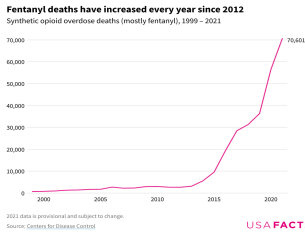


## Background



USAfacts.org. (2023). Fentanyl deaths have increased every year since 2012. Are fentanyl overdose deaths rising in the US? Retrieved May 30, 2023.

- Fentanyl, a potent synthetic opioid, is 50-100 times stronger than morphine. This epidemic is a major cause of adult deaths (ages 18-45), often due to unknowingly consuming fentanyl-laced drugs. Just 2 mg can be lethal, resulting in 56,000 deaths in 2021. A single exposure can lead to fatal overdose, posing a critical public health concern requiring immediate attention.

## Objectives

- To investigate the association between awareness of fentanyl and reported fentanyl use among college-aged students, with a focus on determining if exposure to fentanyl influences drug use behavior.
- To assess the knowledge levels of college-aged students regarding the fentanyl epidemic, including their understanding of potency and delivery methods associated with fentanyl.
- Hypothesis: exposure to the rising fentanyl epidemic is positively associated with drug use, knowledge, and behaviors among college-aged students in Southern California.

## Methods

- In May 2023, a cross-sectional observational study was conducted among college and university students in California.
- The research measures the association between:
  - Exposure: the fentanyl epidemic
  - Outcome: drug use, knowledge, and attitudes among college-aged students in California
- The drug awareness module, designed as a Qualtrics survey, was distributed to BSPH senior capstone students and made accessible to UCSD and other Southern California college students through various online and offline channels.
- A total of 148 students participated in the study.
- Data analysis and prevalence calculations were performed using Microsoft

## References

- USAfacts.org. (2023). Fentanyl deaths have increased every year since 2012. Are fentanyl overdose deaths rising in the US? Retrieved May 30, 2023, from <https://usafacts.org/articles/are-fentanyl-overdose-deaths-rising-in-the-us/>.
- Ridhi Vyas, Kaylin Bailey, Niraj Vyas & Peggy Compton (2023) College students' knowledge about opioids and implications for the opioid crisis, Journal of American College Health, 71:1, 147-153, DOI: [10.1080/07448481.2021.1881102](https://doi.org/10.1080/07448481.2021.1881102)

## Results & Discussion

While 95% of respondents reported 'Yes' to having heard of the term 'fentanyl' before, the following results assess the extent of their knowledge and how it may impact drug use and behaviors...

### Descriptive Statistics

Figure 1. Respondents' level of informed knowledge of the current fentanyl epidemic.

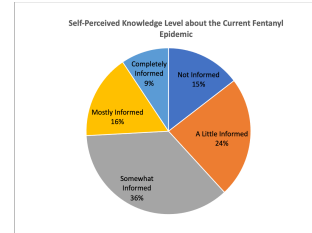


Figure 2. "In your opinion, how likely are college students to test their substances for fentanyl prior to use?"

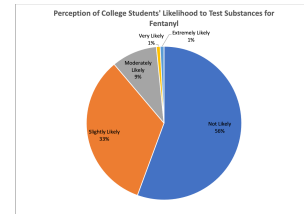
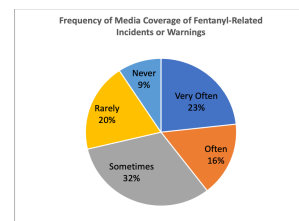


Figure 3. This figure displays the frequency to which respondents witness media coverage of the fentanyl epidemic.



### Associations & Comparisons

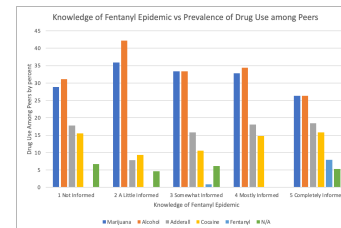


Figure 4. The respondents' perception of college students' likelihood to test substances for fentanyl before using them is compared to their perception of the percentage of students who may encounter fentanyl during their college years.

- Participants who hold the belief that college students are highly likely to test substances for fentanyl also tend to estimate higher rates of fentanyl exposure among students.

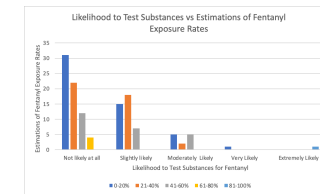


Figure 5 explores whether there is an association between individuals' knowledge about the fentanyl epidemic and the prevalence of drug use, including fentanyl, among their peers at their university.

- Reported involvement with fentanyl is generally low across all levels of knowledge.
- The highest reported involvement with fentanyl is among those who are completely informed.

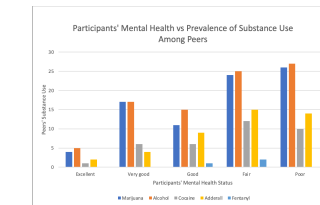


Figure 6 examines whether there is a relationship between individuals' self-perceived mental health and the prevalence of drug use, including marijuana, alcohol, Adderall, cocaine, and fentanyl, among their peers.

- Individuals with "fair" and "poor" self-reported mental health statuses tend to have more peers participating in usage of marijuana, alcohol, and cocaine compared to those with "excellent" and "very good" self-reported mental health statuses.

The study results are subject to the following limitations...

Incomplete Respondent Data	• Some respondents didn't answer all the questions leaving gaps in the data
Indirect Assessment of Personal Drug Use	• We couldn't directly ask participants about their personal drug use, which limits the ability to estimate the true prevalence of some variables.
Recall Bias	• The data may be susceptible to recall bias as respondents might have difficulty accurately recalling information from the past 30 days as asked in some survey questions.

## Conclusions

- Despite most participants having heard of fentanyl, a significant percentage answered incorrectly when asked about its potency and delivery. Also, a substantial portion of participants reported limited knowledge about the fentanyl epidemic, even though they frequently encountered media coverage related to fentanyl warnings or incidents. This discrepancy indicates a lack of true understanding of the dangers and implications associated with fentanyl.
- Our study also revealed potential risk factors related to mental health and quality of life. Figure 6 shows participants with poorer reported mental health and quality of life statuses exhibited higher exposure to peers using substances like Adderall and cocaine. Additionally, these individuals were more likely to believe that college students are not likely to test substances before use. These findings suggest that college-age students' relationship with the fentanyl epidemic lies more in their potential exposure to fentanyl-laced substances, rather than direct fentanyl usage.
- Our hypothesis regarding the association between knowledge about the fentanyl epidemic and drug use among college-aged students was partially supported. Figure 4 illustrates individuals with limited knowledge demonstrated higher involvement with substances such as Adderall, cocaine, and fentanyl among peers, indicating a potential link between lack of awareness and drug use. Conversely, higher levels of knowledge were associated with reduced Adderall consumption, suggesting a protective effect of knowledge. However, individuals completely informed about fentanyl reported the highest involvement with the substance, challenging the assumption that knowledge alone deters use. While previous research has suggested that knowledge acts as a protective factor against substance use, our findings challenge this notion by highlighting the complex relationship between knowledge levels and drug involvement.

## Policy Implications

- Our research suggests that universities in Southern California should not only prioritize educating college students about the severity of fentanyl and fentanyl-laced substances, but also work toward implementing comprehensive harm-reduction strategies such as providing easily accessible naloxone and fentanyl testing kits. These interventions are crucial in mitigating the risks of overdose and death among college students affected by the fentanyl epidemic.