. Cumulatively, AIDS cases until 2018 were recorded as 109,829 cases.[1] South Sumatra is ranked 16th nationally, while on the island of Sumatra itself, South Sumatra Province is ranked 2nd for HIV/AIDS cases after North Sumatra with 2,810 HIV cases and 869 AIDS cases. Meanwhile, the cumulative number of HIV/AIDS cases in South Sumatra from 1987 to December 2017 who lived with AIDS was 792 cases, and 77 cases died of AIDS with a prevalence of 5.49% transmission.[2]

Populations with a high risk of HIV are divided into several types, including Homosexuality (men having sex with men), PSP (Female Sex Workers), Injecting drug users, and transgender. The prevalence of HIV cases in Indonesia in the MSM population is 17.9%, the PSP population is 2.1%, injecting drug users is at 13.7%, and the transgender population is 11.9%.[3] Based on data from the 2015 Integrated Biological and Behavioral Surveillance (IBBS), it was found that the prevalence of HIV among the population at risk is injecting drug users (IDUs) at 28.78%, Homosexuality (men having sex with men) at 25.80%, transgender at 24.82%, PSPL (women direct sex workers) at 7.97%, and serodiscordant at 0.82%.[4]

Factors that cause HIV/AIDS cases continue to soar due to deviant behavior from the behavior of female sex workers (PSP), homosexuals, and injecting drug users who take turns.[5] PSP (Female Sex Workers) and their customers are people who are significantly at risk of transmitting HIV/AIDS because they engage in unsafe sexual behaviour. PSPs generally do not have a strong position in using condoms with their customers. Education, knowledge, attitude, and availability of facilities influence a person's behaviour which is strengthened by social support from the environment.

HIV testing is the main entry point for prevention, care, support, and treatment services. The results of research conducted by Amu in Orsum, Nigeria[6], the most important reason for accessing an HIV test is the desire to know their HIV status, to reduce fear and anxiety and worry about the risk of infection. Another study said that the reason for taking an HIV test was for health reasons and support from friends, while their reluctance to take an HIV test was due to fear of taking an HIV test and fear of discrimination from the social environment.[7]

GIS is a computer-based information system used to process and store geographic data or information; the analysis is spatial analysis.[8] Mapping using GIS to see the spread of HIV/AIDS can be an option at this time. More information than tables, graphs, and diagrams that only display quantitative data can be seen from the presentation on the map. Based on the background description, this study aims to know the distribution of HIV cases in the key population of PSP (Female Sex Workers) in Palembang City using the Geographic Information System.

Method

This research is a descriptive study with an ecological study design (the unit of analysis is the population). This research is included in an ecological study with the type of multi-group comparison because this study will observe the characteristics of the population based on place (work area of public health center and hospital). The population studied in this study were all HIV services in Palembang in 2021, including the work area of the public health center, hospitals, and other services such as detention centers and women's prisons in Palembang. The number of samples obtained in this study is 957 PSP, with 501 samples which have complete data characteristics.

The variables in this study consisted of the number of PSP key populations, the number of HIV cases in PSP in Palembang City, and characteristics of PSP key population such as last of education, age, and profession. The data used in this study is secondary data obtained from the HIV AIDS Information System by the Ministry of Health, which was obtained from the Palembang City Health Office. The data used are reported data originating from people who fill out HIV Counseling and Testing forms either voluntarily (KTS) or at the initiation of health workers (TIPK)

at the HIV Service in Palembang City. Then, the data is processed with descriptive analysis techniques of spatial data and attribute data by mapping using QGIS.

Results

The results of the mapping using quantum GIS based on data on HIV testing and counselling forms at the SIHA of the Palembang City Health Office found that the distribution of PSP (Women Sex Workers) was in 22 Public Health Centers

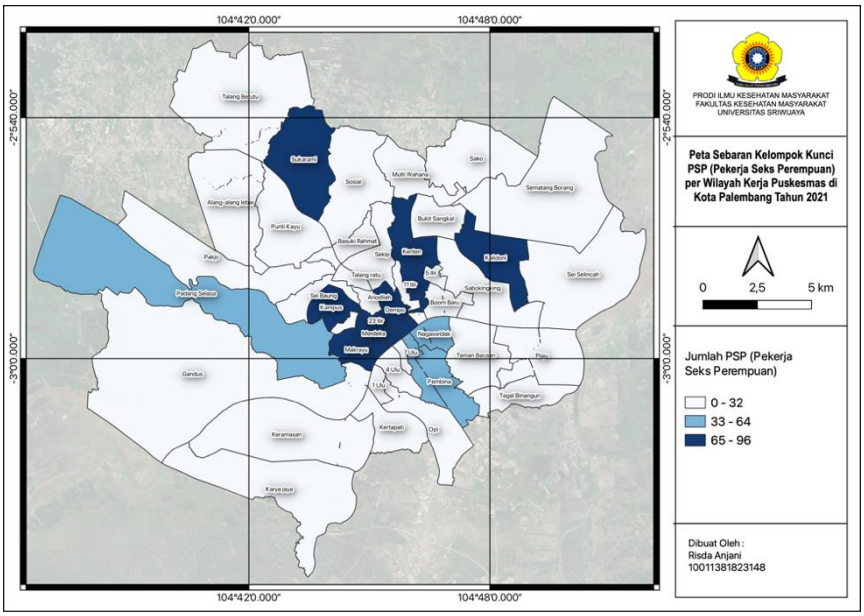

Figure 1. Distribution Map of PSP Key Populations per Health Center Work Area in Palembang City

The highest number or number of distributions being at 23 Ilir Health Center which was marked in blue—concentrated as much as 96 PSP. The second-highest number was at the Merdeka Health Center, namely 87 PSP. The third-highest number of distributions was at the Campus Health Center and Sukarami Health Center, namely 83 PSP. At Kalidoni Health Center, there are 75 PSP, Kenten Health Center 73 PSP, Dempo Health Center 69 PSP, Nagaswidak Health Center 47 PSP, Pembina Health Center 40 PSP, Padang Selasa Health Center 33 PSP, 4 Ulu Health Center 30 PSP, Kertapati Health Center 24 PSP, Karya Jaya Health Center and 1 Ulu Health Center with 14 PSP, Sekip Health Center with 11 MSM, Basuki Rahmat and Boom Baru Health Center with 5 PSP, Alang-Alang Lebar Health Center with 4 PSP, and Sabokinging Health Center with 3 PSP. Meanwhile, the other ten public health centers did not have any PSP distribution, with a total estimated distribution of PSP who came to HIV services in the working area of the public health center as many as 957 people.

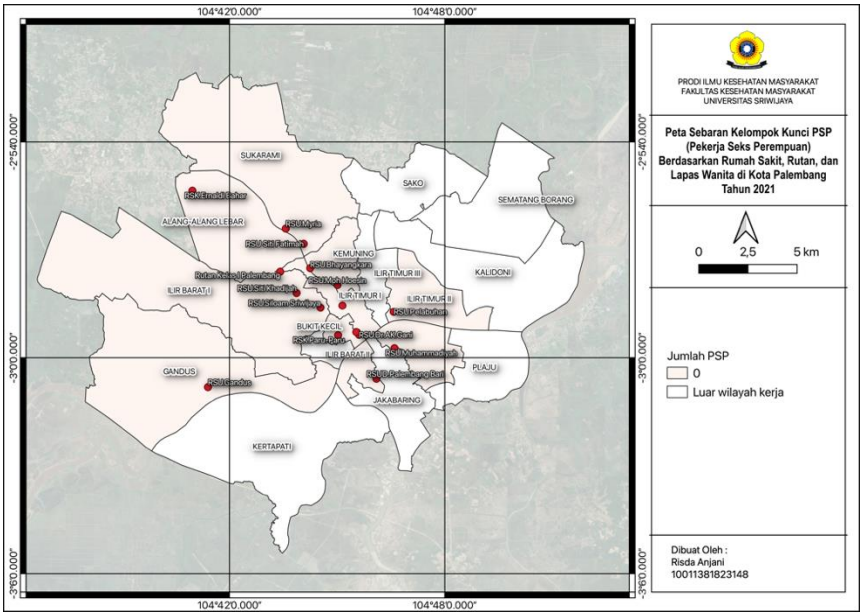

Figure 2 Distribution Map of PSP Key Populations Based on Hospitals, Detention Centers, and Women's Prisons in Palembang City

While in Hospitals, Class I State Prisons, and Class IIA Women's Prisons, as can be seen on the map, there is no distribution of the PSP (Female Sex Worker) key population.

Next, result of distribution of HIV-positive PSP (Female Sex Workers) in Palembang City shows that in the following two maps, it was found that there was no distribution of HIV positive in the PSP key population in the city of Palembang in the working area of the Health Center as well as the Hospital, Rutan, and Prisons in the City of Palembang based on the HIV Test and Counseling Form data at the SIHA of the Palembang City Health Office.

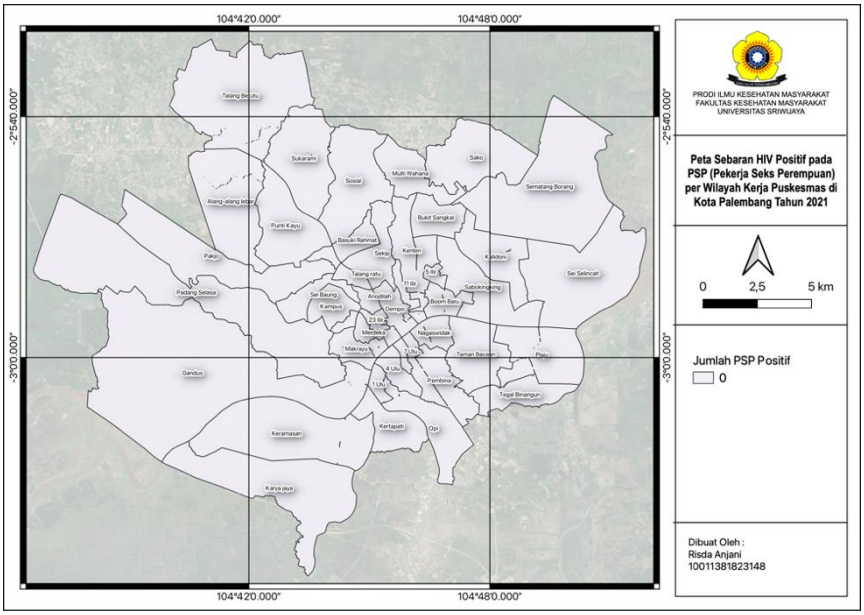

Figure 3 Distribution Map of Key PSP HIV Positive Populations per Health Center Work Area in Palembang City in 2021

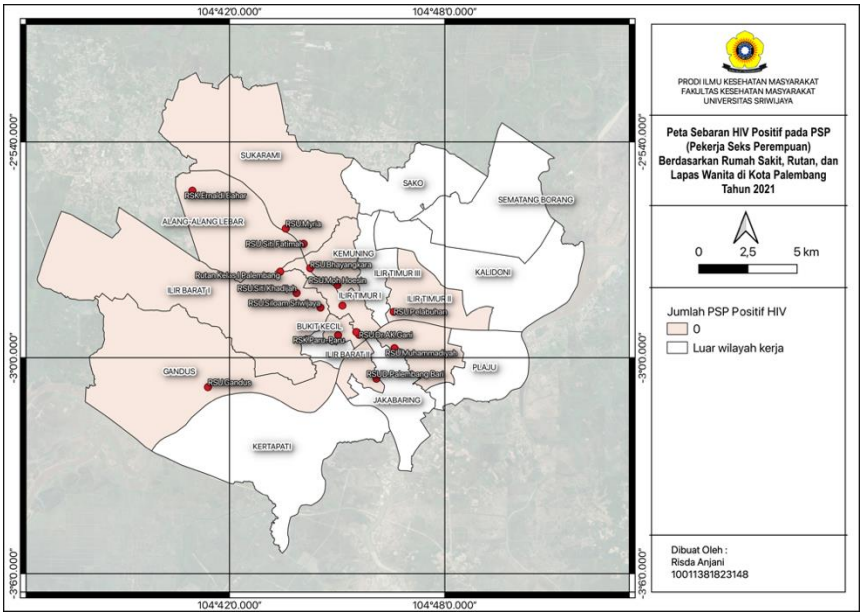

Figure 4 Distribution Map of HIV-Positive PSP Key Populations based on Hospitals, Detention Centers, and Women's Prisons in Palembang City

In the two maps above, it was found that there was no distribution of HIV positive in the PSP key population in the city of Palembang in the working area of the Health Center as well as the Hospital, Rutan, and Prisons in the City of Palembang based on the HIV Test and Counseling Form data at the SIHA of the Palembang City Health Office.

Based on the HIV screening data from the selected form of counseling and HIV testing from the Palembang City Health Office, a sample of 501 PSPs in the PSP population was obtained in Palembang City.

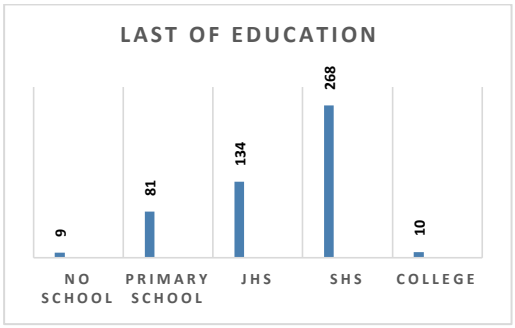

Figure 5 Last Education of PSP

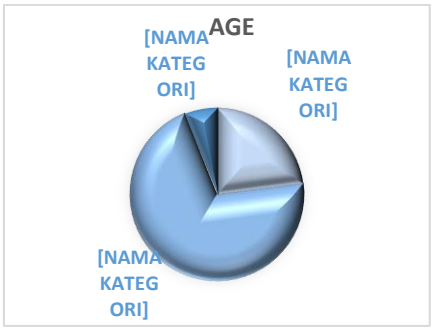

Figure 6 Age Characteristics of PSP

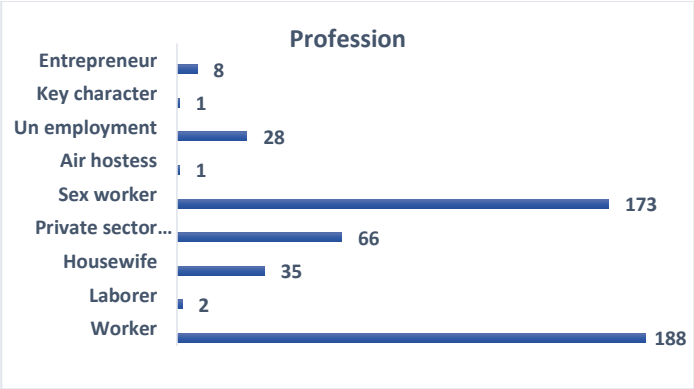

Figure 7 Characteristics of PSP Profession

The most recent education of this PSP key group graduated from high school with a figure of 268 PSP, 10 PSPs graduated from college, 134 PSPs graduated from junior high school, 81 PSPs graduated from elementary school, and 9 others never attended school. With the age category <25 years old as many as 115 PSP, 25-49 years old as many as 356 PSPs, and >50 years old as many as 30 PSPs. There are various types of PSP's work, with the most working as sex workers as many as 173 PSPs, 28 PSPs unemployment and 188 PSPs not mentioning the type of work.

Discussion

Female Sex Workers (PSP) are one of the causes of high risk of sexually transmitted infections.[9] Moreover, PSP is one of the factors that have the potential to influence the number of HIV-positive cases. The Ministry of Health of the Republic of Indonesia stated that PSP was at risk of being infected with HIV 21 times among at-risk populations in the world in 2018.[10] The potential for HIV transmission from this PSP key population, among others, comes from behavioural risk factors, which include more than one sex partner, anal sex, and condom use.

23 Ilir Health Center and Merdeka Health Center, where PSP distribution is the most, are located in the Bukit Kecil sub-district. Ecologically, the Bukit Kecil sub-district has an area of 9.92 km² with six villages. There are several parks in the Bukit Kecil District, one of which is the park

that is popular and most frequently visited by the public, namely Kambang Iwak Park. There are approximately five gym locations for gyms and fitness centers in the Bukit Kecil sub-district. Meanwhile, there are 10-star hotels and 12 non-star hotels in the Bukit Kecil sub-district. HIV transmission hotspots identified from this PSP key population include bars, nightclubs, massage parlours, karaoke places, hotels, and causeways.[11] Based on research conducted by Sari & Hargono[12] in Kab. Sidoargo, said that the PSP's hotspot is not known for certain. The existence of PSP can only be known through night entertainment venues, such as: karaoke places; coffee shops, the area behind the Sports Building (GOR); a culinary markets where teenagers and adults interact/gather at night; and private schools and colleges.

Besides being caused by a transmission hotspot in this area with a high distribution of PSP, the factor of the presence of referral services also causes the high number of PSP distribution. The Merdeka Health Center is the first service and a driving force for the HIV program in Palembang City, which affects the number of cases at specific service locations. A qualitative study conducted by Ramadhani SN[13], shows the factors that influence the number of patient referrals at the puskesmas including: the availability of human resources, standard operating procedures, completeness of facilities and infrastructure, types of medical indications, availability of drugs, and patient behavior.

If we compare the total distribution between the working area of the puskesmas and the hospital, this PSP distribution is mostly found in the puskesmas area while in the hospital area there is none. This is because PSP dominantly comes and prefers to do tests at the Puskesmas rather than the hospital. In the research conducted by Napitupulu[14] related with the most dominant factor influencing the use of VCT services in a puskesmas is the perception of seriousness. The perception of seriousness is often based on medical information or knowledge, it can also stem from a person's belief that he will get into trouble due to illness and will make or have an effect on his life in general. It is also mentioned in a study conducted by Purwaningsih and Misutarno[15] that it is known that high-risk people who use VCT at the puskesmas feel a strong seriousness towards HIV/AIDS, which is 78%. Another high-risk person, 13%, stated that they felt a very strong sense of seriousness.

Another factor is the availability of information. Research conducted by Sari et al[16], shows that respondents who access information about HIV/AIDS more regularly to conduct an HIV test than respondents who are slightly exposed to HIV/AIDS information sources. Sources of information that are mostly accessed by respondents about HIV/AIDS are through health workers, TV, peers and pimps, the internet, and the least information is obtained through radio, edutainment and research students. In the research conducted by Napitupulu[14], most of the respondents stated that they had received sufficient information about particular health services that provide VCT services; besides, their spouses, friends, and family also suggested using the VCT services of the

Puskesmas. Furthermore, easy access to health services that provide the VCT services and health workers at VCT services are competent, professional and able to maintain visitor confidentiality, and facilities at VCT services are complete so that respondents want to take advantage of health services at the Puskesmas are also factors that can affect utilization. VCT services at a public health center, coupled with some respondents who already have assisted populations, can encourage respondents to take advantage of health services at the Public Health Centers VCT services.

The absence of HIV-positive cases in the PSP key population in Palembang City certainly raises questions about whether there is indeed no positive PSPs in Palembang City or because of the lack of coverage of HIV testing in PSP that cases that should exist are not reported. During the Covid-19 pandemic, sex workers lacked interest in taking HIV tests due to economic constraints. Research conducted by Widiyanto[17] states that a lack of encouragement from families or other colleagues also causes the lack of access to HIV testing in the PSP population to carry out VCT. According to research[18] Female sex workers receive support from peers to prevent HIV/AIDS by always being reminded of the Voluntary Counseling and Testing (VCT) schedule, giving each other advice, admonishing each other, and supporting each other. Socially, FSWs infected with HIV often get stigma and discrimination from family, friends, co-workers, and the surrounding community.[19]

Another factor that made it possible that there were no positive PSP cases was PSP's sound knowledge of preventing HIV transmissions, such as using condoms and safe sex. A study conducted by Rismauli[20] stated that the majority of respondents used condoms when having sex with customers, namely people (71.4%); the rest stated that they did not use condoms, namely 24 people (28.6%). When viewing the respondents' answers, most respondents answered that they always recommended the condition that every customer have sex with a condom. This could have caused the minimum number of HIV positives in the PSP key population in Palembang City. The availability of condoms in rooms makes it easier to get condoms and can minimize customer reluctance to use condoms by reason of buying condoms far away. PSP can also easily convey their bargaining position to customers by offering condoms that are already available.[21]

The age affects a person's perception and thinking. In adulthood, individuals will play a more active role in social and community life, besides that people at this age will spend more time reading. Intellectual ability, problem-solving ability, and verbal ability are reported to show little or no decline at an early age.[22] This promiscuity carried out at the age of teenagers is one of the reasons they become sex workers. Based on the results of the study, the majority of PSP key populations are aged 25-49 years. At this age they are still in great demand by customers, and are not physically old enough, and PSP aged 36–45 years (late adulthood) psychologically they have decided to become PSP, because at that age the psychological adaptation response is maximal.[23] This is inconsistent with research conducted by Husnul Umam et al[24] which states that the majority

of people at high risk of HIV and AIDS are aged 17-25 years (late adolescence), but this is in line with research conducted by Hazairina et al[25] which states that the highest proportion is over 25 -49 years old, this is related to sexually active age. The highest national data on HIV/AIDS sufferers is in the 25-49 age group of 69%.

At the education level, the results show that the last education level of the PSP key population is the majority of high school graduates/equivalent. Education is a factor that influences a person's perspective on life, which in this case is health. People who have a high level of education tend to be exposed to sources of information.[24] A study conducted by Kambu et al[26], showed that there was no significant relationship between education level and HIV transmission prevention measures (p = 0.165). An educated person has better absorption and understanding of information, especially health information about preventing HIV transmission. In a society where the level of education is still low, the community has not participated in disease prevention and only looks for problems when the problem is real.[27] The level of individual and community education can affect the acceptance of health education. Therefore, socialization (communication, information, and education) on HIV/AIDS prevention must be adjusted to the level of public education.

In terms of job characteristics, the results showed that the majority of PSP's occupations were sex workers. Most of the reasons women work as PSPs are for economic reasons. A person who is pressed for economic needs can do everything he can to fulfill his needs, including being willing to serve customers without using condoms.[28] Risk behaviors such as sex without the use of condoms among PSP sexual partners are very detrimental to their reproductive health and can even transmit STDs so that they can contract HIV.

The limitations of this study are that the data obtained from HIV counselling and testing services in various working areas of Puskesmas, hospitals, and other services such as State Prisons and Women's Prisons obtained in this study are not fully accessible people who live in Palembang City. However, some people live outside the city of Palembang who use this service, so this research can be said to be based on health services in Palembang, not based on people who live in the city of Palembang.

Conclusion

Based on the results obtained through mapping with QGIS, it was concluded that the distribution of PSP in the working area of the public health center was the highest at 23 Ilir Health Center, Merdeka Health Center, and Kampus Health Center. There was no distribution of PSP key populations in the working areas of hospitals, state prisons, and women's prisons. Then, the distribution of HIV-positive cases in the PSP key population found no distribution of HIV confirmed cases in the working area of the public health center or the working area of hospitals,

state prisons, and women's prisons. It is hoped that health agencies can expand the scope of HIV testing by activating campaigns containing invitations to do HIV tests, especially PSP groups on social media, as well as directly through socialization in every public health center, and also targeting the number of HIV tests each month in all public health center and other HIV services evenly, with the aim of the existing cases can be known with certainty.

Acknowledgment

We want to thank the Palembang City Health Office and all parties involved in completing this research.

Funding

We have no funding for the research.

Conflict of Interest

We have no conflict of interest.

Reference

1. Kemenkes RI. Infodatin HIV AIDS. Kementeri Kesehat Republik Indones [Internet]. 2020;1–8
2. RI K. Estimasi Jumlah Populasi Berisiko Terinfeksi HIV Di Indonesia Tahun 2020. Populasi. 2020
3. UNAIDS. The GAP report 2014: Gay men and Other Men Who Have Sex With Men. Dementia [Internet]. 2014;1–14.
4. Kemenkes RI. Laporan Survei Terpadu Biologis Dan Perilaku 2013. Kementeri Kesehat RI. 2014;1–182.
5. Alexandra FD, Toemon AN. Hubungan Pengetahuan Tentang Hiv/Aids Dengan Sikap Dan Tindakan Penggunaan Kondom Pada Wanita Pekerja Seks Di Kota Manado. Jurnal Ilmu Sosial dan Politik [Internet]. 2014;15–20.
6. Maskuniawan, Azinar M. Faktor-Faktor Yang Berhubungan Dengan Praktik Tes Hiv Pada Waria Pekerja Seks Di Kota Semarang. JHE (Journal Health Education). 2018;3(1):7–16.
7. Kridawati A, Sriwitati JM, Cicilia W. Determinan yang berhubungan dengan pemanfaatan pelayanan tes hiv pada ibu hamil di bpm wilayah kerja puskesmas ii denpasar. Jurnal Bidan Ilmu Kesehatan. 2015;6 (2)(ISSN: 1693-6868):361–9.
8. S D de, JA L, W P. GIS for health and the environment: proceedings (IDRC). Srilanka; 1995.
9. Murtono D. Faktor Determinan Konsistensi Pemakaian Kondom Pada Pekerja Seks Perempuan. Jurnal Litbang Media Informasi Penelitian, Pengembangan dan IPTEK.

2019;15(1):27–38.

10. UNAIDS. The Gap Report 2014 on sex workers. 2014;14. Available from: http://www.unaids.org/en/resources/campaigns/2014/2014gapreport/gapreport
11. Tao X, Jiang T, Shao D, Xue W, Ye F, Wang M, et al. High prevalence of syphilis among street-based female sex workers in Nanchang, China. Indian Dermatol Online Journal. 2014;5(4):449.
12. Sari EP, Hargono A. Perbedaan tindakan penggunaan kondom wanita pekerja seksual langsung dan tidak langsung dalam pencegahan HIV di Sidoarjo. Jurnal Berkala Epidemiologi. 2015;Vol. 3:134–45.
13. Ramadhani SN. Analysis of Factors Causing High Referral Rates at Primary Health Center in the JKN Era: A Literature Review. Media Gizi Kesmas. 2020;9(2):57.
14. Napitupulu. Universitas Sumatera Utara Poliklinik Universitas Sumatera Utara. Jurnal Pembangunan Wilayah Kota. 2017;1(3):82–91.
15. Purwaningsih, Misutarno SNI. Analisis Faktor Pemanfaatan Vct Pada Orang Risiko Tinggi HIV/AIDS (Analysis Factor Related to VCT Utilization For The High Risk Person of HIV/AIDS. Jurnal Ners. 2011;6(1):58–67.
16. Sari NL, Kebidanan PD, Panca S, Bandar B. Determinan Perilaku Pemeriksaan HIV pada Wanita Penjaja Seks Langsung di Eks Lokalisasi Determinants of HIV Testing Behavior among Direct Female Sex Worker in Ex-Red-Light District. 2022;13.
17. Widiyanto SG. Faktor-Faktor Yang Berhubungan Dengan Praktik Wanita Pekerja Seks (WPS) Dalam VCT Ulang Di Lokalisasi Sunan Kuning , Semarang. 2008;169.
18. Sri N, G CS. Pengaruh Sikap, Dukungan Teman Sesama Wanita Pekerja Seks (WPS) dan Motivasi terhadap Perilaku Pencegahan HIV/AIDS. Jurnal Ilmu Kebidanan Indonesia. 2019;9(2):66–78.
19. Windiramadhan AP, Ibrahim K, Indramayu K, Barat J. Pengalaman Hidup Wanita Pekerja Seks (WPS) yang Terinfeksi HIV. 2020;12(2):169–82.
20. Rismauli D. Faktor-Faktor Yang Berhubungan Dengan Pemakaian Kondom Pada Wanita Pekerja Seksual (Wps) Di Wilayah Kerja Puskesmas Bandarbaru Kecamatan Sibolangit Tahun 2020. Jurnal Kesehatan Al-Irsyad. 2020;13(1):28–33.
21. Sianturi SA. Hubungan Faktor Predisposisi , Pendukung , dan Penguat dengan Tindakan Penggunaan Kondom pada WPS Untuk Pencegahan HIV / AIDS di Kabupaten Serdang Bedagai. Jurnal Precure [Internet]. 2013;1(April):1–7. Available from: https://www.neliti.com/publications/160204/hubungan-faktor-predisposisi-pendukung-dan-penguat-dengan-tindakan-penggunaan-ko
22. Erdianta. Karakteristik Demografi, Penggunaan Kondom, Dan Infeksi Menular Seksual (IMS) Pada Kelompok Lelaki Seks Lelaki (Lsl) Di Klinik Ims-Vct Veteran Medan Tahun

2015. Universitas Sumatera Utara; 2015

23. Khodijah UP, Dewi GO. Gambaran Wanita Pekerja Seks Di Hotspot Paseh–Tomo Sumedang. Jurnal Ilmiah Bidan [Internet]. 2020;5(1):1–11. Available from: https://e-journal.ibi.or.id/index.php/jib/article/download/119/89
24. Umam H, Dewi YI, Elita V. Identifikasi Karakteristik Orang Risiko Tinggi Hiv Dan Aids Tentang Program Pelayanan Voluntary Counseling And Testing (VCT). Jurnal Online Mahasiswa. 2015;2(1).
25. Hazairina SE, Setiawati EP, Amelia I. Hubungan Antara Karakteristik Klien Lsl Dengan Hasil Skrining Hiv Di Upt Puskesmas X Kota Bandung. Jurnal Sistem Kesehatan. 2018;3(3):103–10.
26. Kambu Y, Waluyo A, Kuntarti K. Umur Orang dengan HIV AIDS (ODHA) Berhubungan dengan Tindakan Pencegahan Penularan HIV. Jurnal Keperawatan Indonesia. 2016;19(3):200–7.
27. Nyoko YO, Putra IWGAE, Sawitri AAS. Hubungan Karakteristik Demografi, Klinis dan Faktor Risiko Terinfeksi HIV dengan Koinfeksi HIV/TB di Klinik Amertha Yayasan Kerti Praja Denpasar. Public Health Preventive Medicine Archive. 2014;2(2):95.
28. Arjianti, H.D YDPS. Konsistensi Penggunaan Kondom Untuk Pencegahan PMS Dan HIV Pada Wanita Pekerja Seksual. JHE (Journal Health Education). 2017;2(2):146–55.