

# STASH 12(1) - Drug of choice? Changes in opium use as a function of the price of hash

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What influences population drug use patterns? We often think that drug use is just a function of the properties of drugs, and how drugs make people feel. However, other factors, such as new drug opportunities, public perceptions of drugs, and drug availability and affordability might also affect broad trends. To explore these ideas, Siddharth Chandra and Madhur Chandra looked at the historical consumption of legalized opiates as a function of their price, the price of cannabis, and wage/income and discovered a surprising relationship. This week's STASH reviews [their study](#).

## **What was the research question?**

How do wages and drug prices relate to legal opiate consumption in the general population?

## **What did the researchers do?**

The researchers analyzed opium consumption data from 23 districts of Punjab, British India,<sup>1</sup> as a function of changes in the price of opium, the price of cannabis (hash and leaf), and wage/income, during a time when these drugs were legal (1907-1917).<sup>2</sup>

## **What did they find?**

Drs. Chandra and Chandra found that as hash became more expensive, people were more likely to use opium, as shown in Figure 1. This suggests a "cross price" relationship, where changes in use of one drug are best predicted by changes in the price of a different drug. Chandra and Chandra also found that opium consumption wasn't associated with its own price, the price of cannabis leaf, or with wage/income.

## **Why do these findings matter?**

Because they discovered a cross-price, but not an own-price relationship with opium consumption, the researchers suggest that some users might have used opium as a substitute for hash. In other words, cannabis users might have turned to opioids when the price of their “drug of choice” went up. These findings are interesting because although many people might tend to think that the properties of drugs alone drive decisions to use, the reality is more complicated. Zinberg’s “[Drug, Set, and Setting](#)” hypothesis similarly suggests that drug use is a function not only of the drug (i.e., the chemical effect of the substance) but also the “set” (i.e., the individual’s unique mindset) and the “setting” (i.e., the external environment, including factors like drug price and availability). The involvement of other drug prices in drug use trends could mean that drug use—and perhaps addiction—is driven by a combination of factors beyond even those currently addressed in research on the subject.

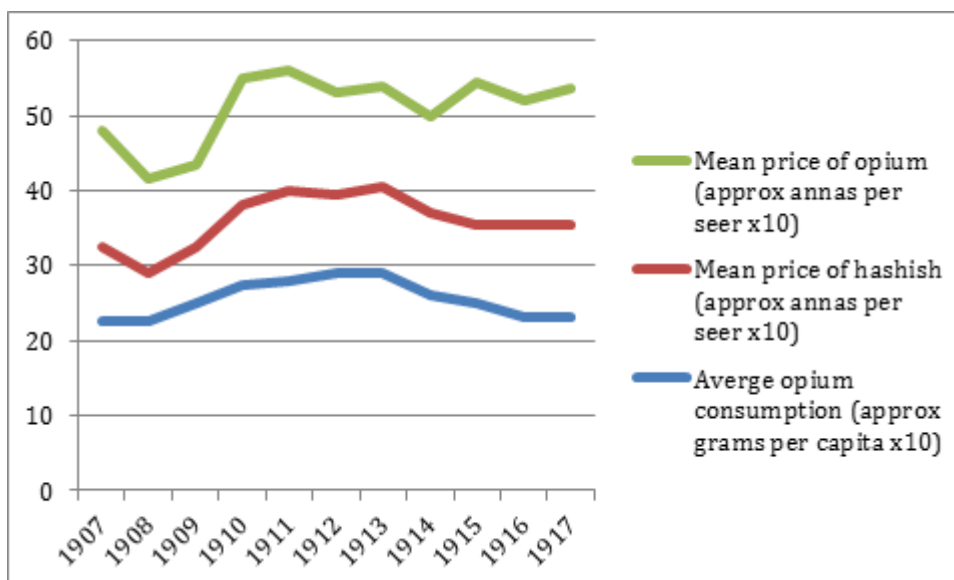


Figure. Visual representation tracking annual opium consumption and real price of hashish and opium from 1907-1917 in Punjab, British India. Approximated from original study data in Chandra & Chandra (2015). Note: We could not include wage data. Click image to enlarge.

### **Every study has limitations. What were the limitations in this study?**

The study’s data is from India during the beginning of the 20<sup>th</sup> century, and the findings could be specific to economic characteristics of that period, as well as culturally specific. Further, the study uses aggregate data, so it is not able to causally explain population-level drug use or individual-level behavior, like drug choice.

**For more information:**

If you or a loved one struggles with drug use or addiction and would like more information please visit our website [here](#).

— Emily Shoov

*What do you think?* Please use the comment link below to provide feedback on this article.

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[1] The number of individuals included in the different models ranged between 229 and 252.

[2] The researchers used annual excise reports, annual reports on Prices and Wages in India, crop reports from the Punjab Department of Land Records and Agriculture, and the censuses of Punjab.