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Do needle exchange programs cause more harm to injection drug users and compromise the safety of the communities in which they are in place?

Amber L. Payne
Apayne0625@gmail.com

DO NEEDLE EXCHANGE PROGRAMS CAUSE MORE HARM TO INJECTION DRUG USERS AND COMPROMISE THE SAFETY OF THE COMMUNITIES IN WHICH THEY ARE IN PLACE?

Needle Exchange Programs (NEP) are put in place in regions in the US, where illegal injectable drug use is prevalent, in order to decrease the amount of blood borne diseases by at least 10%, such as Hepatitis C and Human Immunodeficiency Virus (HIV), being spread throughout the drug-using community. People and Healthcare Professionals in these communities have questioned if NEPs have caused more harm to the drug users and if they have compromised public safety due to incorrect disposal of syringes.

During a study in 2011, the spread of blood borne diseases in areas where NEPs were present, decreased among people who used injectable drugs. Slowing the spread of these diseases kept the public safe. In 2018, Huntington, WV, had a HIV outbreak with 14 people infected and by January 2020, 82 people had contracted HIV. This event caused the public to be more cautious about needles lying around and had people wondering if they had contracted HIV.

The purpose of this research is to analyze if Needle Exchange Programs, in the United States, reduce the amount of blood borne diseases transmitted among injection drug users and to assess the community safety in which they are located. The working hypotheses is that Needle Exchange Programs, in the United States, help reduce the amount of blood borne diseases which are spread throughout the drug community and to assess the community safety where these programs are located.

The intended methodology for this qualitative research is a literature review and a semi-structured interview via online survey.

INTRODUCTION

Needle Exchange Programs (NEP) are put in place in regions in the US, where illegal injectable drug use is prevalent, in order to decrease the amount of blood borne diseases by at least 10%, such as Hepatitis C and Human Immunodeficiency Virus (HIV), being spread throughout the drug-using community. People and Healthcare Professionals in these communities have questioned if NEPs have caused more harm to the drug users and if they have compromised public safety due to incorrect disposal of syringes.

In 2016, there were 38 states, which included the District of Columbia, where NEPs are legal. Within these legalized states, there are 320 NEPs. NEPs have been controversial for years. These controversies come from people being concerned for the overall public safety, even though there are several medical studies which explained how NEPs decrease the spread of blood borne diseases. In some cases, legislative got involved in the decisions of whether to continue NEPs due to public safety.

It was not until 2015, when Senators Shelley Moore Capito and Mitch McConnell and Representative Hal Rogers pushed for these programs to be more readily available to the injectable drug users in the regions of the US, where drug use and blood borne diseases were on the rise. In the midst of the opioid epidemic, communities needed to try to help injectable drug users, as much as possible, so NEPs and Narcan distribution and training became more prevalent in these regions. Narcan (naloxone) was the drug that was FDA approved for the treatment of opioid overdose for people in communities where the opioid epidemic was prevalent. In efforts to educate injectable drug users, there was a surge of NEPs. Every year numbers fluctuated on how many NEPs were still running due to the controversy in the regions, in which, they were ran. Kanawha-Charleston Health Department was an example of this. The program started in

2015, but was shut down in 2018, even though they were having an 80% needle return rate. It was cancelled due to concerns revolving around community safety.

In 2018, Huntington, WV, had a HIV outbreak with 14 people infected and by January 2020, 82 people had contracted HIV. This event caused the public to be more cautious about used needles lying around and had people wondering if they had contracted HIV. This HIV concern kept the community concerned because HIV can be contracted through many ways, not just used needles. The other ways is through sexually transmitted, saliva, or even through an open wound.

Community safety has been a concern and community members wondered if NEPs were really working, due to finding used needles in public These needles have been being found on playgrounds, sidewalks, window sills, and other public areas. Members of the communities have been concerned for children's safety because children do not understand what needles were and would pick anything up so there was the possibility of a needle stick, which would have possibly transmitted diseases to the children. Receiving a disease from a needle stick was the main reason of concern for the public, even just a small accidental stick could transmit HIV and Hepatitis.

In 2011, the opioid epidemic was becoming prevalent in the US. Doctors would prescribe opioids and the patients would become addicted and then eventually start taking heroin instead of prescribed control substances. In the midst of the opioid epidemic, many communities struggled with what to do to keep their communities safe and to reduce the transmission of blood borne diseases among the injectable drug users. The opioid epidemic was occurring in all parts of the US but mostly in rural areas. The US started the War on Drugs and unfortunately it backfired. There were many clinics created to reduce the amount of opioids addicts were on, but the

physicians running these clinics quickly realized they could make more money if they kept giving addicts what they wanted. This created more over doses in rural areas and people who were addicted to opioids, started using injectable drugs. Once the addicts started using injectable drugs, they started sharing needles, which ultimately, increased the transmission of blood borne diseases.

METHODOLOGY

The primary hypothesis of this research was: Needle Exchange Programs, in the United States, has helped to reduce the amount of hepatitis and HIV. A secondary hypothesis was: Needle Exchange Programs, in the United States, effected community safety where these programs were located.

The methodology for this study was a qualitative study using mixed methodologies which were literature review and a Semi-Structured Interview. This literature review was performed and guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram (Figure 1), in four stages: 1) Identification and collection of literature; 2) Establish inclusion and exclusion criteria; 3) Literature analysis; 4) Semi structured interview.

Step 1: Identification and collection of literature

Peer-reviewed literature and research articles were located using Marshall University's PubMed and Google Scholar research databases. The electronic databases of PubMed and Google Scholar were used. The searched key words were 'needle exchange program' or 'needle exchange program and blood borne diseases' and 'needle exchange' or 'community safety' or 'needle exchange safety' or 'effects of needle exchange' or 'opioid epidemic' and 'needle

exchange program'. Relevant articles were selected for the research after a close review of the abstracts and results. The reputable websites and databases, Kaiser Family Foundation, Opioid & Health Indicators Database, were also used. A total of 109 sources were reviewed.

Step 2: Establish inclusion and exclusion criteria

All the articles collected from the search were subject to the inclusion and exclusion criteria and were excluded if they did not meet the inclusion criteria (N=28). The criteria for inclusion of information on if needle exchange programs reduce the number of transmitted hepatitis and HIV among injectable drug users and if these programs compromised public safety was any scholarly website or article, publication, or reports published between 2011 and 2021, included information gathered about the United States, and was in the English language.

Step 3: Literature Analysis

Once the author had a reasonable quantity of literature that was relevant to this research, a thorough review of the literature was performed. A total of 28 articles were reviewed of which 13 were used in introduction and 16 were used in the results. The knowledge gained from the research was used to report on the findings.

Step 4: Semi-Structured Interview

There was also a semi-structured interview with community members of Huntington, West Virginia evaluating their knowledge and feelings towards the Cabell-Huntington Health Department's Needle Exchange Program was performed. When discussing the results of the interview the participants was identified by "the Huntington community".

The author of this paper, conducted a semi-structured interview in the form of an online anonymous survey which was IRB approved. This was done through www.surveymonkey.com, a website which collects surveys and analyzes them. The topic of the survey was to collect data from the Huntington community on how safe they felt knowing that Cabell-Huntington Health Department had a Needle Exchange Program in place.

Step 5: Conceptual Framework

This literature review followed the path of the research framework adapted by Niemeijer and De Groot (2008) (Figure 2). This framework demonstrated the relationships between Needle Exchange Programs (NEPs), reduction of hepatitis and HIV in injectable drug users, and the community's sense of safety due to these programs.

The literature search and semi-structured interview was conducted and analyzed by AP and validated by AC.

RESULTS

Slowing the Spread of Blood Borne Diseases in Injectable Drug Users

During a study in 2011, the spread of hepatitis and HIV in areas where NEPs were present, decreased among people who used injectable drugs. The authors found that the US has the second highest number (1.5 million) of injectable drug users in the world behind China, (1.6 million). Where NEPs are prevalent, there was about a 10% decrease of Hepatitis C and HIV being transmitted via injectable drug users sharing needles.

During a 2015 study, the authors found that the injectable drug users participated in and NEP in Baltimore, Maryland, decreased from having a 99% return rate of needles to 85% return rate. The authors found that when this decrease happened, there was a 15% increase in the number of HIV cases. The main reason why there was a decrease in the return rate on used needles, was because of police making arrests at NEP sites, knowing the participants would have drug paraphernalia on them.

Rural counties have developed NEPs in their areas to help reduce the number of diseases being transmitted. The authors of a 2020 study found that Scott County in Indiana, had great success at decreasing the amount of transmitted diseases due to needle sharing. Proactive implementation reduced incidents by 90.3% and one year after the program had started, it decreased incidents by 60.8%.

Whether NEPs located in rural or urban areas, they have reduced the amount of hepatitis and HIV being transmitted between injectable drug users. The studies produced the outcomes of significant reductions. Blood borne diseases being contracted through used needles in the drug communities became a public health issue due to putting people's lives in danger.

Public Safety Concerns of Needle Sticks

According to a 2011 study, authors found that in Georgia, needle sticks and the transmission of diseases was occurring by children finding used needles on the street, sidewalk or playground and the children deliberately stick each other playing "doctor". There were 46 cases studied and 25 out of the 46 (54.4%) cases were children finding used needles in public. This was alarming and resulted in the NEP to be discontinued.

In 2019, during an election, Virginians voted on different solutions to their injectable drug problem. It was found, that 80% of Virginians voted for there to be more treatment centers for the injectable drug users, 69% agreed to half-way houses being built in their communities, and less than 50% voted for a NEP, which could help stop the spread of diseases because of sharing needles amongst one another.

In Boston, MA between 2015 and 2017, there were 4,763 needles in public. Of the 4, 763 needles found, 78.3% were found within 0.6 of a mile from methadone clinics, safe needle deposit sites, homeless shelters, or hospitals. The authors made it more evident that safer needle deposits were needed, whether it was relocating the return boxes or making a better effort. This was happening more in urban areas and officials need to evaluate possible solutions.

Semi-Structured Interview

The results of this survey were on different sides of the spectrum. There were a total of 30 (n=30) surveys completed. The ages ranged from 18 to 65, with the majority of participants, n=11, (36.67%) being in the 35-44 age bracket. Twenty-six (86.67%) respondents were aware of the NEP in Huntington.

When it came to the participants' knowledge on how NEPs work, 15 participants (50%) knew the basic concept of them but only ten participants (33%) knew the reasoning of NEPs were for harm reduction and disease control. The survey asked if the Huntington community felt like their safety was compromised because of the NEP. Nine (30%) participants did feel like it compromised their safety but on the contrary four (13%) participants explained how the NEP makes them feel safer in Huntington.

Comments from the participants who do not feel safe stated, "I just feel like passing out needles puts more on the streets." Another participant explained, "The illegal drug problem does. Especially the organized crime parts of it and the strung-out user looking for an easy mark for their next score. The needle exchange does make it more convenient for a user so it's probably attracting some more users than there would be otherwise but it's probably a small number."

One participant who felt safer stated, "Generally speaking, the only time I have been approached to either buy drugs, asked if I sell drugs, or been threatened was on or near the main campus at Marshall or on site at the Marshall University School of Pharmacy. It was so bad there that I no longer felt comfortable walking to the gas station, plus having spotted drug paraphernalia near the MUSOP building I feel much safer at the needle exchange program location versus attending classes." Another participant said, "The needle exchange program makes me feel safer knowing that some of the active drug users care enough about themselves and their community to participate in the program to help stop the spread of disease."

It seemed the Huntington community was more concerned with finding used needles on the sidewalks, play grounds, streets and even in grocery stores in the area. The most shocking findings were six (20%) participants picked up used needles to discard them off the streets or playground areas without proper PPE, seven (23%) participants called an authority figure or building manager to dispose of the found used needle and 16 (53%) participants left it alone.

The results of the anonymous survey further proved the literature review that there are multiple views of NEPs throughout communities in the United States. Some community members are for it and some are against it. The author noticed that the participants who are for

NEPs are in the healthcare field and realized this in their explanations in the survey. They would openly state they were a nurse, provider or pharmacist.

DISCUSSION

Throughout the literature reviews, it was found that NEPs did decrease the number of blood borne diseases being transmitted from injectable drug users sharing needles. It was also found that this is a very political topic which revolves around the public safety and the different concerns that community members pose for the safety of themselves and the children in those communities.

Needle Exchange Programs (NEPs) were controversial and created tension even on the political fronts. The results found during this research supported the hypotheses of this paper through literature reviews and a semi-structured interview. The research proved that communities, in the United States, still needed to find something that would work for the injectable drug users but would still make their community, as a whole, feel safe.

The hypothesis of this research was Needle Exchange Programs, in the United States, help reduce the amount of blood borne diseases which are spread throughout the drug community and to assess the community safety where these programs are located. Based on the results found during the literature review, proved that NEPs do reduce the amount of blood borne diseases within the injectable drug user community. However, upon further research on NEPs compromising community safety was inconclusive due to a mix of results. Some community members felt it effected their safety while others did not.

Summary of Results

It was found that in Baltimore, Maryland NEPs had a 99% needle return rate. This quickly decreased to 85% when police started arresting injectable drug users when they were dropping the used needles into the bins. The authors found that when this decrease happened, there was an increase in the number of HIV cases.

This study alone shows that NEPs do reduce the amount of blood borne diseases that are transmitted by sharing needles.

In Indiana, the NEP used proactive implementation which reduced incidents by 90.3% and one year after the program had started, it decreased incidents by 60.8%. This further proved, that NEPs did decrease the amount of blood borne diseases that were transmitted between injectable drug users and without these programs, communities would suffer.

Authors found that in Georgia, needle sticks and the transmission of diseases was occurring by children finding used needles on the street, sidewalk or playground and the children deliberately stick each other playing “doctor”. There were 46 cases studied and 25 out of the 46 (54.4%) cases were children finding used needles in public, which resulted in the NEP being discontinued.

STUDY LIMITATIONS

This research was not done without study limitation. The research for this paper was primary conducted through literature reviews. The biggest limitation was not finding enough literature to review about public safety and NEPs. This would have been extremely helpful to

have to determine if NEPs compromise the safety of the public. Other limitations was the survey that was conducted. The author of this paper feels more research should have been conducted prior to creating and getting the survey questions approved. More in depth questions would have helped this study tremendously.

This study was also limited to using online references only. These references came from Marshall University's PubMed and Google Scholar research databases. The searched key words were 'needle exchange program' or 'needle exchange program and blood borne diseases' and 'needle exchange and community safety' or 'needle exchange safety' or 'effects of needle exchange' or 'opioid epidemic and needle exchange program'. The reputable websites and databases, Kaiser Family Foundation, Opioid & Health Indicators Database, were also used. There was no evidence of research bias found during the literature review.

PRACTICAL IMPLICATIONS

This research has provided a couple practical implications that could be used in the community and NEPs. The first would be to ensure the injectable drug users are protected from being arrested when they are exchanging their used needles. When word gets around that arrests are being made then the exchange rates will go down. The second implication is educating the public on how NEPs work. The majority of the Huntington Community knew a little about NEPs but not extensively and were not comfortable with one being in Huntington. Education is key and how we change the stigma associated with NEPs.

CONCLUSION

In conclusion, the hypothesis that NEPs do reduce the number of blood borne diseases was correct. The reason is due to the NEPs injectable drug users would have clean needles and would not need to share as frequently with other injectable drug users who could possibly be carrying one of the blood borne diseases, such as HIV or hepatitis. Unfortunately, the hypothesis that having a NEP in a community compromises public safety was inconclusive. The reason is because with the survey, there were mixed feelings on how the community's safety was effected by NEPs.

Although in some research, it was proven that dirty needles posed as a safety concern for the public in general. However, further research on NEPs and arrests happening near the exchange sites would be interesting to continue to explore and to research possible laws that pose some sort of protection for the injectable drug users exchanging the needles.

APPENDIX

Figure 1: Overview of literature evaluation as per PRISMA approach

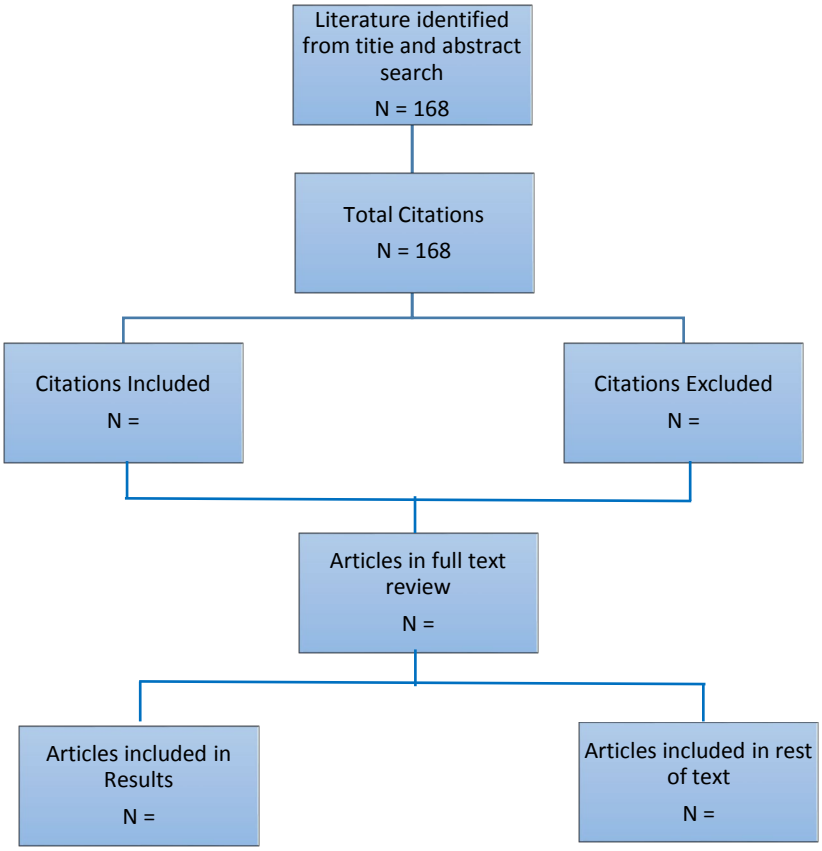

Figure 2: Conceptual framework demonstrating the relationship between NEPs, injectable drug users and the public's safety