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Assessing the Feasibility, Acceptability, Appropriateness, Barriers, and Facilitators to Implementing Naloxone Distribution in Residential Areas at UCF

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ASSESSING THE FEASIBILITY, ACCEPTABILITY, APPROPRIATENESS, BARRIERS, AND FACILITATORS TO IMPLEMENTING NALOXONE DISTRIBUTION IN RESIDENTIAL AREAS AT UCF

by

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ABSTRACT

With the rise of accidental fentanyl overdoses and recreational opioid use in college-aged populations, the need for campus-based overdose prevention and harm reduction measures is at an all-time high. Naloxone, an opioid antagonist, is an FDA-approved, lifesaving, medication which can be intranasally delivered by laypersons. Naloxone reverses opioid overdose, essentially buying time until an overdosing individual receives emergency medical attention. While some previous studies have examined access to naloxone on college campuses, to my knowledge no study has explored distribution of naloxone in residential college areas, such as dormitories and within Greek housing. Therefore, the purpose of this thesis was to identify themes in student perception surrounding naloxone, as well as potential processes and barriers/facilitators to naloxone distribution within residential areas (e.g., dormitories, sorority housing, and fraternity housing.) This study addresses these issues through qualitative, semi-structured, interviews with a convenience sample of students at the University of Central Florida, with questions informed by the Consolidated Framework for Implementation Research and Proctor et al. implementation outcomes. Seven students (n = 7) participated in the interview, all of whom either had personal experience with substance use disorder (SUD) or were close to someone with SUD. I analyzed data for themes using a mixed deductive-inductive template analysis approach in Dedoose software. Resulting themes relating to barriers to distribution within residential areas were as follows: lack of knowledge; fear of negative consequences from external parties; desire of administrators to maintain image of a “drug free campus”; lack of funding for distribution; student desire to avoid stigmatization. Resulting themes relating to facilitators to distribution in residential areas included the following: active involvement of

peers; providing free naloxone; educating students about where to get and how to use naloxone; physical accessibility; and anonymous ways to access naloxone. Targeting residential areas for naloxone distribution was also discussed as a theme. Types of people who could/should be involved in naloxone distribution included the following: residential assistants; secondary distributors; pharmacists; UCF leadership; sorority and fraternity leaders; and student liaisons. Study results could be used to inform efforts at UCF and other colleges to expand naloxone access.

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CHAPTER I: INTRODUCTION

During an opioid overdose, an individual can suffocate for several minutes, experience seizures, have an inhibited gag reflex leading to choking, and/or suffer from cardiac arrest (Centers for Disease Control and Prevention, 2022). In the circumstance of responding to an overdose, every second counts. Naloxone can restore respiratory function in a quick, safe manner and can be easily administered by laypersons before emergency medical personnel arrive on the scene of an overdose (CDC, 2022). Even with modern data suggesting the effectiveness of this method of harm reduction, qualitative research has unveiled barriers to naloxone distribution, such as stigma, that prevent access to naloxone in areas of need (Bounthavong et al., 2020)

It is well established that college-aged individuals, particularly individuals in fraternities, engage in recreational substance use (McCabe et al., 2018; McCabe et al., 2005). With the increase of fentanyl and fentanyl analogue-contaminated substances in illicit markets (Nolan et al., 2019), there is an increased need for student-centered overdose prevention methods in university settings.

To save lives, naloxone should be immediately available at the site of an overdose. To my knowledge, however, distribution of naloxone in student housing (e.g., residence halls, fraternity housing) has been underexamined, even though student housing is a potential setting for drug use and overdose. More specifically, little is known about the processes by which naloxone could be distributed in student housing, including barriers/facilitators. With the recent implementation of a take-home naloxone program within the Student Health Services (SHS) at

the University of Central Florida (UCF), the goal of this thesis was to assess the feasibility, acceptability, appropriateness (Proctor et al., 2011), as well as the barriers and facilitators to implementing naloxone distribution within UCF student housing. The Proctor et al. implementation outcomes (Proctor et al., 2011) and Consolidated Framework for Implementation Research (CFIR) were used to guide the data collection and analysis for this study. Data was collected through qualitative, semi-structured, interviews with students at UCF. Student transcripts were transcribed verbatim before being deductively and inductively coded in Dedoose. The Template Analysis approach was used in the analyzation of the codes to unveil themes within interview responses.

CHAPTER II: LITERATURE REVIEW

Within the state of Florida alone, 7,842 opioid-related deaths were reported in the year 2020. Of these deaths, 932 of the individuals (12%) were college-aged individuals between 18 to 24 years old (FDLE, 2021). Commonly used opioids include oxycodone, hydrocodone, morphine, codeine, and fentanyl (CDC, 2022). These medications are sometimes prescribed to treat moderate to severe pain due to surgery, injury, or chronic illness. Opioids are particularly addictive because they interact with the reward systems of the brain responsible for releasing endorphins and other hormones, like oxytocin, that cause sensations of well-being and comfort (Kosten & George, 2002)**.** Illicitly manufactured or "street" sold opioids, particularly fentanyl, analogues of fentanyl, and illicitly sold substances contaminated with fentanyl, are responsible for a rapidly increasing number of opioid-related deaths in the US (Armenian et al.,2018)

An opioid overdose entails respiratory and central nervous depression, which causes a slowed heart rate, slowed breathing, and unresponsiveness until the time of death (Schiller et al., 2022). Naloxone, an opioid antagonist, is a well-understood, safe, and highly effective drug in treating opioid overdose quickly. It can temporarily restore a person's breathing in minutes, which is essential to survival during an overdose (CDC, 2022). Naloxone is a legal substance that can be carried and administered by any friend, caretaker, or bystander in the state of Florida without a personal prescription (Orange County Government Florida, 2022). Additionally, Florida statue 768.13 (the "Good Samaritan Act") protects anyone from liability who administers naloxone, responds to an overdose, and informs authorities of a potential overdose.

Naloxone distribution on college campuses is a public health priority during the ongoing opioid overdose crisis. College-aged students are especially susceptible to illicit substance use or

the misuse of prescription medication due to academic stress, major life changes, or mental health conditions, such as depression (Hill et al., 2020). Ideally, naloxone should be readily available wherever college students use drugs, including within college residential areas, such as within dormitories. Naloxone distribution in Greek housing is also urgently needed because studies have found that fraternity members are even more likely to partake in substance use than their non-fraternity member peers (McCabe et al., 2018; McCabe et al., 2005).

While relatively little is known about potential approaches for distributing naloxone within college student residential areas, some studies have unveiled potential barriers/facilitators to naloxone distribution on college campuses in general. For example, substance use disorder (SUD) stigma is known to hinder naloxone utilization, especially if people are uncomfortable obtaining naloxone in a public setting (e.g., a pharmacy) (Antoniou, et al., 2021; Bennet et al., 2020). Additional known barriers to naloxone utilization on college campuses include indifferences toward overdose, fear of negative consequences of carrying overdose, and fear of misrecognizing the need for naloxone (Doughty et al., 2020). Cost of naloxone or lack of health insurance can also be barriers to accessing naloxone (Donavan et al., 2019). Even when naloxone is available on college campuses, students may be unaware of its availability due to lack of campus advertising (Hill et al., 2020).

Some studies have examined college students' knowledge of and attitudes toward naloxone. For example, Andraka-Christou et al. (2020) found that students further along in their college career were more likely to support naloxone distribution, and Stover et al. (2019) found that students with previous opioid prescription exposure had more knowledge about opioid overdose. Studies have also shown that education positively impacts beliefs and confidence

surrounding naloxone use and distribution among students (Bennett et al., 2022; Musco et al., 2020). Ideally, naloxone distribution on college campuses should be combined with naloxone education (Stover et al., 2019). When Washington State University implemented an opioid overdose prevention seminar and gave students take-home naloxone kits afterwards, 97% of respondents reported having the appropriate set of skills and tools to respond to an overdose (Panther et al., 2017).

Most studies of naloxone education/distribution on college campuses focus on medical and pharmacy students, rather than undergraduates or non-medical/pharmacy students. Therefore, little is known about how to facilitate naloxone access among the latter student populations. Even though some studies have examined the barriers, facilitators, and processes to naloxone distribution on college campuses (Andraka-Christou et al., 2022; Hill et al., 2020; Musco et al., 2020), no study has specifically explored processes for implementing naloxone in student housing. Therefore, this study will seek to address this gap using perspectives from the undergraduate students whom this intervention would directly impact.

CHAPTER III: METHODOLOGY

Guiding Framework: The Consolidated Framework for Implementation Research

The Consolidated Framework for Implementation Research (CFIR) is one of the most widely used implementation science frameworks, cited over 3,000 times (Damschroder et. al., 2020). Developed for the health services field, the CFIR consolidates various theories and sources to act as a concise guide for implementation research in healthcare. The CFIR framework can be easily adapted to fit various settings (CFIR, 2022). Therefore, CFIR is an appropriate tool for guiding studies of naloxone use and distribution on college campuses.

The CFIR includes five constructs that are theorized to affect the implementation process and barriers/facilitators: (1) intervention characteristics; (2) outer setting; (3) inner setting; (4) characteristics of individuals involved, and (5) the process of implementation (CFIR, 2022). Each of these constructs is described further below. Intervention characteristics entail the adaptability, complexity, cost, evidence strength, relative advantage, and trialability of the intervention being examined. The outer setting refers to cosmopolitanism (i.e., the network between two different organizations or large groups), external policies, incentives, and the needs of and resources for at-risk individuals involved in the intervention. The inner setting includes structural characteristics, networks, and communications (in a local setting), culture, implementation climate, and readiness for implementation of the intervention. Characteristics of individuals entail knowledge and beliefs about intervention, self-efficacy, individual identification with the organization, and other personal attributes such as motivation and values.

The process of implementation refers to planning, engagement, execution, and reflection and evaluation.

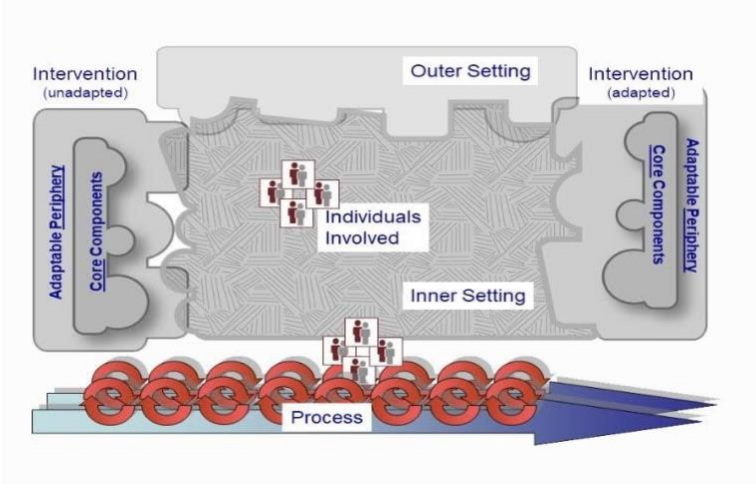

Figure 1: Map Demonstrating the Consolidated Framework for Implementation Research
Source: CFIR Consolidated Framework for Implementation Research
https://cfirguide.org/

Proctor et al.'s outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda

Designed to improve strategies for the implementation of healthcare initiatives, Proctor et al. identified eight unique ways by which implementation research outcomes can be conceptualized (Proctor et al., 2011). The outcomes most relevant to this study are the following: feasibility, acceptability, and appropriateness. Feasibility refers to how successful an intervention is. Acceptability refers to the level of which an intervention is agreeable or likeable to a specific set of stakeholders. Appropriateness refers to the degree to which an intervention "fits" within a particular environment.

Research Questions

Using the CFIR constructs and Proctor et al.'s implementation outcomes as a point of reference, this study will help answer the following research questions:

1. What is the acceptability, appropriateness, and feasibility of distributing naloxone in student housing (e.g., residence halls, fraternities, sororities)?
2. What are potential processes and approaches for distributing naloxone in student housing and who should be involved?
3. What are the barriers and facilitators to distributing naloxone in student housing and how should they be addressed?

Instrument Development

I developed one semi-structured interview instrument using my research questions, my literature review, and the CFIR interview guide tool provided on the official CFIR website (CFIR, 2022). This interview instrument was used across all interviews with participants (see Appendix C). I piloted the interview questions with one undergraduate student to ensure relevance and clarity. Due to the nature of semi-structured interviews, certain interview questions were subject to change or expand during interviews with students. Semi-structured interviews allow for deeper questioning after interviewee responses, much like a conversation, enabling rich data collection. Interview topics included the following: participants' feelings about naloxone as a medication, processes by which naloxone could be distributed in student housing, barriers to naloxone distribution in student housing, and facilitators to naloxone distribution in student housing. The interview instrument ended with structured questions to collect demographic data (see Appendix D).

Recruitment

I recruited a convenience sample UCF of students for semi-structured, individual interviews. My inclusion criteria were as follows: being at least 18 years old or older, speaking English, studying at UCF, and having a history of substance use or being close to someone with a history of substance use. Students were recruited through flyers, which were hung and distributed in the student health services area, campus residential areas, the library, and student union. The recruitment flyers included my thesis title, a brief description of my study, the predicted time for interviews, the study inclusion criteria, my points of contact, and a notice for a $10 Amazon gift card incentive for participation. After interested students contacted me via cellphone and email, they were provided a written explanation of research.

Data Collection

Semi-structured, 30-minute, in-depth, interviews were used to generate the data discussed in this study. All participants provided verbal informed consent before the interview process began. Interviews occurred over Zoom software, were audio-recorded with participant consent, and transcribed verbatim. The transcribed verbatim from interviews were entered into Word documents, and all were uploaded to Dedoose (Dedoose, 2018) for further analysis.

Analysis

Transcriptions were analyzed in Dedoose software (Dedoose, 2018), using Template Analysis, which is a mixed deductive/inductive qualitative analysis approach involving development, application, and refinement of a hierarchical codebook (King, 1998). The structure

and relationship of final codes in the codebook (after iterative refinement) reflect study themes. The steps of the template analysis process are further explained below.

First, an initial codebook was developed based on my main research questions. This codebook included the following parent codes (i.e., first level codes):

1. Barriers to naloxone distribution on campus
2. Facilitators to naloxone distribution on campus
3. The people and facilities who should be involved in creating a distribution network

These codes were applied to data relevant to my research questions (i.e., not all interview data was coded). During this process, I inductively created new child codes (e.g., second level codes) reflecting emerging themes. For example, the child code "not knowing how to use naloxone" was created under the initial parent code "barriers to naloxone distribution on campus." While coding each interview, the codebook was iteratively revised to reflect new data. After all interviews were coded, final revisions to the codebook occurred to reflect the structure and relationship of themes. For example, the grandchild (i.e., level three) code "not knowing where to obtain naloxone" was placed under the child code "lack of knowledge," which was placed under "barriers to naloxone distribution on campus." As a last step, a subject matter expert reviewed the final codebook and provided feedback on overarching themes.

Ethics

Institutional Review Board (IRB) approval was obtained from the University of Central Florida prior to data collection (See Appendix A.) Each participant was provided with an Explanation of Research sent via email. Verbal informed consent was also obtained from all

participants before starting their interviews. Before the interviews, participants were also told they could skip questions they felt uncomfortable answering and could end the interview at any time. Participants were told their identifiable information would not be reported in any publication. Confidentiality of participants was assured through the following approaches: (1) transcripts were deidentified before uploading them to Dedoose, and each student interviewed was assigned a pseudonym; (2) the documents linking the pseudonym and individual name were encrypted and stored on a password protected computer; (3) audio files were stored on a password protected computer; and (4) only deidentified aggregate information will be presented in any publications, reports, or conference presentations.

CHAPTER IV: RESULTS

Overview

After reporting participant sample characteristics, I describe themes related to barriers/facilitators to naloxone distribution in college residential areas, as well types of individuals who could or should be involved in distribution.

Participant Characteristics

A total of seven students (n=7) completed interviews. Approximately half of the sample were women (n=4), and approximately half were men (n=3). Most of the participants were White (n=6) and one participant was Asian (n=1). Two of the White participants identified as Latinx (n=2), and one identified as Middle Eastern (n=1). Most of the participants were undergraduate students (n=6), and one participant was a graduate student (n=1.)

Barriers to Distributing Naloxone on Campus

Five (5) key barriers to naloxone distribution on campus were identified through interviews with students. They are listed as follows*: lack of knowledge, fear of negative consequences from external parties, desire of administrators to maintain perception of "drug free campus", lack of funding,* and *student desire to avoid stigmatization.*

Theme 1: Lack of Knowledge

The barrier "lack *of knowledge*" included not understanding the frequency and signs of overdose, as well as not knowing how to access naloxone on campus. For example, student #5 reported: "Not knowing where to get [naloxone], that is preventing people from using it." Neither

student #1 nor #2 knew that naloxone was currently available at the UCF student pharmacy in the student health center.

Theme 2: Fear of Negative Consequences from External Parties

The barrier "*fear of negative consequences from external parties*" included fears of actions by external parties (e.g., law enforcement, the university, their parents) due to the use, possession, or administration of naloxone. When asked about potential challenges to naloxone distribution, Student #1 explained that fear of negative consequences might prevent reporting an overdose:

> "You know, I know people who have overdosed. They came out of it, and they don't call health professionals…
>
> I would think they're afraid of being arrested, kicked out, receiving a hospital bill, their parents finding out, being sent to rehab, not trusting authority. You're most likely partaking in something illegal if you're overdosing."

Student #1 later went on to suggest that even when potentially requesting naloxone, there is a fear of being "ratted out" or experiencing a greater "risk of judgement" by adults or authority members who may be involved in a naloxone distribution process. This student described a general "fear of getting in trouble." Student #1 expressed their fears of academic and/or legal repercussions because "you're most likely partaking in something illegal if you're overdosing."

Theme 3: Desire of administrators to maintain the public perception of a "drug free campus"

Some students noted that the university claims to be a "drug free campus" and, therefore, administrators may feel averse to widespread naloxone distribution efforts, as distribution could imply that administrators realize the university is not drug free. Similarly, administrators may fear

that distribution could even suggest to some students or donors that drug use is acceptable. For example, Student #6 said:

> If we stopped saying that we are drug free campus, when we are a drug using campus, and identified the fact that students use drugs, and acknowledged that students at UCF have passed away from using drugs... that would help.

Student #1 felt that administrators may be concerned that the public would view naloxone distribution on campus as "promot[ing] drug use rather than helping people."

Student #2 said, "I think on some level giving students Narcan might even slightly come off as encouraging students to take drugs."

Theme 4: Lack of Funding

The barrier "*lack of funding*" refers to insufficient current funding for naloxone distribution on campus. Student #2 suggested that funding is hampered by lack of campus administrator interest in naloxone distribution, explaining that administrators at UCF would have to be "willing" to freely distribute naloxone despite their concerns of "encouraging drug use" on campus. In this way, the lack of funding theme relates to administrators' desire to maintain a perception of a drug free campus.

Theme 5: Student desire to avoid stigmatization

Some students explained that because SUD is stigmatized, students may not want to ask for naloxone (e.g., at a pharmacy) because it would "out them" as having an SUD.

Student #1 explained that "People who might need [naloxone]… they might not want other people to know they need it… there is a lot of shame or secrecy associated with drug use."

Student #3 similarly identified the requirement of students "interacting with other people" to obtain naloxone as a potential stigma-driven barrier, particularly if the student does not want anyone to know they use drugs.

*S*tudent #5 explained that the SUD stigma exists in the wider community, not just on campus:

> Student #5: People should know the signs of overdose and statistics of overdose related deaths, but few people do. Tabooness of talking about overdose is a very large hurdle, especially in religious communities and within minority households, that sort of thing.

This student indicated that the stigma surrounding overdose not only hinders naloxone distribution, but also hinders the potential for common knowledge to be spread about overdose prevention, thereby suggesting a link between the stigma theme and the lack of knowledge theme.

Facilitators to Distributing Naloxone on Campus

Despite the barriers to naloxone distribution within residential areas at UCF, the participants I interviewed were eager to suggest facilitators to naloxone distribution and methods for implementing further access to naloxone on campus. Six (6) facilitators to naloxone distribution on campus were identified through interviews with students. These facilitators are as follows: a*ctive involvement of peers, providing free naloxone, educating students about where to get and how to use naloxone, physical accessibility, anonymous ways to access naloxone,* and *targeting residential areas for naloxone distribution.*

Theme 1: Active Involvement of Peers

More than half of the interviewees suggested that residential assistants (RAs), student sorority/fraternity leaders, student-led support groups, and student liaisons could help distribute naloxone more effectively. Student #1 described their reasoning for this as follows:

> "Another peer or sorority member who is like a liaison… they might have it [naloxone], which might feel like a safer person to approach."

This is the same student who explained that "someone their age" might be "less likely to rat" them out. Student #5 described a potential process for naloxone distribution by RAs and fraternity or sorority leaders:

> Student #5: I would say if the RAs, or you know, heads of the respective living facilities like Hercules, hosts a meeting and the students within it are shown training and informed on naloxone, it could be distributed there. We could distribute it to RAs for the sorority and fraternities. So, one, they should first receive a proper demonstration of how to administer it prior to receiving it.

Student #3 described a similar process for naloxone distribution through the active involvement of peers. They suggested that the student leaders of sororities and fraternities "receive a large amount of naloxone from UCF and instruct the members [of the sororities or fraternities] on how to use it." Student #6 suggested RAs act as "Secondary distributors" of naloxone, adding "; secondary distributors are common in harm reduction settings - people who are specifically educated on it can pass it out."

Theme 2: Providing free naloxone

Three students stated that naloxone would be more accessible if it were free (i.e., no cost). When Student #6 was asked how they felt about naloxone being distributed on campus, they replied “I just feel passionate about it being treated as a necessary tool and it should be free”. Student #5 felt free naloxone was better than naloxone at cost based on their experience working at a community clinic that provides harm reduction services.

Theme #3: Educating students about where to obtain and how to use naloxone

Students felt that the university should engage in more efforts to educate students about how to use naloxone and where to access it on campus. As Student #1 described, before retrieving naloxone, “people would have to know where to get it or who to get it from.” Student #2 argued that not only should students know where to get naloxone but that they “find it important that students are able to pick it up safely and know how to use it.”

Education about naloxone’s benefits and how to use it was also seen as facilitating access. Student #4 said, "it’s really all about education- some people have rigid beliefs about this stuff. Educating college students, they might be more open to it.” Student #5 would agree by stating in their interview that “as long as people are educated about it [naloxone], it will come off in a positive light [in reference to public perception.]” A few students provided specific examples of how to integrate education into campus settings:

> Student #2: I think that in any way that health information is spread on campus, to include information about Narcan and overdose. How that information that is passed around, like safety related information or sexual health information, overdose information should be passed around with it. It’s about time that we gave out honest and accurate information about substance use in general.

> Student #3: Giving a platform to medical professionals and experts in the field including harm reduction …. Allowing them to uh meet with leadership and discuss logistics of distributing naloxone in residential areas.

Theme 4: Physical Accessibility

> Students suggested that naloxone should be easy to locate, with physical accessibility facilitating ease. For example, Student #4 said: "Obviously, we want it to be as simple as possible so someone could just grab that."
>
> Students #3, #6, and #4 suggested that the campus could use similar distribution approaches for naloxone as for condoms, which are perceived as easily available on campus. In their interview, Student #6 explains:
>
> "So, it's essentially like a condom, and distributed like a condom, which I do believe we have available at dorms and student housing and around campus like in buildings like the CAPs building."

Students suggested that naloxone should be in any places that students are known to congregate, and that it should be highly visible in these locations. For example, Student #3 described that "any places where condoms are offered like bathrooms or student union, vending machines-" would be an ideal place for naloxone accessibility.

Student #2 similarly explains that "anywhere with good visibility" is the best way to distribute naloxone on campus in "relevant areas… where students will usually go-". Student #7 suggested that areas on campus like "the gym or recreation center" would be ideal for naloxone distribution as "almost all of UCF students go to these areas" and furthered their point by explaining "it makes it so that all students of different groups can have access to it."

Theme 5: Anonymous ways to access naloxone

Participants emphasized that naloxone should be distributed in a way that does not "out" students as having SUD, in contrast to the current approach of students going to a pharmacy and asking for naloxone. Two approaches were suggested instead: (1) vending machines that do not require person-to-person interaction to obtain naloxone, and (2) widespread distribution to all students that does not single anybody out.

Within their interview, Student #6, expressed that naloxone should just be "out" in public spaces within residential halls "like a tampon out of a machine." Student #3 similarly expresses that it should be stocked "in aid kits and bathrooms." within residential halls. These methods allow for discrete access to naloxone, without requiring students to interact with a pharmacist or authority figure, thereby addressing concerns of stigma or fear of negative consequences from an external party.

Relatedly, three students felt that naloxone could simply be distributed to all students. Interviewees described seminars or residential area tours as opportune times to give all students naloxone:

> Student #3: I think that a module-based instruction uhm describing naloxone and use uhm would fill in for that [a faculty member's involvement] and then from that point on, students could uhm receive it [naloxone] through the pathways such as vending machines, without interacting with other people.

> Student #2: Maybe they should have representatives from UCF come and pass it out during some kind of informational seminar. Like, periodically to reach out to these students and tell them that Narcan is readily available and where they can find it distributed.

> Student #1: I tend to think opioid use is surrounded by secrecy; it would need to be something the entire buildings are informed of. So that information is something that everyone has access to…. When students live and move into these places, there is someone showing them around. When they are shown around, the naloxone information should be part of the information they are naturally given.

One interviewee also noted that, at a minimum, students could be told to tell the UCF naloxone distributors (e.g., pharmacists) that they are getting the naloxone for an unnamed "other person," even if they are getting it for themselves.

Theme 6: Targeting residential areas for naloxone distribution

Students overwhelmingly felt that residential facilities like dormitories, fraternities, and sororities were important settings for naloxone distribution on campus. Students made comments such as, "I think that is the reasonable next step," "I think that would be great," and "that would be very beneficial to the student body." This indicates that within this sample, distributing naloxone in residential settings is acceptable among students.

CHAPTER V: DISCUSSION

This honors thesis is among the first studies to explore student perspectives about distributing naloxone in college residential areas, including in Greek housing. Students felt that the residential areas are an important target area for distribution. They also suggested several approaches to enhancing naloxone accessibility in student residential areas, as well as potential barriers to address.

Although naloxone is currently available within the student pharmacy at UCF SHS, participants identified multiple barriers which prevent students from accessing it. Some barriers like fear of negative consequences from external parties, lack of funding, and lack of knowledge, have been identified in other studies **(**Bounthavong et al., 2020**)**. However, this study highlights the importance of specifically examining barriers related to college campus naloxone distribution, as they may differ from barriers to naloxone distribution in other community settings and among other populations. For example, students not only expressed concerns about legal implications of drug use and naloxone use, but they also expressed worries about being "kicked out" of the university and having their parents informed. To my knowledge, this concern is relatively unique to the college population; namely, that the entity distributing naloxone would also be the entity that could impose negative consequences for drug use.

Students felt fears of negative consequences from third parties could be addressed by distribution mechanisms that prevent singling out people with SUD, including through vending machines requiring no person-to-person contact and through widespread distribution. The latter

approach is reminiscent of interventions (Babor et., al, 2007) which screen all people in healthcare settings for SUD rather than targeted individuals.

Students also described limited funding for campus wide naloxone distribution efforts. They were concerned campus administrators might need to be involved in securing funding and distributing naloxone. Students felt that campus administrators may be unwilling to seek or provide funding for naloxone distribution because such activities could contradict two images campuses want to maintain: (1) that campus drug use is not tolerated, and (2) that the campus is "drug free" (i.e., no one on campus is using drugs.) Students felt that these images are necessary to appease some university donors and that, unfortunately, the donors' perspectives may sometimes be prioritized over student public health. Administrators might be more willing to support naloxone distribution if carefully crafted public messaging accompanies the effort explaining that naloxone distribution saves lives but does not encourage students to begin drug use.

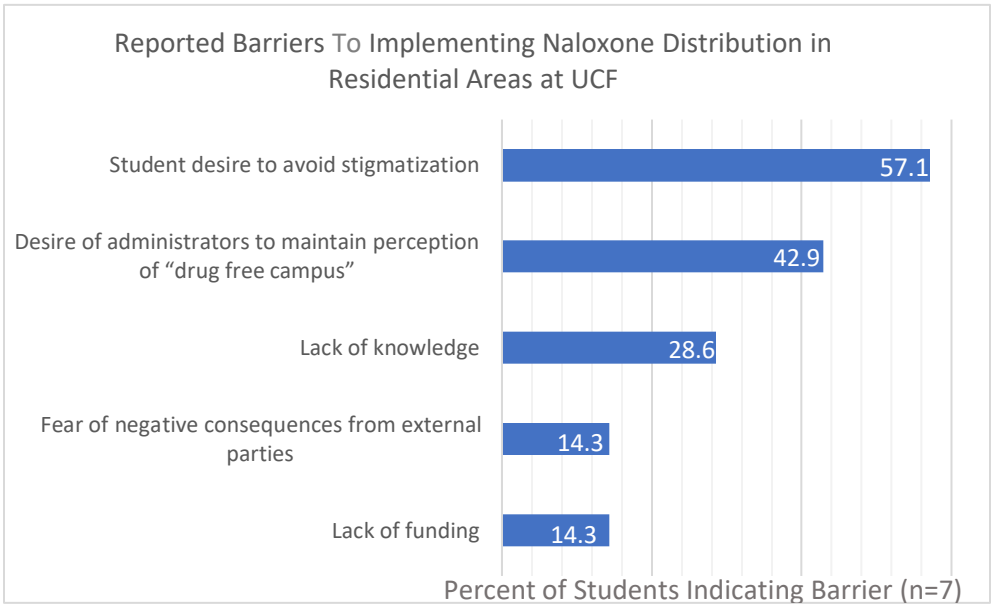

Figure 2: Percentages of students who indicated the identified barriers within their interviews

Finally, students emphasized that education about naloxone, including how to use it and where to get it, could help address barriers related to stigma and lack of information. Students provided examples of several approaches to educating the college community. Interestingly, several students suggested that naloxone education and distribution could mirror successful existing efforts for condom education and distribution. Therefore, future studies could examine the feasibility of combining education and distribution of both harm reduction mechanisms.

This study is subject to important limitations. First, even though themes emerged, the sample size was small. Second, the sample only included student perspectives. It is possible that students' perceptions of university administrators are inaccurate. Also, administrators may have additional ideas about how to widen naloxone distribution. Finally, the study was only completed at one public university in the US, and the culture and conditions at that university may not be generalizable to other universities.

Future Research

In future research, the interview sample could be expanded to other stakeholders and across more universities to understand perspectives of a broader student population, and of faculty and university administrators as well. Furthermore, future research could explore the feasibility, acceptability, and appropriateness of specific approaches for naloxone distribution discussed in this study, including combining naloxone distribution with condom distribution on college campuses.

APENDIX A: IRB EXEMPTION FORM

UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

October 11, 2022

Dear Barbara Andraka-Christou:

On 10/11/2022, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study
Title:	Assessing the feasibility, acceptability, appropriateness, barriers, and facilitators of implementing naloxone distribution within residential areas at UCF
Investigator:	Barbara Andraka-Christou
IRB ID:	STUDY00004748
Funding:	None
Grant ID:	None
Documents Reviewed:	• Study 4748 belle IRB protocol_TF edits(1).docx, Category: IRB Protocol; • Study 4748 Demographic and interview instrument_TF edits(1).docx, Category: Interview / Focus Questions; • Study 4748 email recruitment - staff (1)_TF edits.docx, Category: Recruitment Materials; • Study 4748 explanation of research - faculty or staff_TF edits(1).pdf, Category: Consent Form; • Study 4748 explanation of research - students_TF edits(1).pdf, Category: Consent Form; • Study 4748 Naloxone Flyer Recruitment_TF edits.docx, Category: Recruitment Materials; • Study 4748 thank you message_TF edits.docx, Category: Recruitment Materials;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes

affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Tamiko Fukuda

UCF IRB

APPENDIX B: EXPLANATION OF RESEARCH

EXPLANATION OF RESEARCH

Title of Project: Assessing the feasibility, acceptability, appropriateness, barriers, and facilitators of implementing naloxone distribution within residential areas at UCF

Principal Investigator: Barbara Andraka-Christou, J.D., Ph.D.

Co-/Investigator: Isabella Arguello-Howe

You are being invited to take part in a research study. Whether you take part is up to you.

The purpose of this research is to the feasibility, acceptability, appropriateness, barriers, and facilitators of implementing naloxone (opioid overdose reversal medication) distribution within residential areas at UCF.

You will participate in an individual, confidential interview about your perceptions of naloxone, potential processes for distributing naloxone, and potential barriers/facilitators to distribution of naloxone in UCF residential facilities. The interview will last approximately 30 minutes and will take place via audio/visual software (e.g., Zoom.) or by telephone in a location of your choosing. You will be audio and video recorded. If you do not want to be recorded, you can still participate, and the researcher will manually take notes on your responses. You will be able to skip any questions you do not want to answer. You may stop participating in the interview at any time, but only those who complete the interview will receive a gift card. Your audio recording will be transcribed by the researcher and then deidentified prior to analysis. After completing the interview, you will also be asked to take a 2-minute online Qualtrics survey about your demographic characteristics, which will be linked to your interview data.

Personal identifiable information will not be reported. Only de-identified, aggregate interview results will appear in resulting publications or presentations. Identifiable data will be stored separately from the deidentified data. All data will only be accessible by the research team on password protected UCF OneDrive accounts, and data will be stored for 5 years after study closure.

To participate in this study, you must eighteen years of age or older, speak English, currently be a UCF student, and have lived experience with a substance use disorder or be close to someone with such lived experience.

A $10 electronic Amazon gift card will be emailed to you within seven days of completing the interview.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, please contact Dr. Barbara Andraka-Christou, Assistant Professor, School

of Global Health Management & Informatics, University of Central Florida, at Barbara.andraka@ucf.edu or (407) 823-5174.

IRB contact about your rights in this study or to report a complaint: If you have questions about your rights as a research participant, or have concerns about the conduct of this study, please contact Institutional Review Board (IRB), University of Central Florida, Office of Research, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901, or email irb@ucf.edu.

APPENDIX C: SEMI-STRUCTURED INTERVIEW GUIDE

"*Assessing the feasibility, acceptability, appropriateness, barriers, and facilitators of implementing naloxone distribution within residential areas at UCF*."

Isabella Arguello - Howe

Semi-Structured Interview Guide

1. What do you know about naloxone?

2. Where did you learn about naloxone?

3. How do you feel about the idea of naloxone being distributed on campus?

4. How could naloxone be distributed on campus?

5. What is the best approach, in your opinion, for distributing naloxone on campus?

6. How do you feel about the idea of distributing naloxone in residential student settings, like dormitories, fraternities, or sororities?

8. What would be the best way to distribute naloxone in residential student settings?

9. What potential challenges do you see to distributing naloxone in residential student settings?

10. How might these challenges be navigated?

11. Who do you believe would need to be involved in planning naloxone distribution in residential student settings?

APPENDIX D: DEMOGRAPHIC QUESTIONS

Structured Demographic Questions for Students

1. What is your gender identity?
2. What year of college are you in? (e.g., freshman, sophomore)
3. What is your race?
4. What is your ethnicity?
5. What type of housing do you live in? (e.g., Greek house, dormitory, off campus UCF affiliated housing; off campus non-UCF affiliated housing)

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