

THE EFFECTIVENESS OF THE NEEDLE EXCHANGE PROGRAM ON THE SPREAD OF
SOCIAL DISEASES

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A Seminar Paper

Presented to

The Graduate Faculty

University of Wisconsin-Platteville

In Partial Fulfillment of the

Requirement for the Degree

Master of Science

in

Education

Adult Education

by

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5/18/2018

Abstract

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This paper looks at a serious problem in America: the continual spread of HIV, and other communicable diseases, and among IV drug users and the effectiveness of needle exchange programs in both addressing and lessening those problems (Holtzman, Barry, Ouellet, Des Jarlais, Vlahov, Golub, Hudson, & Garfein, 2009). Going forth in this paper the phrase “other communicable diseases” will be included in the all-encompassing term HIV unless specifically stated. In research regarding needle exchange programs it appeared other countries had contributed most of data, but in the past few decades the United States has been conducting studies as well (Degenhardt, Mathers, Wirtz, Wolfe, Kamarulzaman, Carrieri, Strathdee, Malinowska-Sempruch, Kazatchkine, & Beyrer, 2014). While most theories acknowledge the problem, there are still some theories that believe needle exchange programs do not lessen drug addiction or other social problems (Jenness, Hagan, Liu, Wendel, & Murrill, 2016).

Through evaluating research for this paper, the results show that there is evidence that confirms that Needle Exchange Programs (NEPs) are an effective approach for reducing the spread of HIV and other communicable diseases among IV drug users (Degenhardt, Mathers, & Wirtz, et.al. 2014). The underlying hypothesis of this paper concludes that IV drug users would prefer to use clean needles if available, thus reducing the likelihood of contracting HIV and other communicable diseases. As of late, the United States new data has been published due to the increasing spread of HIV in suburban communities and the escalating number of deaths among youth (Semaan, Fleming, Worrell, Stolp, Baack&, Miller, 2011).

Chapter One: Introduction

The Needle Exchange Program (NEP) was first introduced in 1984 in Amsterdam (Van den Hoek, Haastrecht, & Coutinho, 1989). The program was established by a drug-user company that was known as Junkies' Union that soon obtained adoption by the Amsterdam's Municipal Health Department. Since then NEP transform to a pillar of preventing the spread of HIV in IDUs. Since the beginning of 1980s, the NEP programs expanded globally and reached out to developing and developed countries (Van den Hoek, Haastrecht, & Coutinho, 1989). NEPs have consistently been associated with increase in social ills including HIV (Logan & Marlott, 2010). While the public remains suspicious over the effectiveness of such programs or whether it's a way to trap them, the government has continuously supported NEPs and even requires law enforcement agencies to allow such programs to operate independently without surveillance (Latkin & Forman, 2001).

The employment of empathetic workers has also allowed needle exchange programs to be a highly crucial component in the fight against the spread of HIV (Logan & Marlott, 2010). However, in the past ten years or so the face of the IV drug user has changed, due to the easy access of prescription narcotics, many of the IV drug users today are increasingly female, or white and middle-income addicts (Van den Hoek, Haastrecht, & Coutinho, 1989). The questions on how this new group can best be served remains to be solved. Nevertheless, such questions as; should needle exchange programs be expanded to include areas outside of urban central cities? Will these communities be receptive? Will there be a backlash against existing programs? Because of these unanswered questions, I believe it is important to study the effectiveness of needle exchange programs from a perspective of seeing how it potentially affects different demographic groups in Milwaukee County and other Southeastern Wisconsin counties.

These questions will guide me to ensure I do not wander off topic. The ethical, moral and legal discussions and debates continue to ensue over whether to establish and maintain needle exchange programs (NEPs) in the United States or abroad (Ksobiech, 2004). Those who oppose these programs request evidence or proof of the effectiveness of the programs. Moreover, most of these opponents fear that the establishment and increased coverage of NEPs has the effect of increasing the use of drugs, discarded needles, crime and threats to the public health. Nevertheless, the major goal of the NEP program is to offer clean needles for IDUs, with other services that vary depending on the location and structure of a program (Josiah, Francis, & Macalino, 2012). Such other services include provisions of safer injection equipment (sterile water, cookers, bleach, cotton), testing and counselling on HIV, and sometimes primary clinical care. NEPs types vary from mobile and fixed sites NEPs, local and state government-sponsored programs, activist-organized NEPs, and community-based NEPs. (Josiah, Francis, & Macalino, 2012).

Each of these programs are aimed at reducing HIV incident rates. In this study, I intend to investigate the effectiveness of the NEPs programs in combating the spread of HIV incident rates. The latest CDC estimates on new HIV infections incidences in the United States indicate serious health problems, with an estimated 47,500 people becoming newly infected with the virus in the United States in 2010 (Center of Disease Control Center, 2016). According to the CDC report HIV incidence rates among adults and adolescents in the United States between 2007–2010 has increased significantly. HIV incident rates has remained relatively stable at about 50,000 infections per year since the mid-1990s (Center of Disease Control Center, 2016). According to the new analysis, there were 53,200 infections in 2007; 47,500 in 2008; 45,000 in 2009; and 47,500 in 2010 (Center of Disease Control Center, 2016).

Certain groups, including African Americans, Latinos, and gay and bisexual men of all races/ethnicities, continue to be disproportionately affected by HIV. In the United States, more than half a million people have died of AIDS. To date, an estimated one million people are living with HIV, HIV incidences continue at a steady rate of 40,000 infections per year. Although not everyone has access to care, effective treatments and intervention measures have helped HIV infected people to live longer (Brienza, Stein., Chen, Gogineni, Sobota, Maksad, & Clarke, 2000). Due to the reduction of HIV related deaths coupled with the continuing number of new HIV infections, HIV/AIDS prevalence is at its highest level ever, and continues to rise each year (Center of Disease Control Center, 2016).

Men who have sex with men (MSM) remain the largest population predisposed to the HIV. However, HIV transmission in this population has decreased from 64% of total cases in 1985 to 42% in 2004. This reduction in infection rate can be attributed to effective HIV prevention programs for MSM. In contrast, the number of cases due to drug use continues (AIDs Information, 2016). There are an estimated 1.4 million injection drug users (IDUs) in North America. While drug injection use is directly related to HIV infection, sexual behaviors of IDUs and those who have sex with IDUs contribute indirectly to high HIV incidence rates. HIV transmission can occur among IDUs when injecting equipment is shared. This includes injecting drugs with a “dirty” (previously used by another IDU) syringe, as well as sharing other injection paraphernalia such as water, cookers, cotton, and spoons, or drug preparations (Koester, Glanz & Baron, 2005).

In addition to sharing injecting equipment, HIV infection occurs among IDUs through unprotected sex. High-risk drug use behaviors and high-risk sexual behaviors are often linked to increasing risks of HIV infection (NIDA, 2015). HIV has been around for over 35 years and has

been primarily associated with homosexual behavior and IV drug users (National Institute of Health, 2008). IV drug use and HIV have serious national health implications; both have been addressed through a variety of approaches including harm reduction (Logan & Marlatt, 2010); (Semaan, Fleming, & Worrell, et.al. 2011). When underground syringe exchange programs began cropping up in the late 1980s, fear was the rule. The AIDS virus was out of control, as was the debate surrounding how to combat it in a world of drug addiction. There were those who believed that making all drugs legal was the answer – that way users would feel more comfortable seeking out clean supplies and getting tested for diseases (Logan & Marlatt, 2010).

At the other end of the spectrum were the religious leaders, politicians and some skeptics in the medical and social science fields who favored the existing tactics of rehabilitation and incarceration for dealing with drug use (Semaan, Fleming, & Worrell, et.al. 2011). Over the last 35 years, the incidence of IV drug use has increased although the rate of new HIV infections has decreased, due to the advent of antiviral drugs (Jenness, Hagan, & Liu, et.al., 2011). The continuing research into the effectiveness of various harm reduction approaches, including needle exchange programs, is intended to demonstrate that these methods to reduce the likelihood of becoming infected with HIV in the IV drug using population (Degenhardt, Mathers & Wirtz, et al., 2014).

Statement of the Problem

The following questions will be among the issues addressed in this research paper. Because persons with HIV and IV drug issues are often looked as marginalized members of society, it is often a problem to start up NEPs and keep them running without interference from law enforcement or shut down from lack of funding or neighborhood pressures. Is a needle exchange program an effective approach to reducing the spread of HIV? Will the advances in treating HIV

reduce the motivation for addicts to utilize harm reduction programs such as the needle exchange program? And finally, will the funding for needle exchange programs be affected, possibly increased and become less stigmatized now that HIV and IV drug use has spread to the suburbs?

Definition of Terms

AIDS-AIDS is the most severe phase of HIV infection. People with AIDS have such badly damaged immune systems that they get an increasing number of severe illnesses, called opportunistic infections (Center of Disease Control Center, 2016).

Harm reduction (or harm minimization)-is a range of public health policies designed to lessen the negative social and physical consequences associated with various human behaviors, both legal and illegal. (WHO, 2014).

HIV-Human Immunodeficiency Virus, commonly known as HIV, is a virus that affects the immune system by destroying white blood cells known as CD4 cells. These cells are responsible for fighting disease. The reduction of CD4 cells prevents a person's body from fighting infections. HIV is a lifelong disease for which there is currently no cure. However, the virus can be controlled with proper medical treatment (National Institute of Health, 2011).

Methadone Maintenance: Methadone is a medication used in medication-assisted treatment (MAT) to help people reduce or quit their use of heroin or other opiates. Methadone works by changing how the brain and nervous system respond to pain. It lessens the painful symptoms of opiate withdrawal and blocks the euphoric effects of opiate drugs such as heroin, morphine, codeine, and semi-synthetic opioids like oxycodone and hydrocodone (Logan, & Marlatt ,2010)

Purpose of the Study

This study hopes to provide insight concerning HIV prevention needs for IDUs. By determining the needs of this population, the quality and availability of HIV prevention services will improve the quality of life, and ultimately decrease and/ or prevent the spread of HIV infection caused by injection drug use. Needle exchange programs have consistently been associated with an increase of social ills including but not limited to HIV. While the public remains leery, thereby making funding them adequately politically difficult, law enforcement has largely been permitting them to function, without surveillance, as long as there are no problems that affect the areas where the programs are located. As a result, employing empathetic workers, has allowed needle exchange programs to be a highly useful component in the fight against the spread of HIV (Logan & Marlott, 2010). However, in the past ten years or so the face of the IV drug user has changed, due in large part to the easy access of prescription narcotics many of the IV drug users today are increasingly female, and or white and middle-income addicts. How will this new group best be served? Should needle exchange programs be expanded to include areas outside of urban central cities? Will these communities be receptive? Will there be a backlash against existing programs? Because of these unanswered questions, it is important to study the effectiveness of needle exchange programs from a perspective of seeing how it potentially affects different demographic groups (Neaigus, Zhao, Gyarmathy, Cisek, Friedman, & Baxter, 2008).

The Significance of the Study

HIV incident rates are rising creating attention on the findings of how prevalent drug abuse is (Center of Disease Control Center, 2016). The IV drug user of today is quite different from the IV drug user of the past – no longer primarily the domain of older, central city resident.

The significance of this study is to demonstrate that drug abuse and associated diseases have now spread into the suburbs and to identify research on possible solutions that has affected this epidemic. This means that we should no longer assume what previous research has found in other locations and how this is applicable. As the evolution of the IV heroin user changes, needle exchange programs and the transmission of HIV continue to change. Therefore, we need to find out if the lessons learned are still applicable and if any new findings are helpful to fight the spread of HIV among IV drug users. Nevertheless, there exists certain challenges when it comes to conducting this research. Understanding limitations of this research is a good step to realize where improvements should be made.

Delimitations of Research

Both IV drug users and people with HIV have been historically difficult to reach as far as providing them with helpful social services (Bowles, Clark, & Tai, et.al, 2008). The stigma associated with both groups makes them reluctant to self-identify (Des Jarlais, McKnight, Goldblatt, & Purchase et.al, 2009). This makes targeting them for harm reduction efforts difficult and suggests a need for a multi-faceted approach (Wolfe, Carrieri, & Shepard, et.al. 2010). There have not been many studies that focus primarily on those previously thought to be at lesser risk for both HIV and IV drug use (Hurley, Jolley, et al., 2007).

Method of Approach

A qualitative case study approach was used. (Radloff, 1977). Data collection methods included: Documentation collection and archival record retrieval along with research methods using various data bases and peer reviewed articles. IDUs represented a wide range of demographic variables, which included: People of both genders, a variety of sexual orientations, ethnicities, educational levels, incomes and employment statuses were studied, none of these

variables appeared to be a distinct indicator of increased HIV infection risk. Factors indicative of higher risk for infection sex-worker occupations and lower-income areas, the mode and frequency of use, and the type of drug used. HIV prevention needs included substance abuse treatment; harm reduction services (clean syringes, educational outreach, free HIV and Hepatitis C testing, and social service organizations); and HIV prevention information.

Barriers to accessing and implementing services included lack of funding; prohibition or discouragement of services by state and federal laws; stigma and discrimination; and lack of agency networking. Recommendations for closing gaps between needs and services included: Better communication between agencies and HIV prevention services; Researching options and formulating plans for gaining access to clean syringes to all communities in need; Formulating a plan for substance abuse treatment funding and Hepatitis C services; Ensure continued HIV prevention information distribution through media campaigns and other educational interventions; and Ensure the continued harm reduction services (Neaigus, Zhao, Gyarmathy, Cisek, Friedman, & Baxter,2008).

Chapter Two: Review of Related Literature

Background

In the 1920s, the primary approach to IV drug users was a criminal justice approach targeting smugglers, dealers, and users (Recovery, 2011). During the 1960's the incidence of IV drug use escalated and the criminal justice approach was seen as having limited results as IV drug use reached middle America, leading some to call for a less punitive approach that included methadone maintenance (Logan, & Marlatt, 2010). Although controversial, the documented successes of methadone maintenance programs led some to call for increased harm reduction methods in reducing the social problems related to IV drug use (Semaan, Fleming, & Worrell, et.al., 2011). The advent of Methadone Maintenance programs in the 1970s also produced much research on harm reduction approaches, and the introduction of HIV and the related public scare resulted in additional related research. The fear of HIV infection fueled the fire to address this social problem in the early 1980s (Vlahov & Junge, 1998). This led to studies trying to determine the best way not only to serve those IV drug users who were already HIV+ but also the best way to reach this population before they became infected (Logan & Marlatt, 2010). While research indicated that needle exchange programs, if done properly, could be effective, there were additional studies that looked at the obstacles faced in the implementation of these programs (Ksobiech, 2003).

Obstacles such as public opinion, lack of funding and the desire to maintain a law and order approach. Other research looked at evaluating any changes in public opinion and if there would be support for expanding existing efforts or in implementing programs where none had previously existed (Archibald, Strathdee, Sutherland & O'Shaughnessy, 1998). The Federal Government continues to look at current trends in drug use including different drugs, methods of

use, and who is using them (National Institute of Health ,2008). However, it is important to review the events that lead to the formation of NEPs.

Formation of Needle Exchange Programs

With the introduction of HIV in America, there was an initial fear that led some to call the measure as extreme as social isolation (Kaplan & Heimer, 1992). As public awareness of the transmission of AIDS increased it became clear that addressing risky behaviors, including IV drug use, was key to reducing the likelihood of infection (Wolfe, Carrieri, & Shepard et.al.,2010). As research implied the effectiveness of overseas NEPs in reducing HIV and other diseases transmitted through needle sharing, many in America advocated for using that approach in America (NCHI, 2009). Methadone Maintenance programs in New York were shown to reduce a variety of social problems including crime, drug use and disease transmission (Jenness, Hagan, & Liu, et.al., 2011). Some studies showed that a variety of approaches, including NEPs, methadone maintenance and dispersal of safe sex products was correlated with the reduction of the spread of HIV (Hurley, Jolley & Kaldor, 2007); Semaan, Fleming, & Wolfe et.al., 2011).

Benefits of Needle Exchange Programs

Some supporters used research findings to call for an expansion of NEPs (Strathdee et. al, 1997). As found in a research study by Logan and Marlatt (2010), NEPs can be a referral source in the future for those addicts who come to seek treatment and are correlated with the clients reducing risky sexual behaviors through the distribution of condoms. Studies indicate that on a broad level needle exchange programs reduced many social context risk behaviors (NCBI, 2009). As the research showed the societal benefits of research programs, public opinion became less negative but still generally unfavorable, hindering funding and further implementation (Wolfe, Carrieri, & Shepard, 2010). Nevertheless, NEPs provide the benefit of protecting the public from

the spread of HIV and other infections that can be transmitted in this way. Also, the programs provide a means of disposing unclean syringes and avoid the risks it could pose to sanitation if such were to be disposed in the streets (Schechter, et. al, 1999). According to Doherty, et., al., (2000), NEPs have had great social implications on community issues.

Impact on Social Disease and Community Problems

Although these studies indicate the profile of IV drug users has changed significantly over the past decade, there is no direct research as to the rates of HIV or how HIV prevention efforts, including the needle exchange program, affects this new group of IV drug users. HIV has been around for about 35 years and has been associated with IV drug users since that time (National Institute of Health, (2008). As both IV drug use and HIV have serious national health implications, both have been attempted to be addressed through a variety of approaches including harm reduction (Logan & Marlatt ,2010) ;(Semaan, Fleming, &Worrell, et.al.,2011). Over the last 35 years the incidence of IV drug use has increased although the rate of new HIV infections has decreased (Jenness, Hagan, & Liu, et.al. 2011). There has been much research into the effectiveness of various approaches, including needle exchange programs, to reduce the incidence of HIV in the IV drug using population (Bowles, Clark, & Tai, et.al., 2008).

Implementing rapid HIV testing in outreach and community settings has contributed to an advancing HIV prevention demonstration project conducted in seven US cities. This article deals with getting those involved in high-risk behaviors tested for HIV to reduce its spread. The testing is located at various sites including needle exchange programs. This authors position is to show that the needle exchange program reduces HIV transmission not only by giving clean needles but also by making those unaware that they are HIV+ realize that they can potentially transmit it to others. Also, the study show that needle exchange programs can be a referral source to treatment

providers, further reducing the likelihood of HIV infection (Des Jarlais, McKnight, & Goldblatt, et.al. 2009). This paper addresses varied harm reduction efforts and examine their comparative effectiveness. It also addresses best practices in implementing the needle exchange program. It is the intention of this author to demonstration them positive results of the needle exchange program when different methods of getting clean needles to IV drug users are used. It is known that some methods are more successful in reaching HIV users than other IV (Degenhardt, Mathers &Wirtz, et al., 2014).

A positive step is made, when law enforcement agencies convene with public health responses, and health-seeking behavior and health services (Wolfe, Carrieri, & Shepard, 2010). There is much difficulty in reaching HIV+ IV drug users in part because of their lifestyle and because of the stigma of both HIV and being an IV drug user. There is also needing to realize the co-morbidity of other drug use and mental illness and the problems they pose in reaching these potential clients. This article may be helpful in looking at the barriers involved in getting IV drug users to use prevention programs in general and the needle exchange programs. This can specifically shed light on why the needle exchange program may be the most effective way of engaging this population group (Hurley, et al 2007).

Associated Problems and Results

Both IV drug users and people with HIV have been historically difficult to reach as far as providing them with helpful social services (Bowles, et. al., 2008). The stigma associated with both groups makes them reluctant to self-identify (Des Jarlais, et. al., 2009). This makes targeting them for harm reduction efforts difficult and suggests a need for a multi-faceted approach (Wolfe, Carrieri, & Shepard, 2010). By the 1920s, the primary approach to IV drug users has been criminal justice approaches targeting smugglers, dealers, and users (Recovery,

2011). During the 1960's the incidence of IV drug use escalated and the criminal justice approach was having limited results as IV drug use reached middle America, leading some to call for less punitive approaches that included methadone maintenance (Logan, & Marlatt, 2010). Although controversial the documented successes of methadone maintenance programs led some to call for increased harm reduction methods in reducing the social problems related to IV drug use (Semaan, Fleming, & Worrell, et.al. 2011).

With the introduction of HIV in America, there was an initial fear response that led some to call for measures as extreme as social isolation. As public awareness of the transmission of AIDS increased it became clear that addressing risky behaviors, including IV drug use, was key to reducing the likelihood of infection (Wolfe, Carrieri, & Shepard, 2010). As research implied the effectiveness of overseas needle exchange programs in reducing HIV and other diseases transmitted through needle sharing many in America advocated for using that approach in America (NCBI, 2009). Methadone Maintenance programs in New York were shown to reduce a variety of social problems including crime, drug use and disease transmission (Jenness, Hagan, & Liu, et.al.,2011); (www.iog.fsu.edu (2009)). Research showed that a variety of approaches, including needle exchange programs, methadone maintenance and dispersal of safe sex products was correlated with the reduction of the spread of HIV (Hurley, Jolley & Kaldor,2007); (Semaan, Fleming, &Worrell, et.al., 2011).

Some supporters used the research to call for an expansion of needle exchange programs. As found in a research study done by Logan, & Marlatt (2010), needle exchange programs can be a referral source in the future for those addicts who come to seek treatment and are correlated with the clients reducing risky sexual behaviors through the distribution of condoms. Studies indicate that on a broad level needle exchange programs reduced many social context risk

behaviors (NCBI, 2009). As the research showed the societal benefits of research programs public, opinions became less negative but still generally unfavorable, hindering funding and further implementation (Wolfe, Carrieri, & Shepard et.al.,2010) ;(www.uchaps.org).

Effectiveness of Needle Exchange Programs with Different Demographic Groups

Needle exchange programs in New York were utilized primarily by male, low-income people of color who showed a reduction of risky behaviors correlated with HIV transmission (NCBI, 2016). The needle exchange outreach was almost always done in low-income areas that may have deterred the more affluent from participating in such programs (UCHPS, 2012). Needle exchange programs employed street workers from the community, usually former IV drug users who were credible with those they were serving (JSPHPH, 2006). The utilization of these workers may have hindered the participation of more affluent IV drug users (JSPHPH, 2006). Some programs offered a safe place to inject the drugs in addition to supplying clean needles with the effectiveness of such approach difficult to quantify (Drugwarfacts, 2012).

Questions Unanswered by Previous Research

There haven't been any studies that focused primarily on those previously thought to be at lesser risk for both HIV and IV drug use (Hurley& Jolley, et al., 2007). Will the lack of funding to change IV drug use and ensure less stigmatization, will the issue with HIV users be solved? (Wolfe, Carrieri, & Shepard, et.al. 2010). Will the advances in treating HIV reduce the motivation for addicts to utilize harm reduction programs such as the needle exchange program? (Wolfe, Carrieri, &Shepard, et al., 2010). How does Methadone Maintenance programs complement NEPs? Such questions would be discussed broadly later in the research. However, it is critical to look at Methadone Maintenance programs and their origins.

The introduction of Methadone Maintenance programs began in 1970s and is attributed to broad research studies on harm reduction approaches, the spread of HIV and related public care concerns (Bastos, & Strathdee, 2000). The fear of HIV infection fueled the fire to address this social problem in the early 1980s (Hurley, Jolley, et.al, 2007). New studies began and were quickly initiated trying to determine the best way not only to serve those IV drug users who were already HIV positive, but also the best way to reach this population before they became infected (Logan & Marlatt,2010). While research indicated that needle exchange programs, if done properly, could be effective (Josiah, Francis, & Macalino, 2012), there were additional studies that looked at the obstacles faced in the implementation of these programs (Ksobiech, 2004). Obstacles such as public opinion, lack of funding and the desire to maintain law and order approach are amongst the obstacles that faced the initial stages of development of these programs (Ksobiech, 2004). Other research looked at evaluating any changes in public opinion and if there would be support for expanding existing efforts or in implementing programs where none had previously existed (Van den Hoek, Haastrecht, & Coutinho, 1989).

The Federal Government continues to look at current trends in drug use including different drugs, methods of use, and who is using them (National Institute of Health, 2008). Although many studies indicate the profile of IV drug users has changed significantly over the past decade (Center of Disease Control Center, 2016), there is no direct research as to the rates of HIV or how HIV prevention efforts, including the needle exchange program, affects this new group of IV drug users (Bastos, 2000). HIV has been around for about 35 years and has been associated with IV drug users since that time (National Institute of Health, 2008).

As both IV drug use and HIV have serious national health implications, both have been attempted to be addressed through a variety of approaches including harm reduction (Logan &

Marlatt,2010); (Semaan, Fleming, &Worrell et.al., 2011). Over the last 35 years, the incidence of IV drug use has increased although the rate of new HIV infections has decreased (Jenness, Hagan, & Liu et.al.,2011). There has been much research into the effectiveness of various approaches, including needle exchange programs, to reduce the incidence of HIV in the IV drug using population (Bennett, 2011).

Chapter Three: Conclusions and Recommendations

Conclusions

Needle exchange programs can help in preventing the spread of HIV. Offering an opportunity to dispose used needles or syringes in a safe way. This also comes with an opportunity to educate and inform IDUs on the implications of engaging in drugs and susceptibility to infections such as HIV. Nevertheless, there is a compelling and substantial evidence showing that the utilization and availability of sterile injection equipment for IDUs hedges down the spread of HIV. Whereas the public remains suspicious that it is an intention to arrest them, these centers have multiple benefits. The Federal government decided to support the programs without law enforcement involvement to prevent the spread of HIV due to fear of not wanting to come out and change the needles. Therefore, support from the government plus the use of endogenous workers has allowed needle exchange programs to be a highly useful tool in the fight against the spread of HIV. However, in the past ten years or so the face of the IV drug user has changed, due to easy access of prescription narcotics many IV drug users are female from white and middle-income levels.

While it is critical to understand and strategies on how to assist this group, it becomes difficult to fully understand which factions of the population are mostly in need of such programs and why. In this regard, we can ask ourselves several questions. Should needle exchange programs be expanded to include areas outside of urban central cities? Will these communities be receptive? Will there be a backlash against existing programs? Because of these ever-changing factors, I believe it is important to study the effectiveness of needle exchange programs from a perspective of seeing how it potentially affects different demographic groups in Milwaukee County and other Southeastern Wisconsin counties.

The epidemiology and study components encompassing this topic are noteworthy for some causes. It is urgent to address the epidemiologic nature of HIV and the populations that it mostly affects and the reasons for the large incidences on that population. Many studies have been conducted in attempts to invent best methods to prevent the spread of HIV. One of the prevention measures has been the invention and establishment of the needles exchange program. In its initial stages of initiation, only few US states supported this program while majority criticized it that it resulted to increased IDUs. Nevertheless, following a heavy criticism and skepticism over the program, epidemiologists chipped in and framed policy debates on the efficacy of the program in combating the epidemic. The data prepared and offered by these epidemiologists shifted popular and political opinions regarding the effectiveness of the program in countering the spread of HIV.

The basis of the science on the program was instituted on factors such as evaluation of real and feasible options to combating the situation, critical epidemiological research of the problem, generation of studies and hypotheses depending on the underlying concerns of those who make policies. In this case, epidemiologists were often drawn beyond detached observations to become advocates of a despised and disenfranchised population in order to improve the public's health. As a profession, epidemiologists need to advocate for openness, even when unpopular, for scientific investigation and evaluation when the root of the issue is protection of the public's health (Vlahov, Des Jarlais, Goosby, Hollinger, Lurie, Shriver, & Strathdee, 2001).

Recommendations

Along with my suggestion on how to improve the access and coverage to sterile syringes, many literature findings indicate that there is a room for improvement. Currently, the majority studies focus on the effectiveness of NEPs while ignoring alternatives to syringe access.

Therefore, studies should be conducted to determine NEPs coverage and the number of IDUs who need them in both developed and developing countries. To bolster such a case, longitudinal studies should be conducted to investigate such incidences. Research must also be done to establish the type of programs and their structural elements that are relevant in reaching out to populations who are at risk. Such populations include, men having sex with men, young IDUs, prisoners, and sex workers.

However, it is important to improve NEPs not just by scant justification of their existence, but also through reporting on how many needles have been returned or distributed. In order to view evidence that NEPs can produce positive results, one need only to look to the Southwest. As of 2017, in Las Vegas, Nevada, IV Drug users can get free kits (with clean needles and syringes) from vending machines through a new pilot program called Trac-B Exchange, which was started by Harm Reduction Center of Las Vegas. Health officials hope that the approach will help prevent hepatitis, HIV, and other illnesses spread by discarded dirty syringes and needles, as well as encourage participants to enter drug treatment programs. Drug users first must obtain an eight-digit code (their birthday) to access a vending machine. Hospitals use similar machines to dispense medications, cardiac test kits, and other supplies and track inventory. The vending machines dispense a free kit with 10 syringes and needles, tourniquets, bandages, alcohol, filters, and condoms. The machines confidentially monitor drug use. A registered user is allowed two kits weekly. To get another kit, clients must place the used needles in a special compartment of the vending machine. If they don't exchange needles, they won't get a new kit. This reduces the number of contaminated needles discarded in parks, streets, and public bathrooms that can infect other people as well as pets. The return rate of syringes, a marker of effectiveness, has been steadily increasing since the program inception (Potera,2017).

Communication and coordination with the NEP research community should be done so that there is a high amount of co-operation transpiring in order to compare different studies that can ultimately reveal a common trend or pattern. In as much as there is a promising future of these programs, it is critical that governmental and private organizations weigh-in and support research aimed at improving the operation of these programs.

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