

RESEARCH REPORTS

ATTITUDES OF FIRST RESPONDERS TOWARDS SUPERVISED CONSUMPTION SERVICES FOR PEOPLE WHO USE DRUGS: A CROSS-SECTIONAL SURVEY USING MORAL FOUNDATIONS THEORY

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Recommended Citation: Pijl, E., McDonald, N., Weldon, E., Dryden, R., Golding, M., Fries, C., Serieux, J., Shaw, S., Souleymanov, R., Guest, C., & Mexico, J. (2026). Attitudes of first responders towards supervised consumption services for people who use drugs: A cross-sectional survey using moral foundations theory. *International Journal of Paramedicine*. (14). 98-111. <https://doi.org/10.56068/EIYD5296>

Keywords: firefighters, paramedics, first responders, moral foundations theory, supervised consumption services, harm reduction, emergency medical services, EMS, paramedicine

Disclosures: The authors declare no competing interests.

Funding: Funding was provided by a University of Manitoba University Collaborative Research Program.

Received: January 8, 2026

Revised: February 9, 2026

Accepted: February 20, 2026

Published: April 14, 2026

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Abstract

Objectives: This study aimed to determine the degree to which first responders' moral foundations predict attitudes toward supervised consumption services (SCS).

Methods: This cross-sectional study surveyed first responders working in Winnipeg, Canada. The survey used validated instruments to explore attitudes toward SCS using moral foundations theory (MFT). We used correlation, ANOVA, and multiple OLS and logistic mediated regression techniques to test our hypotheses. We used first responders' professional designation (0 = firefighter, 1 = paramedic), and the Moral Foundations Questionnaire as the primary predictor and mediator variables, respectively. Attitudes towards SCS (1 = strongly oppose, 5 = strongly support) served as the primary dependent variable. We transformed this dependent variable by removing responses of 'neither oppose nor support' to test an additional logistic mediated regression model.

Results: Paramedics (n=91) had higher levels of individualizing moral foundations and lower levels of binding moral foundations relative to firefighters (n=51). Individualizing moral foundations predicted greater support for SCS, whereas binding moral foundations predicted lower support. These two categories of moral foundations mediated relationships between first responders' professional designation and their support for SCS.

Conclusions: Paramedics and firefighters differ in their moral foundations and level of support for SCS. These findings can inform policymakers and decision-makers in developing strategies to consider first responders as essential stakeholders in implementing SCS.

Supervised consumption services (SCS) are safe spaces for people who use drugs (PWUD) to consume substances bought off-site under the supervision of health care professionals. They often provide ancillary services such as medical care, substance

use treatment, case management, and counseling. Research shows that SCS are cost-effective ways to decrease mortality from substance use, increase access to addiction treatment and medical care, reduce rates of viral transmission, and decrease substance use and syringe litter in public (Kennedy et al., 2017; Kral & Davidson, 2017; Kral et al., 2020; Lange & Bach-Mortensen, 2019; Potier et al., 2014; Wood et al., 2004). Among approximately 120 SCS worldwide, no fatal overdoses have been recorded (Kral et al., 2020). Support for SCS among community members and public sector professionals, such as first responders, is critical to implementing these services effectively (Lange & Bach-Mortensen, 2019; Strike et al., 2015).

Emergency medical technicians, paramedics, and firefighters have unique insight into the burden of substance use in their communities because of their daily work with PWUD, but only a small body of literature has examined their attitudes toward SCS. Existing studies outline a range of views and opinions, covering concerns related to implementation, accompanying services, impact on the community, and effect on responder call volume and work experience (Fockele et al., 2024; Pennington et al., 2021; Pennington et al., 2023; Perlmutter et al., 2023; Taverner & OACP Substance Abuse Committee, 2012; Watson et al., 2012). Among different settings and designs, these studies highlight both positive and negative views towards SCS, as well as the collaborative nature of stakeholder involvement in SCS implementation (Kryszajtyś et al., 2022; Lange & Bach-Mortensen, 2019; Pennington et al., 2021; Pennington et al., 2023; Taverner & OACP Substance Abuse Committee, 2012; Watson et al., 2012). Additionally, Pennington et al. (2021) identified a sense of duty as the most common shared theme among firefighters working close to an SCS, indicating that the moral foundations of these responders are closely linked to their attitudes to SCS. This finding connects to a growing body of research that explores differences in personal values and their relationship to divergent opinions towards PWUD in general and SCS in particular. One approach to this research employs Moral Foundations Theory (MFT), a social psychological theory that posits that people's moral concerns do not originate from conscious cognition (Haidt, 2001), but rather from the extent to which they value and prioritize five moral foundations: care/harm, fairness/cheating, loyalty/betrayal, authority/subversion, and purity/contamination (Graham et al., 2008; Graham et al., 2009). Simply put, MFT posits that a person's underlying value system triggers strong emotions like anger, contempt, and disgust in response to a perceived moral violation. Widely deployed in a variety of settings, MFT has recently been applied to the public's view of harm reduction measures (Christie et al., 2019; Pijl et al., 2025), but not specifically to emergency responders.

The five interrelated moral foundations can be broadly organized into the categories of individualizing moral foundations and binding moral foundations (Graham et al., 2009; Haidt et al., 2009). Individualizing moral foundations combine the care/harm and fairness/cheating moral foundations, whereas binding moral foundations combine the loyalty/betrayal, authority/subversion, and purity/contamination moral foundations (Nilsson, 2023; Zakharin & Bates, 2021). Individualizing moral foundations focus on fostering the dignity, agency, and health of every individual; binding moral foundations focus on protecting the safety, order, and health of the community and/or group (Davies et al., 2014; Graham et al., 2009). Individualizing foundations are positively associated with politically liberal ideologies, as well as general support for SCS and other harm reduction strategies, whereas binding foundations are positively associated with politically conser-

vative ideologies as well as general opposition towards SCS and other harm reduction strategies (Christie et al., 2019; Davies et al., 2014; Pijl et al., 2025; Zakharin & Bates, 2021).

SCS implementation has been extensively debated across local, regional, and national levels. In a context where substance use continues to exact a social cost and burden emergency resources, policy makers require evidence that can inform policy solutions. Existing research explicitly calls for more research related to the impact of underlying attitudes on views toward SCS as well as perspectives of different responder roles (Perlmutter et al., 2023). Therefore, the purpose of our study was to address this research gap and describe attitudes of firefighters and paramedics towards SCS and their relationship with MFT.

METHODS

DESIGN AND SETTING

This is a cross-sectional survey of employees of an emergency medical services (EMS) agency in central Canada. The Winnipeg Fire Paramedic Service (WFPS) provides emergency fire and medical coverage for the city of Winnipeg, Manitoba (population approximately 750,000) and responded to over 140,000 total calls for service per year at the time of the study (City of Winnipeg Fire and Paramedic Service, 2021). With approximately 1,200 employees in all roles, it uses a tiered-response model for medical calls. Within the overall organization, the Fire Department delivers basic life support (BLS) first response on apparatus staffed by firefighters and cross-trained firefighter-paramedics. The emergency medical services division provides mixed BLS and advanced life support (ALS) continuing care and transport by ambulance. Under national licensing terminology, BLS and ALS providers in this service are Primary Care and Advanced Care paramedics, respectively, and are generally referred to as paramedics with additional designation for role (firefighter-paramedic).

Reporting of this study conforms to the Checklist for Reporting of Survey Studies (CROSS; Sharma et al., 2021). Study conduct was overseen by the University of Manitoba Research Ethics Board (HE2022-0328).

DATA COLLECTION

The survey instrument consisted of six sections with 88 questions in total. (The survey is available as Supplemental File 1: Survey Instrument.) Questions reflected a mix of choice among pre-determined responses (such as professional role), Likert-scale answers, and 3 long answers. Participants completed one section related to demographic information (15 questions); remaining sections reproduced existing and previously validated instruments related to MFT (30 questions), stigma (9 questions), and attitudes towards and proximity to people who use drugs (PWUD; 14 questions), and posed direct questions related to professional designation (5 questions) and to attitudes towards SCS (10 questions).

As part of Section 2 of the survey, participants completed the Moral Foundations Questionnaire (MFQ 30; Davies et al., 2014; Graham et al., 2009). This is a 30-item self-report measure that assesses the extent to which individuals prioritize five moral domains: care/harm, fairness/cheating, loyalty/betrayal, authority/subversion, and purity/con-

tamination (Davies et al., 2014). The instrument consists of two 15-item (plus two attention-check questions) subscales, each of which is scored on a 7-point Likert scale. The first subscale assesses the relevance respondents ascribe to each foundation in response to the following prompt: “When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking?” The second subscale requires respondents to indicate the degree to which they agree or disagree with a range of moral statements (Davies et al., 2014; Graham et al., 2008; Graham et al., 2011).

Prior research reports Cronbach’s alpha values for the five moral foundation subscales ranging from poor to good based on standard conventions: care/harm=0.61; fairness/cheating =0.59; loyalty/betrayal=0.61; authority/subversion=0.61; purity/contamination=0.76 (Nilsson, 2023; Zakharin & Bates, 2021). However, in keeping with theoretical considerations (Graham et al., 2009) and past research (Alper & Yilmaz, 2019; Barnett et al., 2018; Christie et al., 2019), combining the care/harm and fairness/cheating subscales into an individualizing moral foundations scale, and the loyalty/betrayal, authority/subversion, and purity/contamination subscales into a binding moral foundations scale greatly improved psychometric reliability (individualizing moral foundations Cronbach’s $\alpha = 0.77$; binding moral foundations Cronbach’s $\alpha = 0.84$).

After consultation with senior WFPS leadership and first responder labor groups, we disseminated the survey via memo, emails, and posters. Recruitment began in June 2023, with reminder emails sent in September 2023. The survey was administered electronically using Qualtrics Research Suite®. It was voluntary, anonymous, and accessible via direct link via respondents’ work email and QR codes. Participants had the opportunity to register for a \$20 gift card in recognition of their time, with no connection between identifying information and survey responses. To avoid duplicate entries into the study, we asked respondents to declare, following the consent checkbox, that they had not previously completed the survey; we were unable to eliminate duplicate entries by IP address as many respondents completed the survey while at their place of work with a shared IP address. As no prior research has applied MFT to this population, no sample size calculation was performed. The survey closed in December 2023.

STATISTICAL ANALYSIS

Our primary goals were twofold. We sought to assess: (1) the degree to which first responders’ moral foundations predict attitudes toward SCS; and (2) whether differences between firefighters and paramedics in their moral foundations could explain their views towards SCS. As such, our a priori hypotheses were as follows: [H₁] Paramedics, as the professional designation whose training involves greater focus on providing immediate medical attention to individuals, will report greater support for SCS; [H₂] Paramedics will have higher levels of individualizing moral foundations and lower levels of binding moral foundations relative to firefighters; [H₃] Individualizing moral foundations will positively predict support for SCS and binding moral foundations will negatively predict support for SCS; [H₄] Moral foundations will mediate the relationships between first responders’ professional designation and their support for SCS.

Participant characteristics (age, gender, education, role) are presented with descriptive statistics. To explore associations between moral foundations and attitudes towards SCS, we first used univariate analysis of variance (ANOVA) to determine how to categorize

firefighter-paramedics. Although they are cross-trained, firefighter-paramedics are organized and operate within the Fire Department in all phases of their work; this alignment informed initial exploration of their categorization.

After coding all participants by professional role, we then collapsed results from the MFT questionnaire into binding and individualizing domains. Participants reported their support or opposition to SCS in response to the following prompt "Overall, how supportive are you of supervised consumption services for people who use drugs?" (1 = strongly oppose; 5 = strongly support). A plurality of firefighters (42%) reported strong opposition to SCS whereas a plurality of paramedics reported strong support (41%). Firefighter-paramedics had a relatively even distribution across response options (see Supplemental Figure 1 for full details). We also transformed this variable from its original 5-point scale into a dichotomous variable by re-coding responses of 'strongly oppose' and 'somewhat oppose', and responses of 'strongly support' and 'somewhat support' into (0 = oppose, 1 = support). For this transformation, we removed 16 responses of 'neither oppose or support,' and treated them as missing data. The continuous support variable was used in all analyses except for the logistic regression model.

We first analyzed the correlations between role and support for SCS. We next assessed the indirect predictive associations between first responders' professional designation via individualizing and binding moral foundations on support for SCS in two parallel mediation models (one OLS regression model and one logistic regression model). The logistic regression model using the dichotomous support for/against SCS was included to provide further context and complementary results to the primary regression model. This logistic regression model allows for greater ecological validity of inference regarding the relationships between professional designation, moral foundations, and the odds of either supporting or opposing SCS. We examined the indirect predictive relationships of the regression-based path models based on 5000 bootstrap samples (Hayes, 2013).

Among incomplete responses, age was the variable with the highest number of missing entries ($n=10$), which represented 6% of the total sample. We performed Little's missing completely at random (MCAR) test for missing data (Little, 1988). Little's test was not significant ($p = .298$), indicating MCAR data. Given the low number of missing entries, we followed the recommendations of Meyers et al (2017) by using listwise deletion where applicable. All analyses were performed with IBM SPSS Statistics version 29.0.2.0.

RESULTS

A total of 165 first responders participated in this study (approximate response rate of 14%). Of these, 51 were firefighters, 91 were paramedics, and 23 were firefighter-paramedics. The mean age was 42 (range = 24-68). The majority of first responders were male (70.3%) and had a diploma or higher level of education (50.9%). The remaining sample had either a certificate or completed high school (49.1%).

ANOVA testing showed that firefighter-paramedics did not differ from firefighters in terms of individualizing moral foundations ($M_s = 38.00$ vs. 37.43 , $p = .78$), binding moral foundations ($M_s = 48.52$ vs. 48.47 , $p = .987$), gender ($M_s = 1.00$ vs. 1.21 , $p = .11$), or education ($M_s = 2.64$ vs. 2.83 , $p = .50$). Similarly, firefighter-paramedics did not differ from paramedics regarding individualizing moral foundations ($M_s = 38.00$ vs. 40.65 , $p = .16$), or education ($M_s = 2.64$ vs. 3.03 , $p = .14$). However, firefighter-paramedics had signifi-

cantly higher binding moral foundations than paramedics (Ms = 48.52 vs. 41.10, $p < .001$), and a greater proportion were males (Ms = 1.00 vs. 1.40, $p = .001$). Thus, we classified firefighter-paramedics as firefighters for all subsequent analyses, driven largely by their similar scores on binding moral foundations. Firefighter-paramedics were significantly younger ($M = 35.52$) than both firefighters ($M = 40.15$, $p = .02$) and paramedics ($M = 47.88$, $p < .001$).

CORRELATIONS (TABLE 1)

As predicted, first responders' professional designation correlated with their moral foundations, such that paramedics had higher levels of individualizing ($r = .19$, $p < .001$), and lower levels of binding ($r = -.29$, $p < .001$) moral foundations. In further support of our hypotheses, individualizing moral foundations had a positive association with support for SCS ($r = .34$, $p < .001$), whereas binding moral foundations showed a virtually equivalent but opposite relationship ($r = -.36$, $p < .001$).

Variable	1	2	3	4	5	6	7
1. Age	-						
2. Gender	.05	-					
3. Education	.13	.16*	-				
4. Professional Designation	-.20*	.24*	.12	-			
5. Individualizing Foundations	-.13	-.07	-.09*	.19*	-		
6. Binding Foundations	.06*	-.21*	-.13	-.29*	.14	-	
7. Support for Supervised Consumptions Services (SCS)	-.23*	.04	-.05	.31*	.34*	-.36*	-
M	41.72	1.29	2.92	.55	39.28	44.41	3.17
SD	9.08	.53	1.12	.50	8.22	12.92	1.61

Note: Correlations were calculated using pairwise deletion N range = 155-161. Firefighters coded as 0, paramedics coded as 1. Males coded as 1, females coded as 2.
* $p < .05$ (two-tailed tests).

Table 1. Zero-order correlations of study variables.

MEDIATION MODELS (TABLE 2, FIGURES 1 & 2)

In support of our hypotheses [H_{2-4}], we found that the designation of paramedic (vs. firefighter) predicted an increase in individualizing moral foundations [$\beta = .40$, $p = .020$, 95% CI = .063 to .729] and a decrease in binding moral foundations [$\beta = -.51$, $p = .002$, 95% CI = -.834, to -.183]. In turn, individualizing moral foundations predicted higher levels of support for SCS [$\beta = .51$, $p < .001$, 95% CI = .281 to .735] and binding moral foundations predicted lower levels of support for SCS [$\beta = -.65$, $p < .001$, 95% CI = -.834, to -.183]. Accordingly, the indirect association with being a paramedic (vs. firefighter) through individualizing moral foundations was significant in a positive direction [$\beta = .20$, 95% CI = .250 to .841], as was the indirect relationship through binding moral foundations [$\beta = .33$, 95% CI = .128 to .607]. Contrary to our hypothesis [H_1], the direct predictive effect of professional designation was not significant [$\beta = .37$, $p = .134$, 95% CI = -.117 to .863].

An additional logistic regression model using the transformed dichotomous measure of support (vs. opposition) to SCS replicated our first model, with stronger results. Specifically, being a paramedic (vs. firefighter) predicted higher individualizing moral foundations [$\beta = .51$, $p = .005$, 95% CI = .157 to .855], and lower binding moral foundations [$\beta = -.51$, $p = .005$, 95% CI = -.851, to -.152]. These foundations predicted increased odds of supporting SCS [OR = 2.19, $p = .002$, 95% CI = 1.378 to 3.509], and decreased odds of supporting SCS [OR = 0.38, $p = .002$, 95% CI = .237 to .620], respectively. In accordance with the first model, the indirect relationships between professional designation (paramedic vs. firefighter) through individualizing and binding moral foundations both significant-

ly predicted increased odds for support of SCS [OR = 1.49, 95% CI = 1.048 to 2.476; OR = 1.62, 95% CI = 1.176 to 3.055, respectively]. Once again, professional designation did not have a significant direct predictive effect on support for SCS [OR = 2.34, 95% CI = .959 to 5.725].

EXPLORATORY MEDIATION MODELS

To further explore unique characteristics associated with first responders’ professional designation, we tested supplemental parallel OLS and logistic parallel mediation models that examined firefighter-paramedics as a separate independent group. Results remained consistent in models examining potential differences between paramedics and firefighter-paramedics; paramedics were predicted to have higher individualizing moral foundations, and lower binding moral foundations relative to firefighter-paramedics. Firefighters were predicted to have slightly higher levels of both individualizing and binding moral foundations relative to firefighter-paramedics. These relationships were not statistically significant, likely due to the decrease in statistical power caused by the substantial reduction in sample size.

DISCUSSION

This study examined the attitudes of firefighters and paramedics in a mid-size Canadian city toward SCS, and the relationships between these attitudes and moral foundations. We found that paramedics had higher levels of individualizing moral foundations, and lower levels of binding moral foundations relative to firefighters. The magnitude of these associations was substantial, with paramedics (vs. firefighters) predicted to have one-half of a standard deviation difference for both categories of moral foundations. Similarly, a

Predictor variable	Individualizing Foundations		Binding Foundations		Support for SCS (Continuous)	
	β	95% CI	β	95% CI	β	95% CI
Age	-.07	-.229, .092	.03	-.131, .183	-.21	-.434, .015
Gender	-.20	-.497, .106	-.26	-.552, .038	-.10	-.525, .327
Education	-.08	-.222, .060	-.07	-.203, .072	-.08	-.279, .116
Professional Designation	.40*	.063, .729	-.51*	-.834, -.183	.37	-.117, .863
Individualizing Foundations	-	-	-	-	.51*	.281, .735
Binding Foundations	-	-	-	-	-.65*	-.887, -.423
R2	.06		.12		.33	
Predictor variable	Individualizing Foundations		Binding Foundations		Support for SCS (Dichotomous)	
	β	95% CI	β	95% CI	OR	95% CI
Age	-.07	-.235, .093	.04	-.126, .203	0.70	.464, 1.066
Gender	-.20	-.521, .115	-.20	-.516, .121	0.74	.275, 2.021
Education	-.12	-.267, .033	-.09	-.241, .060	0.88	.600, 1.276
Professional Designation	.51*	.157, .855	-.50*	-.851, -.152	2.34	.959, 5.725
Individualizing Foundations	-	-	-	-	2.19*	1.378, 3.509
Binding Foundations	-	-	-	-	0.38*	.237, .620
R2	.09		.11		.38	

Note: SCS = Supervised Consumption Services; CI = confidence interval; OR = odds ratio. N = 155 (top); N = 140 (bottom). Firefighters coded as 0, paramedics coded as 1. Males coded as 1, females coded as 2. The standardized results presented above the dividing line modeled support for SCS as a continuous variable; the standardized results presented below the dividing line modeled support for SCS as a dichotomous variable (support vs. oppose).

* *p* < .05 (two-tailed tests).

Table 2. Regression coefficients for mediation models.

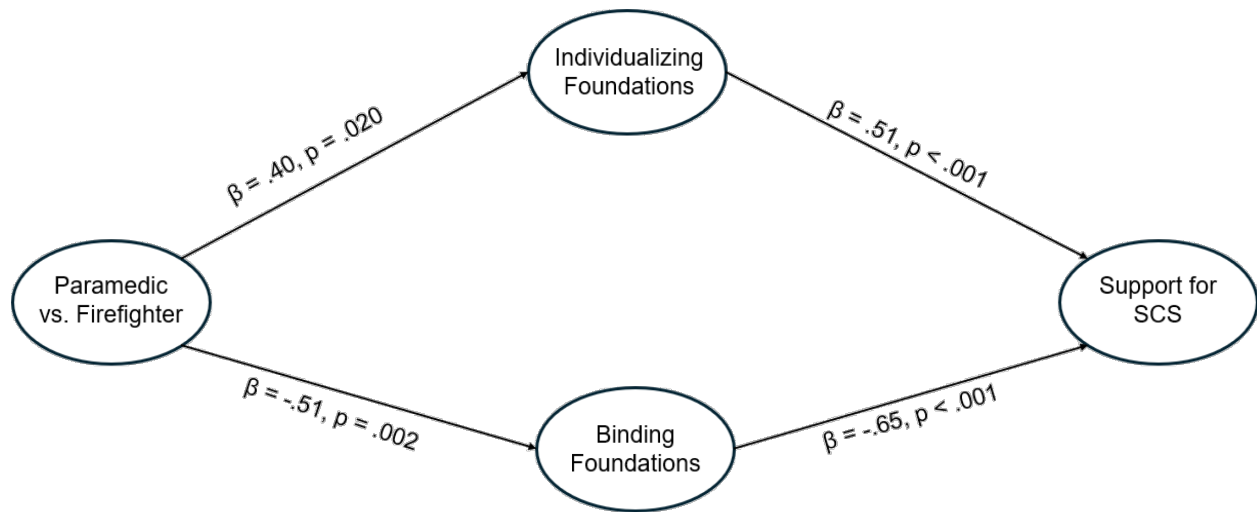


Figure 1. Relationships between professional designation, moral foundations, and attitudes towards SCS (continuous).

Note: Firefighters coded as 0, paramedics coded as 1. Estimates obtained from a regression-based parallel mediation model with 95% bootstrapped confidence intervals. Bootstrap N = 5,000. Figure 1 presents support for SCS as a continuous variable (N = 155). Gender, age, and education were included as covariates for all outcomes. The slopes showing relationships between professional designation and moral foundations are presented in a partially standardized metric demonstrating predicted differences in moral foundations for paramedics relative to firefighters. The slopes showing relationships between moral foundations and support for SCS are presented in a fully standardized metric.

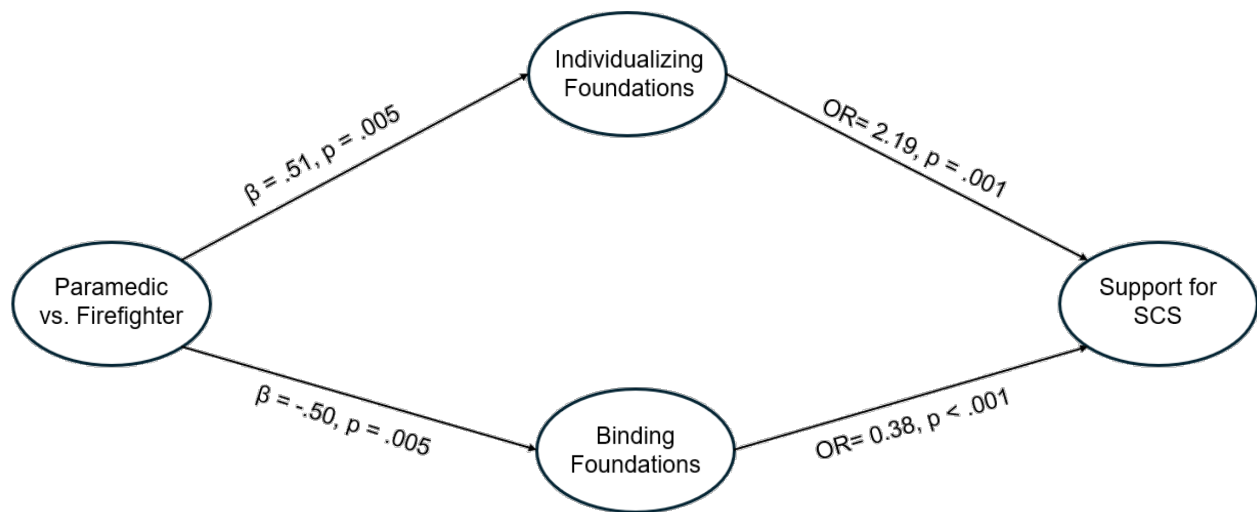


Figure 2. Relationships between professional designation, moral foundations, and attitudes towards SCS (dichotomous).

Note: OR = odds ratio; firefighters coded as 0, paramedics coded as 1. Estimates obtained from a regression-based parallel mediation model with 95% bootstrapped confidence intervals. Bootstrap N = 5,000. Figure 2 presents support for SCS as a dichotomous variable (N = 140). Gender, age, and education were included as covariates for all outcomes. The slopes showing relationships between professional designation and moral foundations are presented in a partially standardized metric demonstrating predicted differences in moral foundations for paramedics relative to firefighters. The slopes showing relationships between moral foundations and support for SCS are presented in a partially standardized odds ratio metric.

one standard deviation increase in individualizing moral foundations predicted a one-half standard deviation increase in support for SCS, while a one standard deviation increase in binding moral foundations predicted a reduction in support for SCS by nearly two-thirds of a standard deviation.

These effect sizes became more noteworthy when support for SCS was transformed into a dichotomous (support vs. oppose) variable. This mediation model showed that a one standard deviation increase in individualizing moral foundations predicted an increase of 119% in the odds of supporting SCS, while a one standardized unit increase in binding moral foundations predicted a decrease of 62% in the odds of supporting SCS. It is important to note that removing responses of 'neither oppose nor support' for the logistic regression model enhanced the strength of results by pushing responses toward their respective extremes. However, the results of both models are consistent in showing that there may be large and meaningful differences between firefighters and paramedics in terms of their moral foundations, which in turn are strong predictors of support for SCS.

Further, while those in the combined role of firefighter-paramedics resemble paramedics in terms of individualizing moral foundations, we found a large difference in binding moral foundations, indicating that moral foundations among firefighter-paramedics more closely resemble firefighters. The similarities between firefighters and firefighter-paramedics in their moral foundations align with the organizational and operational divisions within the workplace. However, this is a novel finding that future studies should investigate. This will help to determine if our findings represent firefighter-paramedics in general, or if they are an artifact of our relatively small and localized sample.

Among prior related research, a systematic review of stakeholder perceptions of SCS included representation from EMS and fire agencies (Lange & Bach-Mortensen, 2019). This review documented ambivalent attitudes towards SCS, describing perceptions of both benefit and harm. It also noted misconceptions about SCS that persisted within those groups, as well as the importance of language in how goals are communicated to stakeholders (Lange & Bach-Mortensen, 2019), confirming the importance not only of stakeholder opinion, but also underlying attitudes in shaping perceptions. Among research directly involving firefighters and paramedics, an earlier study by Pennington et al. (2021) surveyed firefighter-emergency medical responders on their perspectives on working near SCS facilities in Vancouver, British Columbia. Among four themes identified in the qualitative portion of the survey, a "sense of duty" appeared in over 35% of responses. A more recent study described the views of emergency service providers (68% of whom were firefighters or paramedics) towards SCS implementation (Perlmutter et al., 2023). This study identified three themes that express concerns over safety, perceptions of alternative strategies for managing substance use in the community, and the appropriate use of emergency services (Perlmutter et al., 2023). While neither of these studies is directly aligned with MFT, their findings can be seen to reflect the characteristics primarily of binding moral foundations as concerned with the safety, order, and health of the community and/or group.

A recent study by Pijl et al. (2025) helps to contextualize our findings regarding first responders' levels of moral foundations. The authors found that among the general population of the Canadian prairie provinces average levels of individualizing moral foun-

dations ($M = 41.5$) were comparable to both firefighters ($M = 37.7$) and paramedics ($M = 40.7$). However, like firefighters ($M = 48.5$), the general population's binding moral foundations ($M = 47.4$) were considerably higher than paramedics' ($M = 41.1$). This study provides additional evidence suggesting that paramedics may have lower average levels of binding moral foundations and higher average levels of support for SCS relative to other relevant populations. These differences may be due, in part, to factors such as workplace culture, training, leadership messaging, call types, or previous experience with SCS. In the context of existing research and ongoing policy debate that involves paramedics and firefighters as professional stakeholders, the findings of this study focus on underlying moral attitudes to offer a path to dialogue that addresses foundational beliefs.

LIMITATIONS AND FUTURE DIRECTIONS

This study used a cross-sectional design with no experimental manipulation. As such, it does not allow for causal inference regarding the relationships between first responders' moral foundations and their support for SCS. This notwithstanding, our correlational models are appropriate for examining the role of moral foundations as mediators. Theoretically, moral foundations develop early in life and are thus considered to have temporal precedence over most observed behaviors and attitudes (Graham et al., 2013). However, studies demonstrate that models examining moral foundations as mediators are valid for investigating different patterns of relationships, rather than establishing causal pathways (Baldner & Pierro, 2019; Giacomantonio et al., 2017; Lasaleta et al., 2024).

Additionally, although the survey included items designed to eliminate repeat survey risk, it is possible that one or more first responders may have taken the survey twice. However, this risk is minimal given the survey safeguards, and the length of the survey relative to the potential compensation. Another limitation pertains to how our convenience sample of one agency in one location may not accurately represent the characteristics of the whole population, including the wider population of first responders in Canada or North America. We also did not recruit any police officers for this study, who represent another critical component of the first responder population. First responder role was also not further characterized outside of paramedic, firefighter, and cross trained paramedic-firefighter.

Identifying the moral foundations of a subset of paramedics who work primarily in non-urgent roles focused on preventative medicine and follow-up (termed community paramedics) would provide a more comprehensive understanding of front-line attitudes towards SCS. Given community paramedicine's role in the overall EMS system and given the findings of the current study, the attitudes of community paramedics towards SCS would be expected to represent a strong advocacy point for SCS concept and operationalization. Further research with a large sample size comprising different types of first responders in assessing role-specific findings is warranted. It is also worth noting that, at the time of publication, there is not a currently operating SCS in the community where the study population works. Future research investigating how proximity to an existing SCS may impact the attitudes and beliefs about SCS among first responders and the public, would help to clarify the findings of the current study. For example, first responders' attitudes towards SCS may change depending on whether they are strictly conceptual, or if they are based upon their actual experience working in a community with an SCS.

CONCLUSION

Overdose deaths doubled between 2019 and 2020 in Manitoba and rates continue to rise further (Coubrough, 2021). Effective evidence-based strategies such as SCS are urgently needed to curb mortality and morbidity. Support for SCS from public sector professionals, such as firefighters and paramedics, is critical to effectively implementing these services.

By understanding the moral foundations that inform attitudes towards SCS, we can engage in more meaningful, authentic, and productive dialogue (Alderman et al., 2010). In a social context increasingly characterized by rising human needs and widening ideological polarization, novel interdisciplinary insights are needed to empower public discourse to explore the middle ground (Mills, 2023). Establishing new ways to explore differences of opinion regarding SCS is the first step towards fruitful discourse and enhanced service provision. For example, our findings suggest that addressing the morality-based concerns of those who oppose SCS may be a productive avenue for building cooperation and enacting policy. These concerns may include issues pertaining to security, cleanliness, proximity to schools and community centers, and the provision of addiction treatments, among others.

This study builds an understanding of the factors that predict attitudes and perceptions of SCS among first responders in terms of moral foundations. As few studies have addressed the interface of first responders and SCS in Canada (and none in Manitoba), the current findings contribute to the literature on SCS by deepening an understanding of the overlap between both kinds of services (first responders and SCS), and how the perspectives of first responders may affect the linkage between points of care. These findings can inform researchers, policymakers, and decision-makers in developing strategies to consider first responders as essential stakeholders in implementing and accepting SCS in Manitoba.

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