

# Who is Fatigued? A Repeated Cross-Sectional Survey of Officer Attitudes Towards People Who Use Opioids, Naloxone, and Their Role in Responding to Opioid Overdoses

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## Abstract

Many police departments have equipped their officers with naloxone as a promising response to the opioid crisis. Though research suggests police can effectively administer naloxone, recent studies suggest that officers may develop negative attitudes over time as they continually respond to overdoses. This has been described as a “compassion fatigue” effect. We investigate the compassion fatigue hypothesis with a repeated cross-sectional survey of officers in the Tempe, Arizona Police Department. We focus on three outcomes (1) perceptions of officers’ role in responding to overdoses, (2) perceptions of naloxone related risk-compensation beliefs, and (3) stigmatizing perceptions of people who use opioids (PWUOs). We run one-way fixed effects regression models to assess if officer attitudes have changed over the study period. Then we run multivariate regression models to test whether officers’ opioid overdose response frequency is associated with any of the three outcomes. The findings suggest officers have become more supportive of responding to overdoses but have developed more stigmatizing views of PWUOs over time. This warrants further research attention. However, opioid overdose response frequency was not associated with any of the outcomes. We conclude with a discussion of these findings and their implications for police involvement in the opioid overdose crisis.

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## 1 Introduction

The opioid overdose crisis is one of the most persistent and long-term public health emergencies facing the United States in the last half century (Humphreys et al., 2022). In 2017, there were 47,600 fatal opioid overdoses (Wilson et al., 2020), leading the U.S. Department of Health and Human Services to declare a national public health emergency (Johnson & Wagner, 2017). Data shows the crisis has become more dire in recent years. The number of fatal overdoses exceeded 100,000 annually in 2021 and 2022, with fatal opioid overdoses representing approximately 76% of the total (e.g., 84,181 fatal opioid overdoses in 2022; Center for Disease Control and Prevention, 2023). Though data indicate a small decline in 2023 (3.2%), 81,083 fatal opioid overdoses occurred in that year alone (Center for Disease Control and Prevention, 2024).

Naloxone administration programs have emerged as a promising response to opioid overdoses. Developed in the early 1960s, naloxone is an opioid antagonist that binds to opioid receptors in the brain, effectively reversing an overdose and restoring “normal breathing” (Rando et al., 2015: 1202). The drug works very quickly, has few side effects, and if administered in time, can prevent brain damage and death (Dahlem et al., 2017). According to the Legislative Analysis and Public Policy Association (LAPPA, 2022), every state has passed a Naloxone Access law (NAL) to enhance availability of the drug, though the specific components of the NALs vary by state. On March 29, 2023, the FDA approved over-the-counter (OTC) nonprescription use of intranasal naloxone (U.S. Food and Drug Administration [FDA], 2023).

Given police officers are often first to the scene of an opioid overdose (White et al., 2021b; White et al., 2022), police departments have increasingly outfitted their officers with naloxone (Lurigio et al., 2018). In 2019, data from the North Carolina Harm Reduction Coalition indicated that approximately 2,500 police departments had deployed naloxone to their officers – representing 14% of American law enforcement agencies (Quinn, 2019). Ray et al. (2023a)

surveyed a nationally representative sample of law enforcement agencies, and 81.7% reported their officers carry naloxone – suggesting rapid diffusion of the drug in American policing over the last few years.

Some jurisdictions have created collaborative naloxone programs that leverage police involvement with targeted public health outreach efforts to overdose survivors. In fact, 30% of the agencies surveyed by Ray et al. (2023a) reported involvement in post-overdose follow-up with either social service or public health providers. The empirical evidence suggests that outfitting officers with naloxone can reduce overdose fatalities (Rando et al., 2015), and collaborative approaches between police departments and public health agencies can lead to higher engagement rates with services (White et al., 2021b) and can be effective at reducing fatal opioid overdoses (Donnelly et al., 2022).

Although police are playing an increasingly central role in opioid overdose response, officer acceptance of this responsibility, particularly over the long term, remains under question. Prior research shows police officers have generally expressed positive views of naloxone and opioid overdose response (White et al., 2021a), but several studies have reported that, over time, officers develop negative attitudes towards people who use drugs (PWUDs), people who use opioids (PWUOs), and naloxone, as they respond to more overdoses (Carroll et al., 2020; Murphy & Russell, 2020, 2021). This phenomena has been described as a form of “compassion fatigue,” in which officers lose empathy and develop negative attitudes after repeatedly being involved in traumatic incidents (Figley, 1995, 2002). Compassion fatigue is not confined to police work and has been highlighted across professional contexts (Adams et al., 2006). The extent to which police officers experience compassion fatigue with opioid overdose response is unclear and concerning, as such fatigue can foster negative attitudes and potentially undermine the effectiveness of police-involved responses to the opioid crisis (Winstanley, 2020). In the extreme, compassion fatigue could lead to officers refusing to administer naloxone. Less

extreme responses could also have serious negative effects, such as delayed response to overdose calls, delays in administering the drug, and increased risk of criminalizing the incident through arrest. Given both the severity of the opioid crisis and the rapidly expanding role of the police in the response to that crisis, there is an urgent need for additional research on this question.

In this repeated cross-sectional survey, we explore Tempe, AZ police officers' perceptions and attitudes towards naloxone, PWUDs/PWUOs, and their role in responding to opioid overdoses over a three-year period when officers participated in a police-led naloxone program. Officers completed multiple waves of surveys, and we examine the stability of officers' attitudes over this period, with a specific focus on indicators of compassion fatigue. We also examine compassion fatigue via assessing the relationship between the frequency of opioid overdose response (at the officer level) and officer's perceptions of naloxone, PWUDs/PWUOs, and responding to overdoses. These findings have implications for police involvement in opioid overdose response and the sustainability of police-led naloxone programs in the long term.

## **2 Literature Review**

### **2.1 Police attitudes towards naloxone and PWUDs**

Police officers' perceptions of naloxone, substance use, and PWUOs represent a critically important component of police-led naloxone programs, as negative attitudes can influence officers' commitment and willingness to participate in such programs. When officers were not armed with naloxone, prior research shows that officers consistently reported feeling a sense of helplessness on scene the scene of an overdose (Banta-Green et al., 2013; White et al., 2021b). As early as 2013, the Deputy Director of the U.S. National Drug Control Policy emphasized the importance of law enforcement carrying naloxone (Botticelli, 2013), and the Bureau of Justice Assistance highlighted that carrying naloxone leads to improved job satisfaction among police officers (Bureau of Justice Assistance, n.d.). Indeed, outfitting officers

with a medication that reverses the effects of an overdose, and saves lives, is generally viewed favorably among officers (Lloyd et al., 2023; Purviance et al., 2017; Wagner et al., 2016; White et al., 2021a, 2021b). In fact, studies also show that officers want to be involved in responding to opioid overdoses (e.g., Murphy & Russell 2020).

Police officers can also effectively administer naloxone, are receptive to training (Lloyd et al., 2023; Pourtaher et al., 2022; Purviance et al., 2017; Wagner et al., 2016), and can confidently handle overdose situations (Ray et al., 2015). White et al. (2021a) document statistically significant increases in officers' self-reported competence and confidence, measured before and after they started carrying naloxone. Officers were more likely to agree that they can recognize signs of an overdose, are able to deal effectively with an overdose, and can properly place an overdose victim in the recovery position (White et al., 2021a). Other studies have also found that competence tends to improve following training modules or experience with naloxone (Wagner et al., 2016).

While officers believe they are a critical component of the response to overdoses, some studies show that officer perceptions of both PWUOs and harm reduction programs are negative and become increasingly so – as they respond to overdoses and other drug-related problems. Studies have found that officers tend to agree that those who overdose are to blame (Beletsky et al., 2005; Wagner et al., 2016), that naloxone enables PWUOs to continue using (Banta-Green et al., 2013; Burris et al., 2009), that naloxone can increase the prevalence of opioid use (Reichert et al., 2023), and that because of naloxone, the use of opioids will be riskier (e.g., Saunders et al., 2019). Known as risk compensation beliefs, those with these beliefs claim that harm reduction programs, including overdose prevention sites, syringe exchange programs, and naloxone distribution programs, will lead to riskier use because they provide safety nets from fatal overdoses. Overall, studies show that officers display negative attitudes towards PWUDs and non-punitive approaches to use, including drug treatment (e.g., Murphy & Russell,

2021). While effective training, as Winograd et al. (2019) show, can shift police officers' risk compensation beliefs to relying on the evidence, these negative attitudes could influence their discretion at the scene of an overdose and lead to punitive outcomes for PWUOs. And, if police officers experience compassion fatigue, these outcomes could be more likely.

## 2.2 Compassion Fatigue

Compassion fatigue refers to the cumulative negative effect of vicarious traumatization. That is, an individual in an occupation where they care for and interact with individuals who experience traumatic events may be vicariously traumatized, and over time, the cumulative effect of that vicarious trauma may lead to less empathy and more pessimistic attitudes (Adams et al., 2006; Figley, 1995). Research has documented the emergence of compassion fatigue primarily among nurses in many different working contexts, including hospice, emergency rooms, and intensive care (Ledoux, 2015). Other research has investigated compassion fatigue among therapists (Figley, 2002) and social workers (Adams et al., 2006). Only a handful of studies have explored the potential for compassion fatigue to emerge among police as a consequence of overdose response (Banta-Green et al., 2013; Saunders et al., 2019).

The research, thus far, indicates that police officers who frequently respond to overdoses are likely to experience compassion fatigue. Carroll et al. (2020) finds that as the frequency of overdose response increases, officers' attitudes towards the distribution of naloxone to community members and the effects of Good Samaritan Laws to reduce opioid overdose fatalities decline. Likewise, Murphy & Russell (2020) investigate the compassion fatigue hypothesis for a sample of police officers in Pennsylvania. They also find that with greater frequency of overdose response and naloxone administration, attitudes towards drug treatment and PWUDs become increasingly negative (Murphy & Russell, 2021).

Police officers' attitudes towards harm reduction, substance use, and PWUOs are critical to capture, particularly given they come into contact with PWUOs and have increasingly been

tasked with leading (or co-leading) opioid overdose response efforts. Quite simply, the emergence of compassion fatigue may undermine the effectiveness and sustainability of police-led naloxone programs, as officers become more pessimistic, less empathetic, and less supportive of participating in overdose response efforts over time. One potential consequence of officer compassion fatigue is the criminalization of PWUOs – which harms the overdose victim (i.e., arrest) and their loved ones, and can also lead to a hesitancy among PWUOs to call 911 due to the real fear of a police response and potential arrest (Bohnert et al., 2011). If police officers are often the first on the scene for PWUOs, their attitudes towards PWUOs, their perceived role in the opioid overdose crisis, and their potential for developing compassion fatigue are important considerations.

### **3 Current study**

In the current study, we examine how officers' attitudes have changed towards naloxone, their role in responding to opioid overdoses and PWUOs, and explore whether those changes are indicative of the development of compassion fatigue over the long term. More specifically, we examine changes in officer attitudes from a few months before officers began carrying naloxone (fall 2019) to more than three years later (spring 2023), with a specific focus on compassion fatigue indicators. To evaluate the compassion fatigue hypothesis, we investigate two research questions:

1) Are officers' attitudes towards naloxone, their role in responding to opioid overdoses, and their perceptions of PWUOs changing over time?

*H1: Officers' attitudes towards their role in responding to opioid overdoses, naloxone, and PWUOs will become more negative over time.*

2) Is opioid overdose response frequency associated with officer attitudes towards their role in responding to opioid overdoses, naloxone, and PWUOs?

*H2: Officers' attitudes towards naloxone, PWUOs, and their role in responding to opioid overdoses will have a negative relationship with opioid overdose response frequency.*

To answer these research questions, we use survey data that capture Tempe, Arizona police officers' attitudes at different time points before and during their involvement in a police-led naloxone program. We employ one-way fixed effects regression models (research question 1) to examine attitudinal change over time across survey waves. We also employ pooled OLS regression models to explore compassion fatigue, specifically, how the frequency of opioid overdose response impacts officers' attitudes (research question 2).

## **4 Methods**

### **4.1 Setting**

Since January 2020, the Tempe Police Department (TPD) has been involved in a collaborative effort with a social service organization – La Frontera EMPACT – to reduce opioid overdose fatalities in Tempe, Arizona. This project, called the Tempe First-Responder Opioid Recovery Project (ORP), is funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). The project trained and outfitted Tempe officers with naloxone in January of 2020, created a 24/7 crisis hotline, and funded social services for overdose survivors and their loved ones. The project works as follows. Police respond to an overdose and administer naloxone or are on scene when Tempe Fire and Medical Rescue (TFMR) administers naloxone. Once the scene is stable, the Tempe police officer contacts the *Tempe First Responder ORP* hotline, which is staffed 24/7 by counselors at EMPACT. The officer provides EMPACT with the relevant information, and a certified peer support specialist responds within one hour to the hospital or the survivor's address/location to make initial contact with the person who experienced the overdose (and their loved ones), collect contact information, and introduce them to the program. Within 24 hours, an EMPACT Post-Crisis Navigator follows up in an effort to engage the individual and their loved ones in services, typically for up to 45 days (for more detail on the *Tempe First Responder ORP*, see: White et al, 2021b).



Since the start of the program, Tempe officers have responded to more than 323 opioid overdose incidents (Watts et al., 2023). Of the 323, 294 individuals have responded positively to the naloxone dose(s) and recovered (91%). Additionally, of those who were able to be contacted, approximately 54% accepted services through La Frontera EMPACT, which exceeds other engagement rates in similar programs (Dahlem et al., 2017; Wagner et al., 2016).

#### 4.2 Data

The data for this study come from multiple waves of surveys administered throughout the duration of the Tempe ORP. The current study aligns with most of the principles and guidelines outlined in the STROBE standards for conducting observational studies (“Strengthening the Reporting of Observational studies in Epidemiology”; see Vandembroucke et al., 2007).<sup>1</sup> We administered wave 1 in October 2019 (n = 239), several months prior to the onset of the program. The second wave of surveys was administered in October of 2020, about 8 months after the project started (n = 117). These two waves were the focus of our prior study looking at officers’ perceptions (White et al., 2021a). The third wave was conducted in November of 2021 (n = 62) and the final wave was administered in March and April of 2023, more than three years after the start of the program (n = 109). The first three waves of surveys were administered electronically through Google Forms. Due to the decline in the response rate in wave 3, we transitioned to hard copy surveys administered in-person for the fourth wave. One of the authors (SW) attended 10 patrol briefings with the project manager at TPD and handed out hard copy surveys to a total of 18 patrol squads (111 officers).

All four waves of surveys were voluntary and anonymous. The survey took approximately 12 to 15 minutes to complete (both electronically and hard copy). The surveys mostly comprised of true/false and Likert scale statements that are on a four-point scale (1 =

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<sup>1</sup> Also see <https://www.strobe-statement.org/>.

strongly disagree, 4 = strongly agree). Additionally, the survey utilizes the OOKS and OOAS scales (Williams et al., 2013) and the NaRRC-B scale (Winograd et al., 2019). The survey also captures officer demographics and self-reported overdose response frequency, details of which are discussed below.

#### 4.3 Dependent variables

We focus on three mean index measures: (1) the role of the police, (2) naloxone related risk-compensation beliefs, and (3) stigma towards PWUOs. These three measures are used to indirectly capture compassion fatigue. Prior research suggests that compassion fatigue can present itself through an increase in professional helplessness or reduction in job satisfaction, increased cynicism, and reduced empathy (Huggard, 2011; Sinclair et al., 2017). Our three measures capture these attitudes within the context of police responding to opioid overdoses.

The role of the police is captured by indexing four items, "I am glad to be carrying naloxone," "Tempe police officers should carry naloxone," "I feel better able to do my job carrying naloxone," and "Police should not respond to overdoses."<sup>2</sup> The items produce a Cronbach's alpha that is above the conventional .70 threshold ( $\alpha = .774$ ).

Naloxone related risk-compensation beliefs are captured with five items, "People will use more if they have access to naloxone," "Users will be less likely to go to treatment due to naloxone," "Limit the number of naloxone administrations per person,"<sup>3</sup> "Naloxone enables PWUDs to continue their use," and "Providing naloxone means I condone opioid use." These items produce a Cronbach's alpha that is above the conventional .70 threshold ( $\alpha = .868$ ).

Stigma towards PWUOs is captured with an index of four items, "People who overdose need to learn a lesson," "People who overdose deserve life-threatening outcomes," "People

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<sup>2</sup> Police should not respond to overdoses is reverse coded.

<sup>3</sup> Limiting the number of naloxone administrations per person refers to "multiple overdose events, do not count repeated dose administrations during one overdose event" (see Winograd et al., 2020).

who overdose are to blame," and "Overdose survivors should be arrested." The items produce a Cronbach's alpha that is just below the conventional threshold of .70 ( $\alpha = .692$ ).

#### 4.4 Independent Variables

There are two primary independent variables in this study. For the first research question, the wave of the survey is the independent variable of interest (i.e., time 1, 2, 3, 4). The wave of the survey is effectively a measure of time which allows for an examination of how time is associated with shifts in attitudes. For the second research question, opioid overdose response frequency is the independent variable of interest (survey item: "How often do you deal with individuals who are experiencing an overdose on opioids/heroin?"). This variable is measured on a five-point scale: "Never (0)," "Rarely (less than once per week) (1)," "Once per week (2)," "Once per shift (3)," and "Multiple times per shift (4)."

Control variables include whether the respondent is a patrol officer (or non-patrol officer [reference]); officer sex (male [reference], female); officer race (White non-Hispanic [reference], Black, Hispanic, Other); officer educational level (associates degree or higher, less than an associate's degree [reference]); time spent with TPD (less than one year [reference], 1-2 years, 3-5 years, 6-10 years, 11+ years); and having ever administered naloxone (yes, no [reference]). We then control for competence at the scene of an overdose, using the item: "I would be able to effectively deal with an overdose." This variable is measured on a four-point Likert scale from completely disagree (1) to completely agree (4) and is treated as a continuous variable in the regression models. Lastly, we control for the wave of the survey (wave 1 [reference], wave 2, wave 3, wave 4) in the pooled regression models.

#### 4.5 Analytical Sample and Plan

The final analytical sample is comprised of 527 respondents across the four waves. However, listwise deletion removes approximately 13% of the sample in the pooled ordinary

least squares (OLS) regression models.<sup>4</sup> The analysis proceeds as follows. First, we present results and summary statistics by survey wave, and we use three one-way fixed effects models to examine change in attitudes across the waves. These will provide estimates for how attitudes have changed across the waves of the survey over the course of the project. Then, to examine the relationship between opioid overdose response frequency and officer attitudes, we run three pooled OLS regression models.

## 5 Results

Table 1 provides a breakdown of the sample descriptive statistics by wave. First, two of the three dependent variables changed notably across the waves. *Role of the police* increased from 2.87 in wave 1 to 3.24 in wave 4, and *stigma towards PWUOs* increased from 2.30 in wave 1 to 2.55 in wave 3 before decreasing to 2.45 in wave 4. *Naloxone-related beliefs* was quite stable across the waves (2.18-2.23). Focusing on the independent variable, frequency of overdose response increased across the waves. “Never having responded to an overdose” declined from wave 1 (19%) to wave 4 (7%) while “responding to an overdose once per week” increased by approximately 8%. The most common response across all four waves was less than once per week (40%-47%). “Ever having administered naloxone” increased across the waves from 2% to 67%. Additionally, respondents were predominately White (70%-89%), male (81%-87%), college educated (67%-83%) and have been at the Tempe Police Department for 11 or more years (32%-70%). The percentage of patrol officers in each wave was stable for waves 1-3 (47%-53% but increased to 85% in wave 4.<sup>5</sup>

[Insert table 1]

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<sup>4</sup> Models 1 and 3 drop 62 observations (13%), Model 2 drops 61 observations (12%).

<sup>5</sup> Because the fourth survey was administered in-person at pre-shift roll calls, the sample in the fourth wave is younger and more likely to be on patrol compared to the first three waves. We control for both variables in the main regression models, and we also run supplemental analysis on a patrol only sample. The results do not change in the supplemental regression model.

Table 2 provides the results from the one-way fixed effects models assessing change in attitudes over time (i.e., across survey waves). Similar to the descriptive findings in Table 1, the survey wave (or time) is associated with changes in attitudes towards *the role of the police* and *stigma towards PWUOs*. Compared to wave 1, there was an increase of .372 ( $p < .01$ ) in wave 4 for officer's support for their role in responding to opioid overdoses. Additionally, compared to wave 1, there was an increase of .249 ( $p < .01$ ) in wave 3 and an increase of .155 ( $p < .05$ ) in wave 4 for stigmatizing perceptions of PWUOs. Although these estimates are statistically significant, their standardized coefficients represent relatively small changes over time.<sup>6</sup> These results indicate Tempe police officers are increasingly supportive of responding to opioid overdoses and carrying naloxone. Yet, they have also developed more negative attitudes towards PWUOs over time – which is consistent with the onset of compassion fatigue. Figure 1 provides a visualization of the unstandardized estimates across the waves of surveys.

[Insert table 2]

[Insert figure 1]

Table 3 presents the coefficients for the pooled OLS regression models. The primary independent variable - opioid overdose response frequency - was not associated with any of the three outcomes of interest (role of the police, naloxone-related beliefs, stigma towards PWUOs). This finding suggests that once controlling for other variables, compassion fatigue is not present among Tempe police officers.

Several control variables are associated with the three outcomes of interest. Ever having administered naloxone and competence in handling an opioid overdose was positively associated with support of the police role in handling opioid overdoses. However, having a college degree or a longer tenure at TPD was associated with less support in the role of the

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<sup>6</sup> *The role of the police* wave 3 ( $\beta = .08$ ), wave 4 ( $\beta = .24$ ). *Stigma towards PWUOs* wave 3 ( $\beta = .14$ ), wave 4 ( $\beta = .11$ ).

police in responding to opioid overdoses. Those who have been with TPD for 6-10 years displayed more naloxone related risk-compensation beliefs than those who had less than 1 year on the job. Being competent in handling an opioid overdose was associated with an increase in negative attitudes towards PWUOs. Lastly, being female was a protective factor against stigmatizing views of PWUOs. We discuss the findings in more detail below.

[Insert table 3]

## 6 Discussion

In this repeated cross-sectional survey study, we investigate the compassion fatigue hypothesis within the context of police responding to opioid overdoses. We examine officer perceptions over three years using two approaches, and we find mixed evidence of compassion fatigue. First, the one-way fixed effects models provided mixed support for the first hypothesis. Officers' perceptions of *the role of the police* and *stigma towards PWUOs* did change over time. *Naloxone-related beliefs* did not change over time. Like previous work in this area, police officers generally had a positive view of naloxone and their role in saving lives (Pourtaher et al., 2022; Reichert et al., 2023; White et al., 2021a). The increased support for their role in responding to opioid overdoses over the study period may be related to the effectiveness of naloxone (White et al., 2022) or the effective working relationship with EMPACT, the social service organization that engages in post-overdose outreach with officers from the department (White et al., 2021b).

Interestingly, the largest increase in positive officer attitudes towards their role in responding to overdoses is accompanied by a compositional change in the sample for wave 4. Respondents in this wave are younger, less likely to have a college degree, and more likely to be a patrol officer. The wave 4 sample includes those officers most likely to respond to opioid overdoses. Other work has demonstrated negative relationships between these covariates and

officer attitudes towards opioid related issues (Kruis et al., 2020; Reichert et al., 2023). That is not the case among Tempe officers.

On the other hand, *stigma towards PWUOs* increases over time. While officers increasingly embrace overdose response as a part of their role, their attitudes towards those who use drugs become more negative. But our second set of analyses show these negative attitudes are unrelated to the frequency of opioid overdose responses. Rather, gender played a role, as women were less likely to develop negative attitudes towards PWUOs.

Overall, opioid overdose response was not associated with diminished attitudes towards the police role and naloxone, or with increased stigma towards PWUOs. These findings contradict the compassion fatigue hypothesis. The results also run counter to the handful of prior studies reporting an association between opioid overdose response frequency and increased negative attitudes/perceptions (Carroll et al., 2020; Murphy & Russell, 2020, 2021). It may be the case that Tempe officers have bought-in to the role of responding to overdoses and administering naloxone. Prior to the start of the Tempe First Responder ORP, White et al. (2021a) show that some officers felt a sense of futility when on scene at an overdose without naloxone, like studies in other jurisdictions (Smiley-McDonald et al., 2022). Having naloxone may be viewed as a tool that officers are able to use quickly and easily to save lives (Lloyd et al., 2023). In fact, our study found that the covariate, “Ever having administered naloxone,” was associated with an increase in support for officers' role in responding to opioid overdoses.

Moreover, Tempe PD's collaborative overdose response program with La Frontera EMPACT may serve as a protective factor against compassion fatigue. Through this collaboration, Tempe PD officers reverse the overdose and connect the victim to a social service provider that relies on outreach workers with lived experience to communicate with the overdose survivor and their loved ones. This allows the police officer to disengage from the incident and go to the next call, potentially making compassion fatigue less likely. As police and

public health collaborative approaches to address substance use problems grow (Ray et al., 2023a), future research should investigate the compassion fatigue hypothesis among those officers in co-response models.

Additional covariate associations emerged that affect the endorsement of the police role in opioid overdoses and the development of negative attitudes towards PWUOs. Those who had higher levels of competence in handling an overdose were more likely to endorse the police role in opioid overdoses but also developed negative attitudes towards PWUOs. Similar to the analysis of the first two waves of surveys (White et al., 2021a), those with a college degree and those who had been at the department longer (2-5, 6-10, and 11+ years) had more negative attitudes towards the police role in opioid overdoses. These are at odds with some prior work, particularly for education (Jorgensen, 2018).

## 6.1 Limitations

The present study offers an analysis of the perspectives of Tempe police officers over the span of approximately three years. However, several limitations warrant discussion. First, the cross sectional between-subjects design of this study only examines aggregate mean trends across waves. While this approach is informative, we are unable to measure within-subject variance over time. Future studies that examine the compassion fatigue hypothesis should attempt to overcome this limitation by creating a panel dataset of officer attitudes. Second, these attitudes may not be generalizable to other jurisdictions. The study is based on officer attitudes from one medium-sized police department in the southwest. Also, TPD is known for its focus on evidence-based practices and willingness to collaborate with researchers (e.g., they have participated in two randomized controlled trials with the authors), which may introduce a selection effect. Specifically, departments not frequently engaged in research partnerships may be qualitatively different than TPD. One issue related to this point is officers' willingness to complete surveys. In a "research-friendly" department, officers may be used to completing



surveys without suspicion or reluctance. The same may not be the case in a department that has not collaborated with researchers in the past (or has done so sparingly).

Fourth, the declining response rate from wave 1 to wave 3 limits our ability to generalize to the department as a whole. The reasons for the declining response rate could be due to the murder of George Floyd and the subsequent protests across the country (as well as in Tempe), or it could be due to survey fatigue. Fourth, the last survey wave relied on in-person, hard copy administered surveys that were completed in tandem with “Narcan life-saving awards” being handed out by the project manager at Tempe PD. The first three survey waves were administered online. The context surrounding the administration of the final wave of surveys could increase the chance of social desirability impacting officers’ responses. Because the project manager, the awards, and one of the authors were present, this could have prompted the officers to respond more positively to survey items. However, whether this occurred or to what extent is unknown.

Fifth, we were not able to test for an association between geographic area of patrol and officer attitudes. It may be the case that certain characteristics of neighborhoods or beats impact officers' perceptions of PWUOs, naloxone, and their role in the opioid overdose crisis. Future research should investigate the role of place in influencing officer perceptions related to the opioid crisis. Lastly, we do not employ a validated compassion fatigue scale. Instead, we build on prior work looking at officers’ perceptions of their role in responding to opioid overdoses, perceptions of naloxone, and stigmatizing views of PWUOs. Based on the compassion fatigue literature, workplace dissatisfaction, increased cynicism, and less empathy could be suggestive of compassion fatigue. Likewise, our measure of stigma is not a validated direct measure of stigma. It is a proxy for stigma using items from the OOKS, OOAS, and NaRRC-B scales (Williams et al., 2013; Winograd et al., 2019).

Future research should adopt validated measures of stigma and compassion fatigue to employ in surveys of police officers.

## 6.2 Implications

There is little evidence of compassion fatigue among Tempe police officers after more than three years of opioid overdose response. The Tempe experience does offer some lessons for other departments struggling with the opioid crisis, and more specifically, with the potential onset of compassion fatigue. For program implementation and sustainability, patrol-level officer buy-in is an essential ingredient to a successful program. To facilitate this buy-in, broad department culture and immediate supervisor perceptions of these issues are also likely to be important factors (Del Pozo et al., 2024; Marotta et al., 2023). Tempe Police Department had an internal champion guiding the trainings and garnering support within the department. TPD emphasized a harm reduction philosophy (arrests were made in less than five percent of incidents and only when there was a felony warrant), and they partnered with a social service agency to immediately respond to overdose scenes. Officers simply had to call the hotline, and then hand off the survivor to EMPACT and the Tempe Fire Medical Rescue team. The approach taken by TPD, and the department's philosophy more generally, likely minimized the potential for compassion fatigue and reinforced officers' views of their role in responding to opioid overdoses.

Additionally, periodic refresher training modules for officers that cover substance use, myths and stigmatization of PWUOs, and naloxone are likely to play an important role. Training has been shown to combat opioid myths surrounding fentanyl (Del Pozo et al., 2021), and it may also improve officer perceptions of PWUOs, particularly concerning stigmatizing views (Winograd et al., 2019). If stigmatizing perceptions are associated with an increase in punitive outcomes, more harm will be created (Binswanger et al., 2016; Ray et al., 2023b) and the public-health approach of connecting PWUOs with potentially useful services will be thwarted.

The implications of stigmatizing attitudes, or compassion fatigue more generally, among police in overdose response are complex and understudied. The most acute consequences of stigmatizing attitudes, or compassion fatigue, would be refusing to administer naloxone at an overdose, which could be fatal, or criminalizing an overdose through arrest. Other consequences could be avoiding a call or delaying to respond, hesitating to administer naloxone, or treating people unprofessionally at the scene (e.g., displaying rudeness or aggression), which affects community member satisfaction with the police, escalates conflicts, and reduces the likelihood of calling 911 for an overdose. These behaviors could jeopardize both the lives of individuals experiencing an overdose and the police-community relationship through reduced legitimacy. Additional research is needed to explore these issues surrounding compassion fatigue and overdose response in the police setting.

## **7 Conclusion**

Tempe police officers seem to have bought-in to the role of carrying and administering naloxone. The continued and increased support of their role in responding to overdoses over a more than three-year period is notable and challenges results from prior studies. Likewise, they did not develop increased risk-compensation beliefs towards naloxone over the course of the four waves of the survey. Officers' attitudes over time did reflect increased stigma of PWUOs, though this change was not driven by the frequency of overdose response. This contradiction in attitudes – increased support for responding to overdoses and increased stigma of PWUOs – warrants further study. As such, the present study does not find evidence of a compassion fatigue effect. These findings are important, given the persistent and increasing severity of the opioid crisis across the United States, the likelihood police arriving first on scene at overdoses (White et al., 2022), and the rapid expansion of naloxone and police-led naloxone programs (Ray et al., 2023a). The findings here demonstrate that Tempe police continue to perceive themselves as having an important role in the opioid overdose crisis. That role is grounded in

harm reduction, and it centers on police officers carrying and administering naloxone and collaborating with community behavior health providers to engage overdose survivors with treatment and other services to improve their lives.

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Table 1. Summary Statistics by Wave

	1		2		3		4	
<i>Dependent Variables</i>								
Role of the police	2.87	(0.63)	2.97	(0.57)	3.02	(0.74)	3.24	(0.53)
Naloxone related beliefs	2.18	(0.55)	2.23	(0.60)	2.21	(0.64)	2.23	(0.50)
Stigma towards PWUOs	2.30	(0.56)	2.39	(0.60)	2.55	(0.62)	2.45	(0.60)
<i>OD Response Frequency</i>								
Never	0.19	(0.39)	0.17	(0.38)	0.13	(0.34)	0.07	(0.26)
Rarely (less than once per week)	0.47	(0.50)	0.43	(0.50)	0.40	(0.49)	0.47	(0.50)
Once per week	0.29	(0.45)	0.32	(0.47)	0.39	(0.49)	0.37	(0.49)
Once per shift	0.04	(0.19)	0.07	(0.25)	0.06	(0.25)	0.06	(0.23)
Multiple times per shift	0.01	(0.11)	0.02	(0.13)	0.02	(0.13)	0.03	(0.17)
<i>Control Variables</i>								
Ever administered naloxone	0.02	(0.14)	0.22	(0.41)	0.45	(0.50)	0.67	(0.47)
Patrol	0.47	(0.50)	0.53	(0.50)	0.53	(0.50)	0.85	(0.36)
Female	0.16	(0.37)	0.14	(0.34)	0.18	(0.38)	0.19	(0.39)
White	0.78	(0.41)	0.75	(0.44)	0.89	(0.31)	0.70	(0.46)
Black	0.04	(0.19)	0.03	(0.17)	0.00	(0.00)	0.07	(0.26)
Hispanic	0.13	(0.34)	0.17	(0.37)	0.07	(0.26)	0.18	(0.38)
Other	0.05	(0.21)	0.06	(0.23)	0.04	(0.19)	0.05	(0.22)
College degree	0.79	(0.41)	0.80	(0.40)	0.82	(0.38)	0.67	(0.47)
Competence at an overdose	2.48	(0.72)	3.10	(0.66)	3.40	(0.61)	3.51	(0.52)
<i>Time at Tempe PD</i>								
Less than 1 year	0.04	(0.20)	0.01	(0.09)	0.00	(0.00)	0.14	(0.34)
1-2 years	0.07	(0.25)	0.04	(0.20)	0.03	(0.18)	0.14	(0.34)
2-5 years	0.17	(0.38)	0.13	(0.34)	0.03	(0.18)	0.20	(0.40)
6-10 years	0.12	(0.32)	0.11	(0.32)	0.25	(0.44)	0.20	(0.40)
11+ years	0.60	(0.49)	0.70	(0.46)	0.68	(0.47)	0.32	(0.47)

Mean, Standard deviation in parentheses; Wave 1 (n = 239), Wave 2 (n = 117), Wave 3 (n = 62), Wave 4 (n = 109)

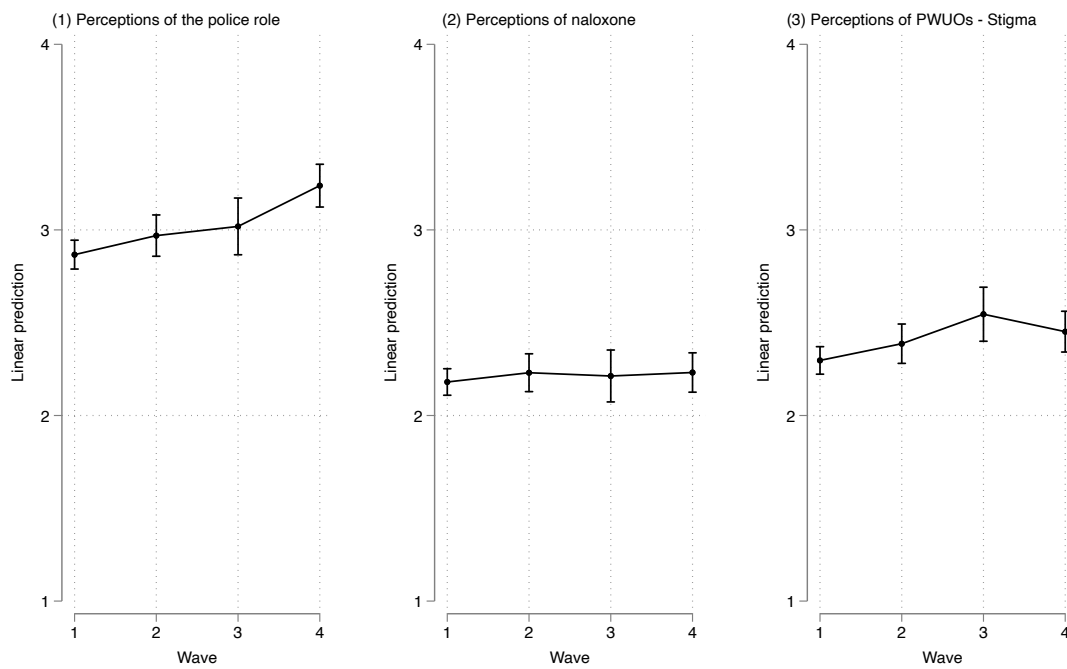
Table 2. One-Way Fixed Effects Models

	(1) Role of the police	(2) Naloxone related beliefs	(3) Stigma towards PWUOs
Wave 2	0.103 (0.069)	0.050 (0.063)	0.090 (0.066)
Wave 3	0.152 (0.087)	0.032 (0.080)	0.249** (0.083)
Wave 4	0.372*** (0.071)	0.051 (0.065)	0.155* (0.067)
Constant	2.867*** (0.040)	2.181*** (0.036)	2.297*** (0.038)
Observations	527	525	527
$R^2$	0.051	0.002	0.022

Standard errors in parentheses, Reference = Wave 1

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Figure 1. One-Way Fixed Effects Models



Note: higher values = higher levels of negativity in models (2) and (3)

Table 3. Pooled OLS Regression Models

	Role of the Police <sup>a</sup>		Naloxone Related Beliefs <sup>b</sup>		Stigma towards PWUOs <sup>c</sup>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>OD Response Frequency</i>						
Rarely (less than once per week)	0.070 (0.082)	0.024 (0.082)	-0.048 (0.074)	-0.076 (0.076)	-0.003 (0.076)	-0.101 (0.078)
Once per week	0.091 (0.083)	0.000 (0.091)	0.048 (0.076)	-0.005 (0.088)	0.045 (0.080)	-0.069 (0.091)
Once per shift	0.008 (0.170)	0.034 (0.167)	0.100 (0.135)	0.010 (0.133)	0.040 (0.131)	-0.113 (0.138)
Multiple times per shift	-0.233 (0.259)	-0.246 (0.262)	0.203 (0.167)	0.042 (0.206)	-0.090 (0.207)	-0.008 (0.213)
<i>Control Variables</i>						
Ever administered naloxone		0.190** (0.068)		-0.094 (0.076)		-0.035 (0.078)
Patrol		-0.095 (0.066)		0.081 (0.061)		0.034 (0.063)
Black		0.220 (0.134)		0.040 (0.134)		-0.134 (0.139)
Hispanic		-0.001 (0.070)		0.119 (0.073)		-0.009 (0.075)
Other		-0.059 (0.119)		0.096 (0.121)		0.079 (0.125)
Female		0.070 (0.075)		0.072 (0.069)		-0.158* (0.072)
College degree		-0.173** (0.062)		-0.054 (0.061)		-0.030 (0.063)
Competence at an overdose		0.172** (0.053)		-0.042 (0.040)		0.099* (0.041)
<i>Time at Tempe PD</i>						
1-2 years		-0.137 (0.103)		0.180 (0.145)		-0.026 (0.150)
2-5 years		-0.240*		0.199		0.001

		(0.115)		(0.133)		(0.138)
6-10 years		-0.419***		0.303*		0.028
		(0.114)		(0.133)		(0.138)
11+ years		-0.318**		0.114		-0.040
		(0.096)		(0.121)		(0.125)
Wave						
Wave 2		0.012		0.037		0.053
		(0.071)		(0.070)		(0.072)
Wave 3		0.046		0.042		0.119
		(0.110)		(0.094)		(0.098)
Wave 4		0.051		0.067		0.066
		(0.092)		(0.090)		(0.093)
Constant	2.927***	2.901***	2.204***	2.130***	2.367***	2.153***
	(0.071)	(0.179)	(0.064)	(0.164)	(0.066)	(0.170)
Observations	524	459	522	458	524	459
$R^2$	0.006	0.164	0.010	0.050	0.002	0.051

<sup>a,b</sup> Robust standard errors; <sup>c</sup> Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$



