

Assessing the Gap in Medication Disposal Education for Pharmacy Students in California

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Abstract

A recent study of 898 randomly selected California pharmacies found that less than half were able to provide accurate and complete information regarding medication disposal safety.[1] This sizable gap in patient education is a reason for concern, as improper medication disposal may contribute significantly to opioid misuse and the growing threat of antibiotic resistance. The principal objective of this study is to determine whether the gap in medication disposal knowledge can be attributed to the education provided in California PharmD programs. An anonymous, voluntary Qualtrics survey will be distributed to pharmacy interns currently enrolled in a PharmD program in any of thirteen California pharmacy schools to gauge students' level of training and knowledge of medication disposal. Student survey responses will be assessed for correlation between confidence/correctness and length/type of training received via Chi-square analysis.

Introduction

As the last line of defense before patients take their treatment into their own hands, pharmacists play a crucial role in patient education and ensuring patient safety. However, when it comes to proper medication disposal, many pharmacies fail to provide correct information to patients. In a survey of randomly selected pharmacies across California, less than half of pharmacists provided proper medication disposal education for antibiotics, and only a quarter provided correct information for opioid disposal.[1]

This sizable gap in patient education is a reason for concern, especially considering the public health risks associated with improper disposal. In recent years, this gap has contributed significantly to the opioid epidemic. Increasing prescribing habits of opioids have led to sending patients home with more analgesics than they really need, with 92% of patients storing unused opioids at home instead of disposing them safely.[2] This failure to properly dispose of excess opioids is a leading cause of later opioid dependence, heroin use, and overdose death by both patients and family members.

Improper medication disposal is also a factor in the looming threat of antibiotic resistance. Leftover antibiotics thrown in the trash or flushed down the sink or toilet can contaminate the water supply. The trace amounts of antibiotics found in waste water are difficult and costly to remove, allowing microbes to adapt new ways to survive in their presence.[3]

Given the sizeable gap in medication disposal education, it must be considered that pharmacy schools could be a source for lack of education. By examining current pharmacy students in California, this study seeks to determine the extent of student knowledge regarding medication disposal, the source of this knowledge, and the training or lack thereof that has been received.

Relevance/Motivation

Emphasis on proper medication disposal should be a crucial part of education or training as intern pharmacists and healthcare professionals overall. This would help prevent environmental pollution, accidental poisoning, antibiotic resistance, and potential medication misuse and abuse. Raising awareness about proper and efficient medication disposal should be part of the school curriculum as future medication experts and leaders.

Experimental Design

This study is based on Qualtrics survey responses from California pharmacy students (P1-P4). The survey is anonymous and responses are voluntary. CAPSLead advisors from each of the California pharmacy schools were notified of the survey via an email from the TUC CAPSLead team. Upon agreeing to the terms of the survey, the advisors served as honest brokers and sent out the survey to their college of pharmacy students. Data collected will be saved in the cloud for up to 4 years.

Preliminary raw survey results have been compiled on an excel spreadsheet. The Chi Square statistical test will be used to analyze the data once the data collection process is complete. Upon completion of the data analysis, any downloaded data will be deleted from personal computers. Charts and any visual representation of data will be compiled in the data and results section. The following sections discuss some of the raw data collected.

Results and Discussion

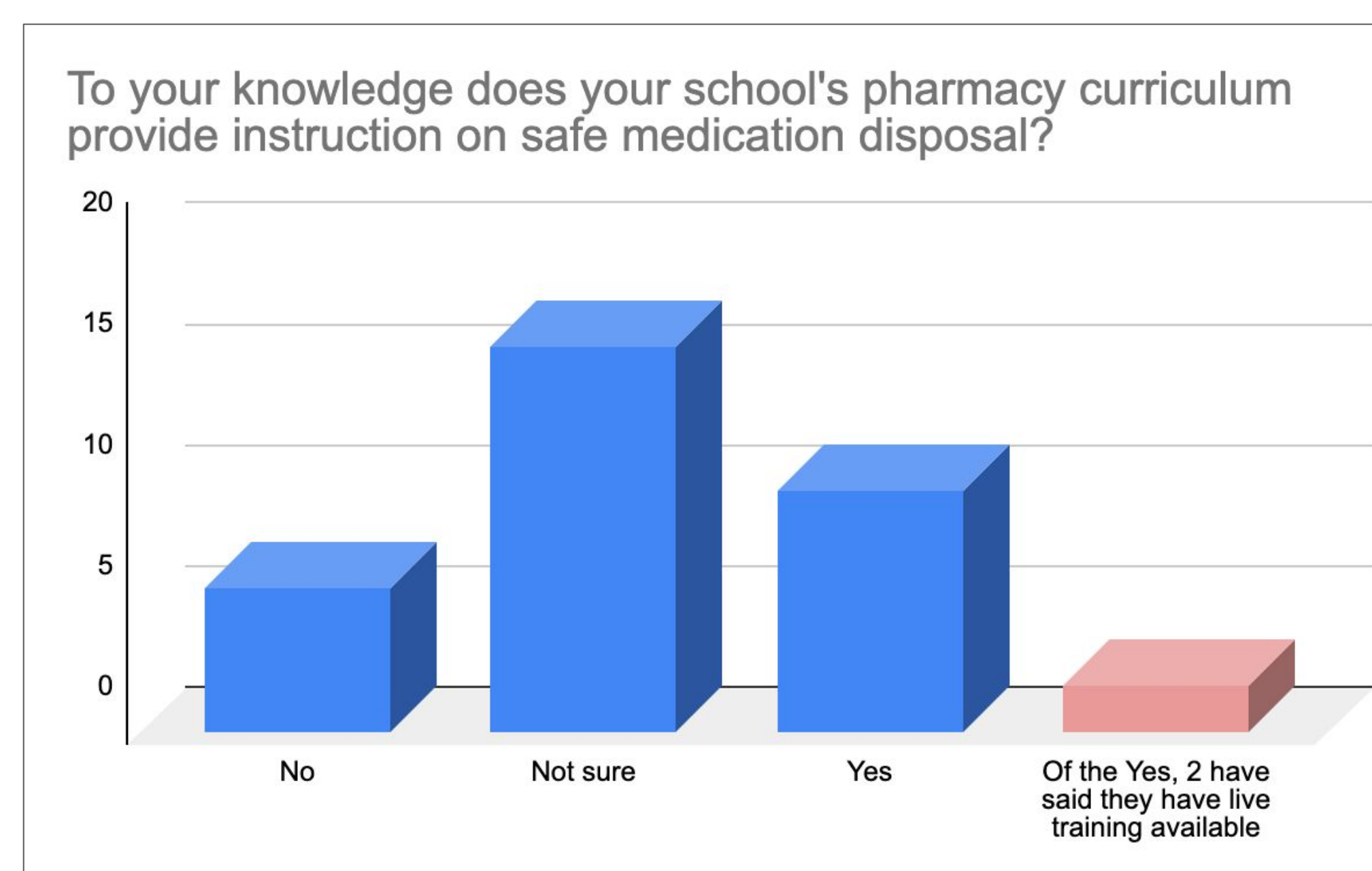


Figure 1: Greater than half of the respondents mentioned not knowing or not having any medication disposal instruction apart of their pharmacy curriculum. Of the 32 respondents, only 10 mentioned having any instruction, with 2 of those confirming live training sessions.

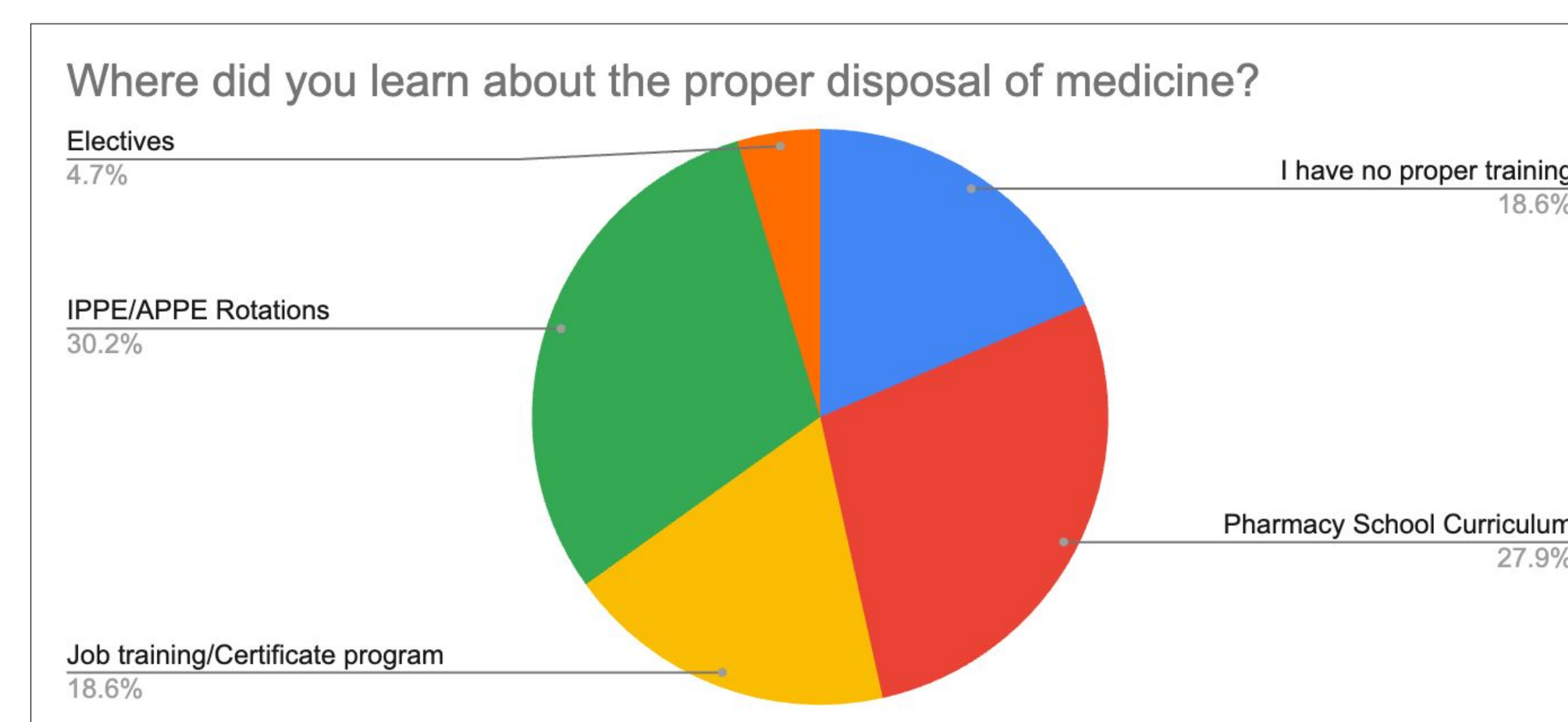


Figure 2: Of the 32 respondents, 30.2% learn about medication disposal from their experience at their IPPE and APPE rotations, while an additional 18.5% learn during on the job training. Only 27.9% of training comes from core pharmacy school curriculum.

Results and Discussion

Over half of respondents reported **less than one hour** of training on proper medication disposal from any source.

Of 29 respondents, **86%** believe that their medication disposal training was **inadequate**, and **more time should be spent** learning about medication disposal in school.

Only one third of respondents reported that they felt comfortable providing medication disposal information to their community based on their current training.

Raw data is sourced from a total of 43 survey respondents. If you are a student in a California pharmacy program and would like to help further our project, check out the QR code in the lower right corner!

Future Steps

Over the next few months, we will continue to collect survey responses and analyze the final results from pharmacy students across California via Chi Square analysis.

Currently, our study focuses on the survey results provided to us by current California Pharmacy students. In the future, we will expand our survey to include insight from California Pharmacy faculty as well. We will also compare the medication disposal curriculum from each of the California Pharmacy schools and analyze strengths and weaknesses in each program. We hope to bring uniformity to the medication disposal curriculum across all pharmacy schools in California.

Acknowledgements

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References

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Pharmacy Students: Please scan the code to fill out our survey on medication disposal training.

Thank you for your time!



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