

Effectiveness of Needle Exchange Programs in Aiding IV Opioid Use Cessation

Introduction/Background

- The cessation of opioid drug use can be challenging for those that may not have the appropriate access to community health programs that help reduce the incidence of drug use.
- Needle exchange programs, or NEPs, were created in 1983 to decrease needle sharing and reduce rates of HIV transmission (ACLU, 2021)
- NEPs work to provide access to sterile needles, provide drug screening for bloodborne pathogens, and provide resources for cessation of IV drug use (CDC, 2019).
- We aim to explore the cessation of opioid use among NEPs users.

PICO Question

“Of those in the homeless population that suffer from IV opioid use disorder, what is the rate of achieving sobriety with the use of needle exchange programs, in comparison to those who do not utilize this resource, over the course of one year.”

Methods/Search Strategy

- Comprehensive analysis of studies ranging between the years of 1993 and 2021.
- Databases used in this search are as follows: Google Scholar, PubMed, NCBI, CINAHL, and Cochrane Review.
- Literature contained information from various perspectives regarding the impact of NEPs which supported the use of best practice in answering our PICO question.

Results/Table of Evidence

| Title of Article & Author/s | Level of Evidence | Major Findings |
|--|-------------------|---|
| Drug abuse treatment success among needle exchange participants.-- Brooner et al., 1998 | Level III | <ul style="list-style-type: none"> 51% of NEP users were admitted to methadone treatment programs and showed positive responses, which were comparable to non-NEP groups. NEPs can reach a broader range of IV drug users as 42% users had no history of opioid agonist therapy. |
| Needle exchange programs and drug infection behavior.-- DeSimone, 2005 | Level I | <ul style="list-style-type: none"> NEPs will be more effective in cities where they have more potential clients and thus can have a larger public health impact. |
| Effectiveness of needle and syringe Programmes in people who inject drugs - An overview of systematic reviews.-- Fernandes et al., 2017 | Level I | <ul style="list-style-type: none"> The effectiveness of the NEP correlates with the program's availability to needles, therapists and additional treatment options. In addition, the effectiveness of the NEP was found to be dependent on the program's ability to reach its community through outreach programs. While IVDA increases risk for blood-borne pathogens, HIV and HCV in particular, NEPs provided a vast impact on user decision-making and needle sharing. |
| Needle exchange and injection drug use frequency: a randomized clinical trial- Fisher et al., 2003 | Level II | <ul style="list-style-type: none"> There was a greater decrease in opioid reduction on follow up drug tests in comparison to amphetamine reduction. There was a higher reduction in opioid usage in those who were assigned to NEPs vs pharmacy sales and education. |
| Evaluating needle exchange: are there negative effects?- Guydish et al. 1993 | Level III | <ul style="list-style-type: none"> In non-needle exchange areas in SF, there were a greater change in admissions reporting IV drug use from 1988 to 1990 (1.4% NEP vs 4.2% non-NEP) There were also a greater frequency of injections reported in those living in non-needle exchange areas from 1988 to 1990 (8.2% NEP vs 14.4% non-NEP) |
| Cessation of injection drug use and change in injection frequency: the Chicago Needle Exchange Evaluation Study.-- Huo, D., Bailey, S. L., & Ouellet, L. J., 2006 | Level III | <ul style="list-style-type: none"> One-sixth of the recruited participants stopped injection drug use on average for 16 months. The frequency of injection drug use decreased by 12% per year throughout the study period, 1997 - 2000. Older IDUs were less likely to engage in injection drug use cessation than younger IDUs but older IDUs were more likely to decrease drug use frequency. |
| Benefits of concurrent syringe exchange and substance abuse treatment participation.; An observation of lower rates of drug use over time in community syringe exchangers.; Treatment initiation strategies for syringe exchange referrals to methadone maintenance: A randomized clinical trial.-- Kidorf et al., 2011, 2013 & 2018 | Level I | <ul style="list-style-type: none"> Participants enrolled in treatment groups reported fewer drug using days and overall drug use days in comparison to their baseline. No-treatment groups also reported a decrease in the amount of drug using days while enrolled in the NEP; however, the number of opioids injected overall did not decrease. Treatment enrolled participants had a greater reduction in illegal activities and incarceration in comparison to non-treatment groups. The number of days a participant was enrolled in the NEP, regardless of what kind of additional treatment they received, correlated with the success of opioid cessation. The more days a subject was enrolled, the greater success in opioid reduction was achieved. |
| Needle exchange program utilization and entry into drug user treatment: is there a long-term connection in Baltimore, Maryland.-- Latkin et al., 2006 | Level II | <ul style="list-style-type: none"> Those who utilize NEPs are likely to enter drug treatment programs. Rapport built between staff of NEPs and PWID indirectly leads to a higher likelihood treatment will be sought out. |
| Comparison of 1-year substance abuse treatment outcomes in community syringe exchange participants versus other referrals.-- Neufeld et al., 2008 | Level III | <ul style="list-style-type: none"> SEP referrals used more opioids and cocaine, had greater baseline frequency of substance and injection drug use, and younger age. They were less likely to complete 1 year treatment (35% NEP vs 56% non-NEP). |
| The value of harm reduction for injection drug use: A clinical and public health ethics analysis.-- Vearrier, L., 2019 | Level II | <ul style="list-style-type: none"> Drug addiction is compulsive, and patients lose autonomy therefore, promoting autonomy is considered a vital factor when treating addiction. To promote autonomy, one does not force drug treatment or abstinence but rather put control back into the patient's hands. methadone maintenance has been demonstrated to decrease deaths related to heroin use. |
| Patterns of injection drug use cessation during an expansion of syringe exchange services in a Canadian setting.-- Werb et al., 2013 | Level II | <ul style="list-style-type: none"> There was a significant increase in the proportion of IDUs reporting injection drug use cessation during the 15-year study period. Throughout the study, it was observed that with the increase in the number of NSPs available in Vancouver there were increasing rates of drug cessation. The availability of NSPs does not contribute to the delayed cessation of injection drugs but rather improves cessation rates. |

Conclusions

- NEPs were successful in reducing bloodborne pathogen transmission via IV drug use (CDC, 2019).
- NEPs can act as a bridge to treatment and did not contribute to an increase in injection use.
- Cessation among those utilizing NEPs in the US, as an independent variable, is not measurable with available evidence.
- Opioid use cessation requires a multimodal approach to be successful.

Recommendations

- Urgency is needed in addressing IV opioid epidemic.
- Further studies are needed to conclude efficacy of NEPs in relation to rates of cessation in the homeless population.
- Providers should take a step-wise approach and encourage patients who are ambivalent in starting drug treatment to consider NEPs.
- In addition to NEPs, supplemental approaches such as support groups and/or behavioral counseling can have vast benefits.
- Providers should also have training on destigmatizing substance abuse.

References

- American Civil Liberties Union (ACLU). (2021). *Needle Exchange Programs Promote Public Safety*. <https://www.aclu.org/fact-sheet/needle-exchange-programs-promote-public-safety#13>
- Syringe Services Programs (SSPs) FAQs | CDC. (2019, May 23). CDC. <https://www.cdc.gov/ssp/syringe-services-programs-faq.html>

