

Fentanyl Testing Strips as a Harm Reduction strategy: Proposal for Future Research

Erin Keenan and Natalie Sirignano | Professor: Dr. Timmesha Butler

Abstract

The presence of fentanyl is becoming more prevalent as various illicit drugs have been laced with this fast-acting opioid that is 50-100 times stronger than morphine, making it extremely deadly due to its potency and difficulty to detect without fentanyl test strips. The purpose of this poster presentation is to discuss the need for a quantitative research study that explores if the implementation of fentanyl test strips (FTS) will decrease accidental overdoses. There have been record breaking overdose rates in NYC, most of which have been linked to unknown fentanyl consumption. Fentanyl test strips are small pieces of paper that can detect the presence of fentanyl in various types of drugs. The act of lacing or combining substances with fentanyl is done to bulk up supply and increase revenue. The consumer of the substance will not be aware of this change, unknowingly increasing their chances of a fatal overdose. By using these test strips as a form of harm reduction, people who use drugs (PWUD) can do so in the safest manner possible without unknowingly increasing their risk of a fatal overdose, likely decreasing the rates of accidental fatal fentanyl overdoses. In the poster presentation, we will discuss how a longitudinal study in New York City over five years can provide valuable insight into the current fentanyl crisis, with the use of FTS as an important form of harm reduction.

Design and Measurement

- We chose to use an exploratory longitudinal study. An exploratory study aims to investigate a new topic, methodology, method of data collection, and relationships by looking at relationships for the first time or looking at previously explored relationships in a new population (Bora Pajo, 2018).
- The data would be collected from hospitals, death records, police and ambulance stations, harm reduction and addiction service centers, and data regarding overdoses from the New York City Department of Health and Mental Hygiene.

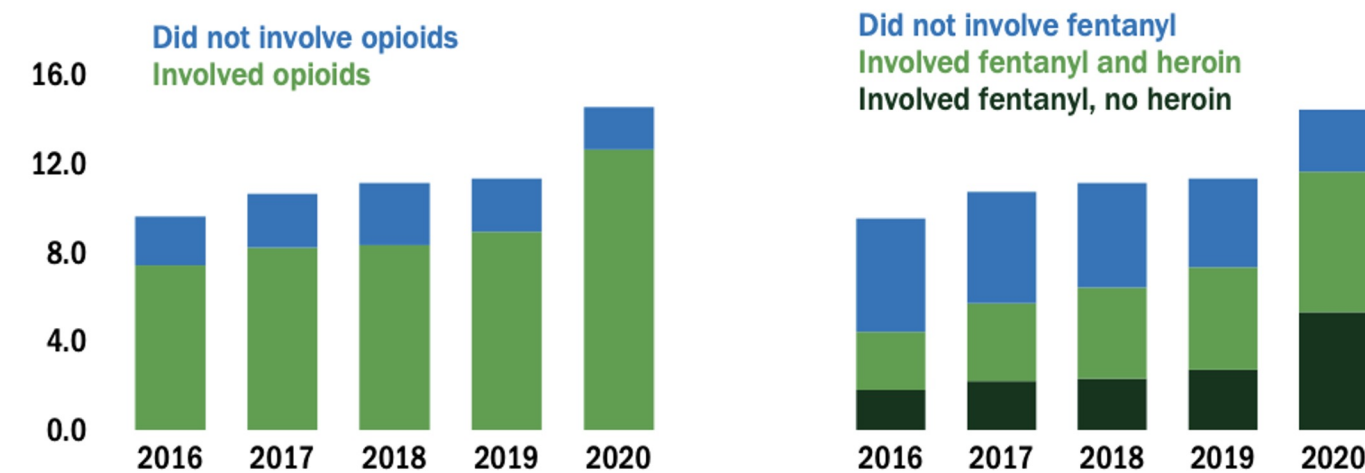
Sampling

- Non-probability purposive sampling would be used for this study.
- FTS would be placed in areas where people who use drugs visit frequently to target the desired population.
- There will be no limit on age or how many people use the FTS. Participants will have the choice of whether or not to use the FTS, thus maintaining informed consent.
- Confidentiality would be maintained as the overdose records would not contain any means of identification.

Literature Review

- In 2021, there were 2,668 overdose deaths in NYC, 80% of which involved fentanyl (New York City Department of Health and Mental Hygiene, 2023).
- Fentanyl testing strips are an inexpensive method of testing drugs for the presence of fentanyl. FTS works by placing an allotted amount of the drug in a container with water and mixing them, then placing the test strip inside for 15 seconds, letting it sit for 2-3 minutes, then reading the results (Centers for Disease Control and Prevention, 2022).
- In 2015 fentanyl entered the illicit drug market in New York City, which then increased the overdose death rate to 13.6 per 100,000. Furthermore, between 2015 and 2017, New York City saw an increase in overdose deaths by an astounding 55%, the largest increase since the first reports in 2000 (Colon-Berezin et al., 2019).

Sharp increase in cocaine-involved deaths with greater share involving fentanyl
Rate of cocaine-involved unintentional drug poisoning (overdose) death, per 100,000 residents, by substances involved, 2016-2020



Other substances may be present unless otherwise specified.
Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2016-2020; 2020 data are provisional and subject to change.

Data Analysis

- To analyze the data we would be using a simple regression analysis. In this scenario the dependent variable would be the rate of overdoses and the independent variable would be the amount of FTS that are implemented and where they are implemented in direct relation to the areas that we took data from.
- We would also do a simple regression analysis using the data from before the FTS was implemented.
- We would be able to look at the line graph produced and see if the points from before and after the implementation if there was a decrease in the overdose rate.

Past Research

- Survey data collected by the NYC DOHMH (2018) found that most heroin users were not actively seeking out fentanyl and were not aware of the presence of it in the heroin they used.
- Researchers analyzed urinary samples of PWUD in NYC to assess the unintentional prevalence of fentanyl, and 34.6% of those samples contained fentanyl, while 67% of the individuals were surprised at their fentanyl-positive urinalysis, further emphasizing the need for easily available fentanyl test strips (Martinez, et al., 2020).
- An analysis of 1 million people's urine between 2013 and 2018 found an 1850% increase in fentanyl in people who use cocaine (Han et al., 2019). This further implies that the increase of fentanyl in the illicit drug market is a leading factor in the surge of cocaine-related fatal overdoses.

Why is this important?

- Many PWUD are unaware that they could potentially be consuming fentanyl
- By implementing FTS, people who use drugs can do so in the safest manner possible without unknowingly increasing their risk of a fatal overdose
- Harm reduction strategies such as FTS can save lives and protect the health of both PWUD and their communities.
- Past research has shown that harm reduction strategies have proven beneficial to both individual and public health by preventing overdose deaths (National Institute on Drug Abuse, 2022).

References

- Bora Pajo. (2018). *Introduction to research methods : a hands-on approach*. Sage.
- Centers for Disease Control and Prevention. (2022, September 30). *Fentanyl Test Strips: A Harm Reduction Strategy*.
[www.cdc.gov/stopoverdose/fentanyl-test-strips.html#:~:text=Fentanyl%20test%20strips%20\(FTS\)%20are](https://www.cdc.gov/stopoverdose/fentanyl-test-strips.html#:~:text=Fentanyl%20test%20strips%20(FTS)%20are)
- Colon-Berezin, C., Nolan, M. L., Blachman-Forshay, J., & Paone, D. (2019). Overdose Deaths Involving Fentanyl and Fentanyl Analogs — New York City, 2000–2017. *MMWR. Morbidity and Mortality Weekly Report*, 68(2), 37–40. <https://doi.org/10.15585/mmwr.mm6802a3>
- Han, Y., Yan, W., Zheng, Y., Khan, M. Z., Yuan, K., & Lu, L. (2019). The rising crisis of illicit fentanyl use, overdose, and potential therapeutic strategies. *Translational Psychiatry*, 9(1). <https://doi.org/10.1038/s41398-019-0625-0>
- National Institute on Drug Abuse. (2022, October 26). *Harm Reduction*. National Institute on Drug Abuse. <https://nida.nih.gov/research-topics/harm-reduction#:~:text=Decades%20of%20research%20have%20shown>
- New York City Department of Health and Mental Hygiene. (2021). *Unintentional Drug Poisoning (Overdose) Deaths in New York City in 2020*. <https://www.nyc.gov/assets/doh/downloads/pdf/epi/databrief129.pdf>
- New York City Department of Health and Mental Hygiene. (2023). *Unintentional Drug Poisoning (Overdose) Deaths in New York City in 2020*. <https://www.nyc.gov/assets/doh/downloads/pdf/epi/databrief133.pdf>
- Martinez, S., Jones, J. D., Brandt, L., Campbell, A. N. C., Abbott, R., & Comer, S. D. (2020). The Increasing Prevalence of Fentanyl: A Urinalysis-Based Study Among Individuals
- New York City Department of Health and Mental Hygiene. (2018). *Unintentional Drug Poisoning (Overdose) Deaths Involving Heroin and/or Fentanyl in New York City, 2000-2015*. In NYC.gov. <https://www1.nyc.gov/assets/doh/downloads/pdf/epi/databrief74.pdf>
- Schneider, A., Hommel, G., & Blettner, M. (2010, November). *Linear regression analysis: Part 14 of a series on evaluation of Scientific Publications*. *Deutsches Arzteblatt international*. Retrieved March 23, 2023, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2992018/>