MEASURE OF INTENTION TO PROVIDE PATIENT-CENTERED CARE

TO PEOPLE EXPERIENCING OPIOID ADDICTION AND OVERDOSE

AMONG EMS PROVIDERS IN THE STATE OF MAINE

by

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ABSTRACT

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The current opioid epidemic is devastating our communities. The American

Medical Association's Task Force on opioid addiction has identified stigma as a primary

target of intervention for mitigating this epidemic. Stigma is a mark of disgrace or being

objectionable. Experiences of stigma and resulting shame serve only to fuel health

inequities experienced by people with opioid addiction. Emergency Medical Services

(EMS) have an important role to play in mitigating this epidemic as entry-level providers

in the healthcare system. The quality of that patient-provider encounter had the potential

to shift intrinsic motivation to seek and maintain addiction treatment. Patient-centered

care is identified as supporting therapeutic communication and is well-suited for rural

EMS operations in Maine. The purpose of this research was to examine predictors of intention to provide patient-centered care to people experiencing opioid addiction and overdose (OAO) among EMS providers in the state of Maine.

A cross-sectional online survey of currently licensed EMS providers offered a direct measure of intention to give patient-centered care to people experiencing OAO. Multiple regression analysis identified four predictor variables for intention: job satisfaction, exploring patient perspective, sharing information and power, and dealing with communicative challenges. The fitted model resulted in a significant $R^2 = .529$, (F (4, 734) $= 226.381$, $p < .001$) exceeding the critical F statistic (F (4,739) $= 2.384$, $p = .05$), thus confirming the predictive value of the coefficients. Results suggested that EMS providers at all license levels will benefit from interventions that expand their knowledge of the medical definition of addiction and patient-centered care. EMS providers will also benefit from adopting approaches that support exploring the patient perspective and sharing information and power such as Motivational Interviewing and human performance strategies to develop awareness of socially conditioned biases that moderate provider attitudes. These evidence-based interventions could elevate the standard of care provided by EMS and reduce experiences of stigma in the patient-provider encounter. Reductions in stigma increase self-worth and prime motivation to seek and maintain treatment, thereby closing the treatment gap that exists for those experiencing opioid addiction in the state of Maine.

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INTRODUCTION

Background

Drug overdose deaths are the leading cause of preventable death in the United

States (Centers for Disease Control and Prevention [CDC], 2016). The rate of drug

overdose deaths has increased 137% since 2000 (Rudd, Aleshire, Zibbell, & Gladden,

2016). This includes a 200% increase in heroin-induced deaths. The State of Maine is one

of 13 "sentinel community sites" identified by the CDC as having experienced a

statistically significant increase (26.2%) in drug overdose death rates between 2014-2015

(Sorg, Greenwald, & Wren, 2016). In 2016, 378 Maine (population 1,329,328; 20.9 crude

rate per 100,000) people died as a result of drug overdose, representing a 50% increase

over the previous year (Mills, 2017a, 2017b). Drug overdose deaths have kept a "steady

pace through first six months of 2017 with 185 deaths recorded through the end of June"

(Mills, 2017b, p. n.p.). Opioids were responsible for 84% of the drug-related deaths.

Fentanyl and fentanyl analog use, specifically, were responsible for 61% of the deaths

between January and June 2017 (Mills, 2017b). "Fentanyl is often mixed with heroin and

presented to the [drug] user as heroin" (p. n.p.) and "Pharmaceutical opioids caused 30%

of the deaths thus far in 2017" (p. n.p.).

Despite the epidemic rates of opioid overdose deaths over the past decade, the percentage of people accessing treatment for their opioid and synthetic opioid addiction has remained relatively unchanged (National Institute on Drug Abuse [NIDA], 2016). "The proportion of primary admissions related to heroin increased by 17 percentage points from 2012 (11%) to 2016 (28%)" (State Epidemiological Outcomes Workgroup [SEOW], 2017, p. 107). Moreover, "admissions related to synthetic opiates decreased by 14 percentage points, from 32 percent to 23 percent in this same time frame" (p. 107). Over half (58%) of the primary admissions in 2016 were related to opioids (p. 107). While admission rates are an important "indicator of service usage and the impact of substance use on the behavioral healthcare system" (p. 107), it is not a good indication of opioid use, abuse, or dependence. Pharmaceutical and illicit opioids continue to be a serious public health crisis for Maine as the number of opioid-related deaths continues to rise. Opioid use, abuse, and dependence are "the greatest challenge of our time" (Mills, 2017b, p. 1), requiring a collaborative approach to increase the availability and access of treatment, implement prevention, and education interventions as well as to save lives (Saloner & Karthikeyan, 2015). This challenge begins with changing the conversation about addiction.

Addiction is a chronic brain disease (American Society of Addiction Medicine [ASAM], 2017). It is a dysfunction of the brain's reward and motivation circuitry. Drug addiction manifests as the pursuit of drugs and an inability to abstain from that drug (ASAM, 2017). Addiction is not a social, moral, or criminal problem (ASAM, 2017). It is "a chronic disease, similar to cardiovascular disease or diabetes" that "must be treated, managed and monitored over a life-time" (p. n.p.). It is a medical condition, not a choice.

Yet many in our society believe that addiction is a choice, and that people who experience drug addiction and overdose are somehow less worthy than other human beings. The enacted stigma born out of this belief serves only to intensify shame and activate defensive action patterns to maintain safety (Van Der Kolk, 2014). In turn, shame serves on to deactivate social engagement and requisite neurochemistry to seek and maintain treatment for drug addiction (Saloner & Karthikeyan, 2015; Stull, McGrew, Salyers, & Ashburn-Nardo, 2013; Van Der Kolk, 2014). Yet, like other chronic diseases, without treatment, addiction is progressive and can result in death (ASAM, 2017).

Reducing the stigma of opioid addiction and enhancing access to treatment is one of five intervention goals identified by the American Medical Association's (AMA, 2015) Task Force on Opioid Abuse. Stigma is a mark of disgrace or being somehow objectionable based upon a socially conditioned norm. Enacted stigma refers to acts of unfair treatment, discrimination, and social isolation that originate from this norm bias and identifies a person or persons as deviant or bad. The stigmatized person may try to hide their addiction in an attempt to avoid the threat of enacted stigma (Ross, 2014, p. 54). Exposure to enacted stigma is a threat to personal safety triggering autonomic action patterns, such as seeking drugs, to regulate feelings of intolerable shame (Van Der Kolk, 2014). Experiences of enacted stigma have enduring negative effects on physical, social, emotional and spiritual health (Saloner & Karthikeyan, 2015; Stull et al., 2013, Van Der Kolk, 2014).

The AMA Task Force recommends state-based initiatives and legislation for prevention outreach and education intervention in multiple settings. Emergency settings include both hospital and prehospital environments (AMA, 2015). A primary focus of

this outreach and intervention is the reduction of stigma in the patient-provider encounter. This is facilitated by educating healthcare providers, patients, and the public about the role that stigma plays in patient care and access to treatment. It also includes defining opioid addiction as a medical condition that can be treated and managed, rather than a moral, social, or criminal issue (AMA, 2015). Educating healthcare providers is essential because their attitudes toward opioids and people with drug addiction act as an anchoring bias priming decision making and behavior (AMA, 2015; Watson, Macleren, & Kerr, 2006, p. 214; Ross, 2014). The American Medical Association (2016) endorses education intervention efforts that facilitate therapeutic communication between patient and provider, in an effort to eliminate stigma, discrimination and health inequity experienced by patients with drug addiction. Educating and enhancing skills for therapeutic communication is a core competency of the patient-centered care of people experiencing opioid addiction and overdose (OAO). This includes addressing providers' negative attitudes toward providing care to patients with opioid addiction and those receiving medication-assisted treatment (MAT) (AMA, 2016). These negative attitudes directly influence healthcare providers' patient-centeredness with patients (AMA, 2016; Zachariae et al., 2015, p. 2).

The AMA recommends a patient-centered care as a means of reducing the harm that enacted stigma has on the psychological health of those experiencing opioid addiction (Harris, 2015, p. 5). Patient-centered care is an ethical approach emphasizing patient autonomy, shared decision making, collaboration, attention to psychosocial factors, and quality of life (Cohen & Jangro, 2015). Patient-centeredness, the disposition of patient-centered care. It reflects a provider's core values of equity, and directly

influences patient outcomes (Zachariae et al., 2015, p. 1). Equity is requisite for people to experience feelings of social inclusion and worthiness (Harris, Eyles, Penn-Kekana, Thomas, & Goudge, 2014). Health equity is an overarching goal of our nation's health policy, *Healthy People 2020* (HealthyPeople.gov, 2015). Developed by the U.S. Department of Health and Human Services, *HP 2020* commits to eliminating the "range of personal, socio-economic, and environmental factors" that prohibit one from attaining health, and implementing policies that "achieve health equity" for all Americans. Pursuing health equity also means "striving for the highest possible standard of health for all people" and "giving special attention to the needs of those at greatest risk of poor health," such as people with opioid addiction (Braverman, 2014, p. 6).

Social determinants of health are "responsible for the unequal and avoidable differences in health status within and between communities" (HealthyPeople.gov, 2015, n.p.). These differences in health status result from people's "relative position in a social pecking order" within a group or community (Braverman, 2014, p. 6). This social stratification influences "how people are treated in a society", and affects every aspect of patient care (Braverman, 2014, p. 6; Chapman, Kaatz, & Carnes, 2013; Villa, 2016). Stigma, for example, is a social determinant that has a negative impact on health. Stigma attached to substance abuse hinders early diagnosis and treatment; and contributes to poor treatment outcomes (HealthyPeople.gov, 2015; National Institute of Health [NIH], 2007). Stigma is a central driver of morbidity and mortality among people with substance use disorders (Hatzenbuehler, Phelan, & Link, 2013, p. 813; Juman, 2012; Kreek, 2011). Experiences of stigma keep people from seeking and maintaining treatment. While the healthcare profession promotes equal treatment of patients, disparities in patient care

remain prevalent because of enacted, societal stigma (Chapman et al., 2013). Emergency medical service providers and other public safety providers are not exempt from this phenomenon.

Emergency Medical Services (EMS) are the frontline treatment providers for people experiencing OAO in the prehospital setting. As the opioid epidemic continues to claim lives, EMS providers find themselves in the position of having to respond to multiple calls for overdose within a single shift. With cardiopulmonary resuscitation and Narcan (a medication used to block the effects of opioids) they save the lives of those near death from opioid overdose. In the State of Maine, the number of patients receiving Narcan administration increased from 508 in 2012 to 1,133 in 2015 (Ambulance Run Data Report, 2016). Males of all ages, "received the highest percentage of [Narcan] administrations," and experienced the highest number of drug overdose deaths (SEOW, 2015, slide 21). Males and females "aged 26 to 35 had the highest rate" of drug overdose deaths during 2016, "followed closely by those aged 36 to 49" (SEOW, 2017, p. 29).

This significant increase in opioid overdoses and the complexity of navigating the interpersonal dimension of these patient encounters challenges even the most veteran of EMS providers. Narcan was administered to more than a third of overdose victims who died in the first six months of 2017 (Mills, 2017b); Leaving many to feel that they are not helping to solve the problem and struggle with a sense of frustration that more needs to be done to mitigate this epidemic. Current treatment protocols focus only on the medical management and many providers are unaware of the benefit of a therapeutic communication. While current National Emergency Medical Services Education Standards include "therapeutic communication" as a terminal objective for entry level

providers, it is not taught nor required practice in the field. Additionally, no evidence-based curricula have been adopted as a means for EMS providers in the state of Maine to obtain this competency (Shaun St. Germaine, personal communication, 2016). Current quality assurance measures in Maine EMS are focused on the adherence to the state of Maine EMS Prehospital Treatment Protocols for patient care and no guidelines or expectations are set for therapeutic communication. And yet, EMS providers are often the first person that a patient experiencing an overdose will encounter. The EMS providers' attitudinal disposition will shape the quality of the patient experience. The quality of this experience will influence the patient's intrinsic motivation to seek addiction treatment. Providers strongly held, negative attitude toward opioids and opioid addiction primes a patient-provider encounter for enacted stigma. While strongly held positive attitudes toward opioids and opioid addiction prime a more collaborative, compassionate, patient-provider encounter. Specific therapeutic communication styles, such as motivational interviewing, that facilitate shared decision-making, and seeking understanding enhance the quality of the patient experience (Miller, Rollnick, & Butler, 2008). This type of encounter has the potential to fuel feelings of worthiness, hope, and confidence that contribute to a patient's desire to change and seek addiction treatment (Miller et al., 2008). Among opioid abusers specifically, the lack of social support and experiences of enacted stigma increase the probability of relapse among those previously abstaining opioid addicts (Marlatt & Donovan, 2005). Relapse is the "use of a substance such as heroin following a week or more of abstinence" (Marlatt & Donovan, 2005, p. 156). The social context of the patient-provider encounter is a rich opportunity to increase intrinsic motivation to seek treatment and prevent relapse. The provider's approach to patient

care, particularly the interpersonal dimension, with therapeutic communication may prime a patient's own motivation for change (Miller et al., 2008). The sharing of power, enhancing relationship, and seeking understanding of patient's worldview increase the likelihood that patients will begin to consider what treatment might look like for them (Fredrickson, 2001; Zachariae et al., 2015, p. 1).

Research suggests that the relationship between the patient and provider is the workspace for interrupting enacted stigma. The interpersonal relationship is profoundly influenced by provider attitudes toward the patient and their situation (Miller et al., 2008; Miller & Rollnick, 2013). A disposition of patient-centeredness reflects an attitude of compassion, acceptance, respect, and equality (CARE). Patient-centered care is an approach to patient care that enhances EMS providers ability to make decisions, choreograph scenes and treat people well. Patient-centered care incorporates motivational interviewing skills for enhanced therapeutic communication. It is promoted as an approach to rapport building, supporting patient autonomy, and strengthening intrinsic motivation and commitment to change (Miller et al., 2008; Miller & Rollnick, 2013). This practice approach helps to resolve ambivalence about accessing treatment, so patients can begin to explore treatment options. This research provides the necessary evidence to recommend a research study of EMS providers' attitudes toward opioids and opioid addiction, self-efficacy toward providing patient-centered care, and intention to provide patient-centered care to people experiencing OAO.

Current research suggests that professional development encompasses not only medical treatment and stabilization of the overdose patient with Cardiopulmonary Resuscitation (CPR) and Narcan, but must also include education regarding the medical

definition of addiction and the development of core competencies in patient-centered care (Livingston, Milne, Fang, & Amari, 2011, p. 39; Zachariae et al., 2015, p. 1). In this research, patient-centered care is operationally defined as the disposition and skills exhibited by EMS providers that "promote core values" of: (a) considering patients' needs, perspectives, and experience; (b) providing opportunity for patients to participate in their care; and (3) enhancing relationship between patient and provider. Zachariae et al. (2015) identified patient centered-care as "a core competency in modern healthcare" (p. 2). A growing body of research associates patient-centered care with greater patient satisfaction and health outcomes via enhanced communicative skills and patient-provider relationship (p. 2). This patient-centered focus on communication and relationship are critical ingredients for priming intrinsic motivation to seek treatment, and thus may also be positively associated with improved health outcomes for patients with opioid addiction (King & Hoppe, 2013).

Patient-centered provider behaviors have bi-directional benefit in that they also promote provider well-being (Zachariae et al., 2015). Patient-centered behaviors expand the repertoire of tools providing more resources to help patients. More resources will help to reduce the stress and burnout often associated with responding to repeated and potentially violent calls for opioid overdose. Enhancing and expanding the skills that providers have at their disposal while providing care to people with OAO is critical. Empowering and engaging EMS providers as agents of positive change within the communities is one part of a multifaceted effort to solve our nation's opioid overdose death epidemic.

This measure of EMS providers' attitudes toward opioids and opioid addiction provide insight into underlying predictors of intention to provide patient-centered care to people experiencing OAO. Strongly held attitudes are better predictors of behavior than weak attitudes (Krosnick & Abelson, 1992). "Attitudes also impact the extent to which knowledge is accepted and used in practice" (Watson, Maclaren, Shaw, & Nolan, 2003, p. 4). The assessment of the magnitude of that attitude enables policymakers to infer that an individual may be more or less receptive to the professional development training, and more or less likely to be supportive of and compliant with various standards of practices.

EMS providers' self-efficacy in providing patient care illuminates underlying predictors of intention to provide patient-centered care to people experiencing OAO. Self-efficacy is one's belief in the "ability to implement the behaviors needed to produce the desired effect" (Kadden & Litt, 2011, p. 1120). In the context of this study, the behavior is patient-centered care and the desired effect is reduced stigma in the patient care experience and a patient's increased motivation to seek addiction treatment. A measure of EMS providers' self-efficacy in providing patient-centered care was necessary to illuminate potentially valuable relationships among variables that will inform the development of future intervention strategies for enhancing patient care.

A review of the literature identified the two validated questionnaires that were used in this cross-sectional survey study of EMS providers in the state of Maine: (a) Drug and Drug Problems Perception Questionnaire (DDPPQ), and (b) Self-Efficacy in Patient-Centered Communication Questionnaire (SEPCQ-27). The Drug and Drug Problems Perception Questionnaire (DDPPQ) measures healthcare professionals' attitudes towards working with people with opioid addiction. Attitude is multifaceted and shaped by many

internal variables, including demographic influences (e.g., age, gender, ethnicity, education level); commitment to the role (motivation, professional self-efficacy); and sense of fulfilment in their role (role adequacy and legitimacy), as well as external variables such as role support (Cartwright & Gorman, 1993). An examination of provider attitudes enabled the researcher to identify areas in need of intervention. The SEPCQ measured providers perceived self-efficacy in exhibiting core patient-centered behaviors (Zachariae et al., 2105). Self-efficacy is multifaceted and also shaped by many internal variables, including demographic influences (e.g., age, gender, ethnicity, license level, education level) and belief in one's own capability to engage in: (a) exploring patient perspective, (b) sharing information, and (c) dealing with communicative challenges.

This study is based on the premise that specific antecedents (attitude, norms, and perceived behavioral control) for a specific behavior (providing patient-centered care to people with opioid addiction) within a specific context (prehospital) "predict behavioral intention with a high validity and degree of accuracy" (Ajzen, 1991, p. 185). Any one of these antecedents influences the "emotional atmosphere" of the patient-provider encounter which, if positive, is a catalyst for the patient's sense of safety and "positive emotional experience" (Orange, 1995, p. 129). The "positive emotional experience" (feelings of worth, subjective power and equality) of patients is requisite for approaching behavior associated with seeking addiction treatment services (Flora & Stalikas, 2015; Fredrickson, 2001; Howard & Chung, 2000; Orange, 1995, p. 129). "Negative emotions, such as guilt and fear" inhibit taking steps (change readiness) to enter addiction treatment (Flora & Stalikas, 2015, pp. 56, 85). Thus, this research examined antecedents or predictors of EMS providers' behavioral intention to provide patient-centered care to

people experiencing OAO. This research illuminated key variables that act as targets for future intervention(s) designed to eliminate stigma in the patient care experience.

This study contributed to the body of literature examining predictors of the behavioral intention to provide patient-centered care people with opioid addiction. It is also the first statewide cross-sectional survey study of Emergency Medical Service providers examining attitudes toward opioid use and addiction and self-efficacy in providing patient-centered care to patients within this demographic. This study is important because it identified background factors (e.g., age, gender, education, experience) influencing attitudes and illuminated predictors of negative attitudes and measure attitudes and self-efficacy. Many EMS providers work closely with and are employed in other public safety occupations such as law enforcement and corrections. Thus, the research results may have broader application to the wide range of public safety contexts and jurisdiction. They will also inform education intervention methodologies and intervention characteristics for the specific context (prehospital patient care of people with opioid addiction) and behavior (patient-centered care of people with opioid addiction) measured in this study (Ajzen, 1991). Finally, the results of this study provide valuable insight into antecedents of behavior while providing care to people with opioid addiction among EMS providers in the state of Maine. For the purposes of this research, opioid is defined as both prescription opioids and illicit opioids such as heroin.

Problem Statement

Given the current opioid epidemic in the state of Maine, the high prevalence of opioid addiction, a growing number of overdose deaths, and stagnant access to treatment

(Sorg et al., 2016, p. 34), it is critical to explore the forces and factors that influence the quality of care provided to people experiencing opioid addiction. EMS is the point of entry to the healthcare system. As such, EMS providers are in a unique position to effect positive change in the lives of those in the grips of addiction. The purpose of this research was to explore relationships among antecedents of the intention to provide patient-centered care as a standard of quality prehospital care. EMS providers have an important role to play in mitigating this epidemic that extends beyond CPR and the administration of Narcan. That role includes patient-centered care as a means of moderating health inequities experienced by people struggling with opioid addiction.

Purpose of the Study

This non-experimental, quantitative, cross-sectional, correlational survey study explored differences in attitudes and self-efficacy across levels of demographic variables (gender, age, ethnicity, educational attainment, license level, service region, service role, and years of experience). This research analyzed relationships among attitude (DDPPQ), Self-efficacy (SEPC-27), and Intention variables. This study also sought to explore the relative strength and contribution of these variables. To achieve the aims and objectives of this research, two psychometrically validated questionnaires were adopted: Drug and Drug Problem Perception Questionnaire (DDPPQ), and Self-Efficacy in Patient-Centeredness Questionnaire (SEPCQ-27). Attitudes toward providing care to people with opioid addiction were measured using the DDPPQ five subscales of "role adequacy," "role support," "job satisfaction," "self-esteem," and "role legitimacy" (Watson et al., 2006, p. 211). Self-efficacy in patient-centeredness were measured using the three

SEPCQ-27 subscales of "exploring patient perspectives," "sharing information and power," and "dealing with communicative challenges" (Zachariae et al., 2105).

Research Questions

The researcher explored the following research questions and hypotheses:

1. What are the demographic characteristics of the sample population and is it representative of the population of EMS providers in the state of Maine?

2. What types of attitudes do Emergency Medical Service (EMS) providers in the sample hold regarding OAO?

3. What levels of self-efficacy in patient-centered care do EMS providers in the sample self-report?

4. What is the intention of EMS providers in the sample to provide patient-centered care to people experiencing OAO?

5. Can demographic factors predict EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care?

   $H_0 5$: Demographic factors cannot be used to predict EMS providers' attitudes opioids and opioid addiction, and self-efficacy in providing patient-centered care.

   $H_A 5$: Demographic factors can be used to predict EMS providers' attitudes opioid and opioid addiction, and self-efficacy in providing patient-centered care.

6. Are EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care are related to intention to provide patient-centered care to people experiencing OAO?

$H_0 6$: EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care are not related to intention to provide patient-centered care to people experiencing opioid addiction/overdose.

$H_A 6$: EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care are related to intention to provide patient-centered care to people experiencing OAO.

Theoretical Framework

The Theory of Planned Behavior (TPB) provides the theoretical framework for this research. As previously explained, specific antecedents (attitude, norms, and perceived behavioral control) for a specific behavior (providing patient-centered care to people with opioid addiction) within a specific context (prehospital patient care) predict behavior with a high predictive validity and degree of accuracy (Ajzen, 1991, p. 185). Figure 1 depicts the dynamic interplay among each of these antecedents in priming intention and predicting behavior. According to the TPB, "action is preceded by intention" (p. 181). The stronger the intention, the more likely a behavior will be performed. Intention is made up of attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). Ajzen posited that the more favorable an attitude and a subjective

norm, and the greater the perceived control, the stronger the intention to perform a

specific behavior (pp. 188-189).
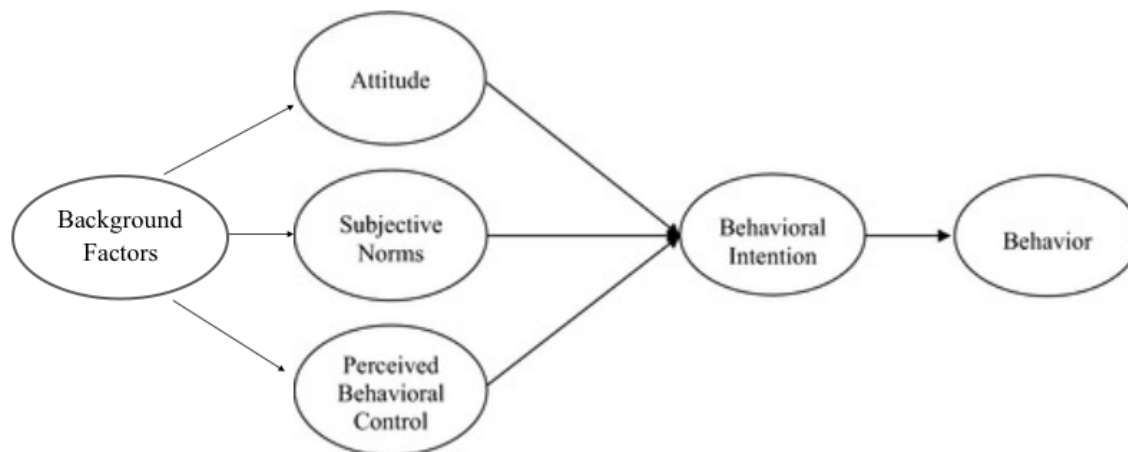
Figure 1. Theory of Planned Behavior (Ajzen, 1991)

Attitude is reflected in a person's perspective of an intended outcome of a specific

behavior (Ajzen, 1991). Attitudes represent a positive or negative evaluation of

performing a behavior, such as providing patient-centered care to people with opioid

addiction (Ajzen, 1991). Subjective norms represent perceptions of the social pressure

and motivation to perform a behavior (Ajzen, 1985, 1991). This social factor refers to

perceived social pressure to perform or not perform a behavior (Ajzen, 1991). Perceived

behavioral control (PBC) refers to the perceived ease or difficulty of performing a

behavior (Ajzen, 1991). PBC is a belief in one's ability to perform a behavior, also

known as self-efficacy (Ajzen, 1985, 1991; Bandura, 2006, p. 310). Self-efficacy belief

or PBC reflects a person's "judgement of how well they can execute" a specific behavior

(Ajzen, 1997, p. 184). Self-efficacy beliefs influence people's choice of activities,

preparation, approach to, and effort extended during its performance (Ajzen, 1991,

p. 184; Zachariae et al., 2015, p. 2). Collectively, each of these three antecedents of behavior predict and explain people's intention to engage in a specific behavior (Ajzen, 1991, p. 189). However, "the relative importance" of each antecedent "in the prediction of intention is expected to vary across behaviors and situation" (p. 188). This study aimed to examine the relative importance of these factors as related to EMS providers' intention to provide person-centered care to people with opioid addiction/overdose in the prehospital setting.

Demographic variables are considered "background factors" in the TPB. They are assumed to mediate the effects of the attitude and self-efficacy, thereby indirectly influencing intention and behavior (Ajzen, 1991). Background factors may provide valuable information about antecedents of intention, but they are not predictors of intention (Ajzen, 1991). The theory recognizes that in the context of designing interventions, demographic variables such as gender are considered constants that provide a valuable context for and insight into the design of intervention; they are not targets of intervention like attitudes, social norms, and self-efficacy (Ajzen, 1991). Thus, this research study sequentially examined the relationships between demographic variables and attitudes, and then demographic variables and self-efficacy prior to running a regression analysis of the relationships among attitude, self-efficacy, and intention.

This research measured attitude toward opioids and opioid addiction. This is a deliberate shift from the theoretical framework prescribing a direct measure of attitude toward patient-centered care of people experiencing OAO. The rationale for this change is the direct influence that attitudes toward opioids and opioid addiction have on the behavioral disposition or willingness to interact with patients experiencing opioid

addiction, and thus is deemed an important predictor of intention (Watson et al., 2006). Attitudes that point to a willingness to suspend judgment and an openness to these patients, for example, are good indicators of how providers intend to interact with patients (Miller & Moyers, 2006). Thus, general attitude measures will also predict a willingness to engage in a patient-centered approach with patients abusing opioids. The DDPPQ was used to measure EMS providers' attitudes toward opioids and opioid addiction.

A patient-centered approach is prescriptive for helping to support patients' autonomous (internalized) motivation to seek treatment (Miller, 2017, personal communication; Miller & Rollnick, 2013, p. 6). A patient-centered approach enhances the skill set of EMS providers, enabling them to better facilitate the exploration of patient perspectives, develop partnerships, and enhance interpersonal communication. Proficiency of these skills is not a one-time event; rather, it requires iterative feedback and practice over time and across a variety of calls for service. Additionally, a provider's attitude toward opioids and opioid addiction will inevitably have a significant impact on his or her intention to use patient-centered care with people experiencing OAO. A provider may report a high level of self-efficacy in patient-centered care, but if the provider also reports a strongly held, negative attitude toward opioid and opioid addiction, then it is unlikely that a patient-centered-care approach will be utilized with a patient experiencing opioid addiction. This, then, was the rationale for using an instrument to measure providers' self-efficacy in patient-centered care as separate and distinct from a measure of provider attitude toward opioids and opioid addiction.

The researcher conducted a preliminary study to facilitate instrument design. This preliminary study indicated that EMS providers in the state of Maine believed they had adequate knowledge, resources, and self-efficacy to administer life-saving Narcan to people who have overdosed on opioids (see Appendix G for a summary of the preliminary study). However, the preliminary study also indicated that EMS providers felt they had little knowledge and understanding of the utility of providing patient-centered care to people with OAO. Providers reported a lack of training and standardized protocol for its use as a primary gap in extrinsic motivation in current practice. Additionally, providers reported inconsistent autonomous motivation for wanting to learn a patient-centered care approach to improve their practice and potentially save lives of people experiencing OAO. These inconsistencies may be a direct result of a provider's strongly held attitudes (positive or negative) toward opioids and opioid addiction, subjective norms of the EMS subculture, and self-efficacy in patient-centered care. Thus, this research measured EMS self-efficacy in providing patient-centered care without the distinction of providing said care to people with OAO.

Conceptually, perceived behavioral control (PBC) and self-efficacy refer to one's belief that they are capable of performing patient-centered care (Ajzen, 2006b). Operationally, PBC is comprised of self-efficacy (ease or difficulty of performing a behavior) and controllability (the extent to which performance of behavior is up to the individual) (Ajzen, 2006b). Controllability is influenced by external factors such as availability of resources and training, and in the context of this population, protocol for patient care. Since the preliminary study illuminated these external factors as areas of need, self-efficacy was isolated as the measure of PBC.

Per Ajzen (2006b), "there is nothing in the *theory of planned behavior* to suggest that attitude, subjective norm, and perceived behavioral control will each make a significant contribution to the prediction of intention" (p. n.p.). Rather, "the relative importance of these three factors is likely to vary from one behavior to another and from one population to another" (p. n.p.). In some cases, one or more factors "may be found to have no significant effect on intention" (p. n.p.). This merely indicates that, for a particular behavior and population, the factor is not an important consideration in the formation of behavioral intention (Ajzen, 2006b). In a meta-analytic review of the *Theory of Planned Behavior*, Armitage and Conner (2001), found that the subjective norm construct was a weak predictor of intention when behavior measures were self-reported (p. 471). Armitage and Conner noted that the average component relationship between attitudes and intentions was twice as large as that between subjective norms and intentions (p. 497). In this same review, the self-efficacy construct alone accounted for significant amounts of variance in intention and behavior, independent of attitudes and subjective norms (p. 497).

Subjective norms are defined by the "normative beliefs" of a group and an individual's "motivation to comply" with the social climate surrounding a particular behavior (Ajzen, 1991, p. 195). They help to describe what should happen in a particular situation, such as patient-centered care. Normative beliefs are dependent on the population, behavior, and context, and reflect the group's approval or disapproval of performing that behavior in that context (p. 195). An individual's motivation to comply is dependent on background factors and an appraisal of the response of referent individuals within the group (Ajzen, 1991; Asch, 1951).

Subjective norms in the EMS provider population are highly influenced by background factors. Background factors include socio-demographic variables such as one's position as a public servant (EMS provider) and objective norms of the Maine EMS organization. Objective norms are a function of an EMS agency's standard operating guidelines, protocols, policies, and state and federal law. They command certain behaviors and forbid their omission. Conformity and compliance (obedience) are derived from each provider's relative position with the hierarchy of the organization (Asch, 1951; Cialdini & Goldstein, 2004, p. 595; National Research Council [NRC], 2014). Authority and power within this organizational structure predict the behavior of its subordinates (Cialdini & Goldstein, 2004, p. 595; NRC, 2014). In the Maine EMS population, compliance with objective norms shapes social norms because compliance is perceived to be both "expected" and "reinforced" by both the leadership and co-workers (Asch, 1951; Cialdini & Goldstein, 2004; Cialdini & Trost, 1998; NRC, 2014). In the context of para-military social structures such as EMS, these objective norms are a stronger predictor of intention and behavior than subjective norms because compliance promotes social cohesion (Asch, 1951; Cialdini & Goldstein, 2004; Cialdini & Trost, 1998; NRC, 2014). This phenomenon of compliance with the organizational norms decreasing the influence of individual and social norms is supported by the coded results of the focus group belief survey (Asch, 1951) (see Appendix G for a review of the findings from the focus group beliefs survey). The "motivation to comply" with the objective norms of state law, policies, and protocols is the perceived operating social climate among EMS providers in the state of Maine.

Social desirability report bias is a concern when assessing societal norms via self-reporting measures. Self-report bias is a tendency to answer questions in a way that will be viewed favorably by others (Donaldson & Grant-Vallone, 2002, p. 247). It results in over-reporting "good behavior" or under-reporting "undesirable" behavior (p. 247). Self-report bias is likely in organizational behavioral intention research because employees often believe there may be a remote possibility that the employer could gain access to responses (p. 247). Social desirability report bias is also common when the constructs of research include measures of job satisfaction, role conflict, role ambiguity, and organizational commitment (p. 247). Since this study sought to measure these types of constructs using self-report measures, social desirability report bias is a considerable threat to the validity in this study (Donaldson & Grant-Vallone, 2002). This phenomenon was reflected by the "I'd rather not answer" response to the focus group belief survey question on social climate for not providing patient-centered care to people with OAO. This type of response may be interpreted as an individual having a personal belief that may be socially unfavorable and not consistent with the objective norms of the group. This type of dissonance is likely to lead to report bias.

For this population of EMS providers in the state of Maine, the deliberate removal of subjective norms as a predictor of intention is prompted by: (a) concern regarding social desirability report bias, (b) weakness of the norm-intention link, and (c) the primacy that background factors, also known as object norms such as standard operating guidelines and protocols, play over subjective norms in this population. Two separate psychometrically validated survey questionnaires were used to evaluate providers' attitudes toward opioid and opioid addiction and self-efficacy in providing patient-

centered care in the prehospital setting. The Drug and Drug Problems Perceptions Questionnaire (DDPPQ) measured attitudes toward opioids and opioid addiction (Watson et al., 2006). The Self-Efficacy in Patient-Centeredness Questionnaire (SEPCQ-27) measured self-efficacy in exhibiting patient-centered care (Zachariae et al., 2015). While this study did not directly measure the "subjective norm" antecedent of behavioral intention, it should be noted that the preliminary study and the direct measures of providers' attitudes toward opioids and opioid addiction illuminated the subjective norms (socially conditioned beliefs and perceived social pressure) among EMS providers in Maine.

This research measured providers' behavioral intention to provide patient-centered care to people experiencing OAO. This was accomplished by the development and validation of a behavioral intention instrument that used the SEPCQ-27 subscales. Intention to perform behaviors represented in the subscale items was measured by asking participants to "rate the degree to which you are likely to perform the following skills with patients experiencing opioid addiction/overdose." Note in this intention scale that participants were asked to rate the likelihood of performing the target behavior of patient-centered care with patients experiencing OAO. This intention scale is consistent with Ajzen's (2006) recommendations for preparing a standard TPB questionnaire (p. 3). The scale includes the elements of a target behavior (patient-centered care) in a specific context (patients experiencing OAO) and time (prehospital setting). Using the existing SEPCQ-27 subscales and items establishes content validity of the intention metric. According to the TPB, significant variances in intention among the subscales will have

the greatest "room for change" and thus identify targets of future education interventions (Ajzen, 2006a, p. 4).

Implications

This study obtained a measure of intention to provide patient-centered care to people experiencing OAO in the prehospital environment. It also obtained a measure of EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in patient-centered care. Results provided a robust examination of the relationship between providers' demographic variables and independent variables: attitudes and self-efficacy. It also examined the relationship of these attitudes and level of self-efficacy to intention to provide patient-centered care to people experiencing OAO. The results also provided a description of the representative sample of EMS providers in the state of Maine.

An analysis of the internal and external influences of behavioral intention provided critical information to inform the creation of a tailored, evidence-based, education intervention to ensure that EMS providers have the knowledge, skills, and disposition to provide patient-centered care to people experiencing OAO. This research study provides a framework for which patient-centered care becomes a required proficiency indicator for the National Emergency Medical Services Education Standards (NEMSES) of therapeutic communication. As previously stated, there is no current standardized curriculum for these education standards. The newly released 2017 National Registry Certification Exam 3.0 includes "interpersonal relations," defined as "effectively communicate, and maintain professionalism throughout the simulated patient encounter," as critical grading criteria in the psychomotor exam (National Registry of Emergency

Medical Technicians [NREMT], 2016b). However, no single evidence-based curriculum has been identified to support these changes in testing. This gap highlights a future use for this research study. The results of this study may be used to inform the design of a tailored education intervention to support the development of the interpersonal dimension of patient care. Such an education intervention may also include the development of a patient-centered care "skills sheet" to accompany the psychomotor skills station examination. This skills sheet would allow for the coding of provider verbal and nonverbal interactions while providing patient care. The cultivation and ongoing assessment of patient-centered care skills will provide EMS providers with another tool to help them navigate challenging patient care encounters.

Enhancing EMS providers' skills has a bi-directional benefit. Enhancing and strengthening skills for providing care to people experiencing OAO may reduce the chronic stress, apathy, and burnout often associated with these repeated calls for service. It may also improve patient health outcomes. CPR and Narcan are the standard of care for the treatment of imminent overdose death. Patient-centered care is presented in this research as a standard of care for the conscious, post overdose patient, and those presenting with addiction related illnesses. Patient-centered care by definition is void of implicit bias and stigma. It could be an essential tool in the toolbox for mitigating our nation's opioid epidemic.

Strengthening EMS providers' behavioral intention to a norm of patient-centered care could facilitate a shift in the attitudes, self-efficacy, and social norms of the EMS subculture. Currently, it is not uncommon to hear providers use disparaging terms when talking about patients who have overdosed. Such statements reflect negative attitudes that

inevitably have a negative impact on the interpersonal dimension of patient care. It is at this intersection where stigma enters into patient care. Providing direct educational experiences that humanize those with opioid addiction, increasing understanding of the medical model of addiction, and creating protocol and standard operating guidelines to establish patient-centered care as a standard of care in EMS will help to shift provider attitudes to reflect compassion, acceptance, respect, and equality (CARE) for those experiencing OAO. Education interventions that target provider attitudes, social norms, and self-efficacy in patient-centered care of people with OAO will close that intersection where stigma enters into patient care, and thus patient outcomes will improve. EMS providers' CARE for people experiencing OAO will increase the patients' sense of worthiness; they will feel like persons of value who are capable of recovery. In this manner, EMS providers in the state of Maine become agents of positive change within the communities they serve, helping to mitigate the opioid overdose epidemic. Infusing patient-centered care into preparatory coursework at the national and state level will assure that all new entry-level providers across the country will be prepared for the interpersonal (affective) dimension of patient care. Requiring ongoing education in patient-centered care for license renewal will enable current providers an opportunity to enhance and strengthen their interpersonal skills. Elevating the skill level of all providers, and providing them with tools and guidance to interrupt stigma in the patient-provider encounter, will help to mitigate our nation's opioid epidemic.

Definitions

Addiction – "a disease that affects both the brain and behavior" involving chronic, often relapsing episodes of drug seeking and use; despite harmful consequences interfering with ordinary life functioning and health (ASAM, 2017, p. n.p.).

Attitude - manner, disposition, or feeling regarding a person or thing; tendency, orientation, or expressive posture that influences action.

Community Paramedicine Provider - a licensed EMS provider who delivers non-emergent "care for patients at home or in other non-urgent settings…under the supervision of a physician or advanced practice provider" (Pearson & Shaler, 2017, p. 144).

Emergency Medical Services (EMS) - a system that provides emergency medical care in the prehospital setting. When activated by an incident that causes serious illness or injury, the focus of EMS is the emergency medical care of the patient(s) and rapid transport to the nearest medical facility.

Emergency Medical Technician (EMT) - A person who provides prehospital emergency medical care and transportation for critical and emergent patients who access the emergency medical services (EMS) system; may work for a municipal (public) or private agency. An EMT may have varying levels of training to perform a specific level of patient care under the direction of the state's Medical Director. In the state of Maine, these levels are First Responder, EMT Basic, Advanced EMT, and Paramedic.

Heroin - an opiate and a Schedule I narcotic under the federal laws of the United States (no medicinal purpose, highly abused).

Naloxone (Narcan) - A prescription medicine used for the treatment of an opioid emergency such as an overdose with signs of breathing problems and not being able to respond to stimuli.

Opiates - a natural drug with morphine-like effects, derived from opium.

Opioid - drugs derived from opiates including natural, synthetic, and semi-synthetic. Examples of opioids are: morphine, methadone, Buprenorphine, oxycodone, heroin, and fentanyl.

Overdose - the ingestion or application of a drug or other substance in quantities greater than are recommended, resulting in a toxic state or death.

Patient-Centered Care - care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions (IOM, 2012).

Self-Efficacy - refers to people's beliefs about their ability to produce designated levels of performance. Specific to a particular behavior, these beliefs determine how people feel, think, motivate, and behave.

Social Norm - the rules of behavior that are considered acceptable in a group or society. People who do not follow these norms may be shunned or suffer some kind of consequence.

Stigma - a mark of disgrace associated with a particular circumstance, quality, or person.

Theory of Planned Behavior - a theory that links beliefs and behavior, positing that attitude toward behavior, subjective norms, and perceived behavioral control together shape an individual's behavioral intentions and behaviors.

Summary

This chapter provided a brief overview of the opioid epidemic in our country and specifically in the state of Maine. This study asserted that EMS providers can help to close the treatment gap that exists for people with opioid addiction by adopting a patient-centered approach to interrupt the experience of stigma in patient care. This assertion is based upon the recommendation of the AMA's (2016) Task Force on Opioid Abuse to eliminate the stigma often experienced by people with opioid addiction in the patient care environment. The theory of planned behavior provides the theoretical foundation for this study's application of the AMA's "action agenda" to eliminate stigma in patient care, and aims to reduce health disparities experienced by people with opioid addiction/overdose. Chapter II next provides a review of literature from a transformative philosophical perspective to justify the assertion that EMS providers' patient-centered care will help to eliminate stigma in prehospital patient care, and close the treatment gap that exists for people with opioid addiction in the state of Maine.

Chapter II

REVIEW OF LITERATURE

This chapter presents an overview of the literature relevant to state of Maine EMS providers' behavioral intention to provide patient-centered care to people with opioid addiction and overdose (OAO). This literature review used a transformative philosophical approach to provide a "theory of beliefs" or theoretical assertion that EMS providers can help to eliminate the experience of stigma in prehospital care and close the treatment gap that exists for people with opioid addiction (Creswell, 2014, p. 10).

In the context of this study, a transformative approach, or worldview, aims to confront the experience of stigma, a social determinant of health, by cultivating a patient-centered approach to patient care in the prehospital setting. It is supported by the AMA "action agenda" to eliminate experiences of stigma by supporting EMS providers in developing patient-centeredness. This action aims to close the treatment gap that exists, thereby reducing health disparities experienced by people with opioid addiction (AMA, 2016; Creswell, 2014, p. 9). This research includes proposed action to adopt patient-centered care as a performance indicator for EMS providers to meet the therapeutic communication as outlined by the National EMS Education Standards. This literature review incorporates literature on variables that influence behavioral intention as supported by the aforementioned Theory of Planned Behavior (TPB). The researcher

reviewed literature from peer-reviewed scholarly journal articles, books, and other

resources available through Teachers College Gottesman Library and Columbia

University Library databases. This literature review examined current research in the

following areas: (a) opioids, (b) addiction, (c) stigma, (d) attitudes toward opioids and

opioid addiction, (e) self-efficacy in patient-centered care, and (f) intention to provide

patient-centered care to people experiencing opioid addiction and overdose.

Opiates, Opioids, and Overdose Deaths

Drug overdose deaths are the leading cause of preventable death in the United

States (CDC, 2016). The national rate of drug overdose deaths has increased 286%, per

100,000 persons, between 2002 and 2014 (CDC, 2016). The numbers cover both illegal

and prescription drugs. These death rates include a 200% increase in the rate of opioid

overdose deaths (Rudd et al., 2016). Rural states with virtually no overdose deaths in the

year 2000 are now experiencing statistically significant increases in death rates, with

heroin and other opioids as the leading cause of death (CDC, 2016). Nationally, the

highest death rate after 2009, 23%, was among Whites without a high school education

(Kolata & Cohen, 2016). By 2014, "the overdose death rate for Whites ages 25 to 34 was

five times its level in 1999, and the rate for 35- to 44-year-old Whites tripled" (Kolata &

Cohen, 2016, p. n.p.). Bowser, Fullilove, and Word (2017) hypothesized that the current

heroin epidemic in rural states is the direct result of both the prescription pain

medication-to-heroin transition; as well as an expansion and evolution of urban drug

trafficking into working-class suburban and low-income communities. Bowser et al.

posited that the internet, cell phones, and social media have revolutionized drug sales and

exchanges (p. 5). This evolution in drug distribution has moved the drug market into "suburban and low-income rural communities" across the country (p. 6). This "new" epidemic in rural America, advanced by the social marketing of illicit drugs, is an evolution of our nation's existing drug epidemic (p. 7).

Opiates are pain relievers known as narcotics and come from the poppy plant (CDC, 2016). Synthetic and natural opiates act similarly to one another in most ways; Most notably, respiratory depression and respiratory arrest. Opiates inhibit pain receptors; Thus, their use as a prescribed pain reliever. Opiates also function to mitigate anxiety and stabilize depression by creating a feeling of euphoria and calm. Common natural opiates are opium, morphine, codeine, and thebaine. Synthetic opiates, often called opioids, are man-made and do not occur in nature. Fentanyl, one of the most commonly used synthetic opioids, is extremely potent. Semi-synthetic opioids are drugs that are synthesized from natural opiates. Heroin, for example, is synthesized from morphine. Oxycodone and oxymorphone are synthesized from thebaine. These drugs do not fit specifically into one category because they are created from natural substances but do not occur in nature (CDC, 2016).

In the 1990s, synthetic and long-acting opioid pain medications were aggressively marketed and more heavily prescribed, "resulting in a marked increase in addiction nation-wide" (Sorg et al., 2016, p. 34). Addiction to pharmaceutical opioid pain medication and the transition to heroin use are also responsible for the alarming rise in drug-induced deaths (Sorg et al., 2016). However, this is only one avenue by which people have become addicted to opiates. The hidden epidemic within our nations opioid epidemic is the alarming number of adults who experienced adverse childhood

experiences (ACE). This early development trauma has "enduring negative effects on brain development" that may prime drug seeking behavior in adults (Van Der Kolk, 2014, p. 151). "At least half of all traumatized people" try to manage "their intolerable inner world with drugs" (Van Der Kolk, 2014, p. 268). The evolution of the drug market into rural communities has made heroin and other illicit opioids more accessible to those seeking to manage their intolerable world. The CDC (2016) reported 55,403 lethal drug overdoses in 2015, and estimated that 12,990 of the overdose deaths were related to heroin alone (Rudd et al., 2016). People using illicit opioid drugs such as heroin are more likely to experience an overdose, compared to those abusing other drugs due to the lack of quality control and regulation of street drugs (Rudd et al., 2016; WHO, 2014). Regardless of the etiology of drug use and addiction, the accompany shame and health inequity associated with drug addiction impede recovery. Finding workable solutions to this epidemic requires shifts in public policy such as defining addiction as a medical condition, enhancing harm reduction resources, increasing access to treatment, and eliminating the stigma of addiction (AMA, 2016; Bowser et al., 2017).

Emergency medical services (EMS) and their public safety partners are on the front lines of the drug addiction epidemic, trying to treat and prevent overdose deaths. EMS providers across the United States encountered more than 430,000 patients suspected of drug ingestion, and administered naloxone 150,000 times in 2014 (Kinsman, Elder, & Kanter, 2016, p. 2). As overdose rates continue to surge, EMS services are faced with the burden of how to fund the cost to make Naloxone and emergency treatment to reverse opioid overdoses more widely available for EMS and their public safety partners (law enforcement and firefighters) (Sorg et al., 2016). In the state of Maine, 1,565 doses

of Naloxone ($32 to $55 per dose) were administered to 1,133 patients in 2015

(Ambulance Run Data Report, 2016). This is a 137.4% annual increase in doses of

Naloxone administered since 2012 (Ambulance Run Data Report, 2016).

According to the CDC, Maine ranks third among a group of 13 states that has

experienced a statistically significant percentage increase in drug-induced deaths (Sorg et

al., 2016). Drug overdose deaths from 2014-2015 increased 27.3% in the state of Maine.

In 2016, the first nine months saw drug-induced deaths rise to 286, "exceeding the total

number (272; 37 percent increase) for all of 2015" (Mills, 2016, p. n.p.). This dramatic

increase is equivalent to "one person a day dying from a drug overdose" (Mills, 2017,

p. n.p.). This increase is predominately due to accidental overdose of illicitly

manufactured (non-pharmaceutical) fentanyl and fentanyl analogs (Mills, 2016; Sorg et

al., 2016). Marcella Sorg (2016), a research associate professor at the University of

Maine who compiles the statistics for the state of Maine Attorney General's Office,

reported that the increases in drug-induced deaths reflect people's transition from

prescription opioid use to heroin. People addicted to prescription opioids start using

heroin when the prescription source is no longer available.

Opioid-related mortality rates in the United States are "higher among men, non-

Hispanic Whites and American Indian/Alaska Natives, middle-aged individuals, those

living in rural areas, and having a lower socioeconomic status (SES)" (King, Fraser,

Boikos, Richardson, & Harper, 2014, p. 8). The state of Maine is described as one of the

most racially and ethnically homogeneous states in America. It is a rural state with

marked differences between northern and southern regions, and is sometimes referred to

as the "two Maines." The "two Maines" is a significant factor in the making of public

policy legislation to make available harm reduction resources for Maine's opioid addicts.

The north-south dichotomy is described as an economic divide between the "haves" in

the southern part of the state and the "have-nots" living north, east, and west of

Waterville. And yet, in the state of Maine, "drug deaths are spread throughout the state"

(Sorg et al., 2016, p. 39). Most counties in Maine "have seen an increase over time in the

rate of drug deaths" (Sorg et al., 2016, p. 39; also see Mills, 2017a). Moreover, "several

non-urban counties have experienced the lower drug mortality rates per 100,000

population" (Sorg et al., 2016, p. 39). The 2016 annual overdose death rate (per 100,000

residents in 2016) in Maine clearly indicates a statewide problem. Portland (Cumberland

County; death rate 26.7) has about 5% of the state's population and 11% (42) of overdose

deaths in 2016 (Sorg et al., 2016). The city of Bangor (Penobscot County; death rate

37.5) has 2% of the state's population and 9% (32) of overdose deaths in 2016 (Sorg et

al., 2016). Washington County had the highest death rate (63.6) in the state; it also has

the largest concentration of minority groups, with Native Americans representing 4.9% of

the population (U.S. Census, 2016). The remaining 2016 death rates per 100,00 residents

are: Androscogin 34.5, Handcock 31.2, York and Aroostook 29.7, Cumberland 26.7,

Kennebec 24.9, Somerset 19.6, and Oxford 17.5. No data are available for counties with

fewer than 10 deaths: Piscataquis, Franklin, Waldo, Knox, Lincoln, and Sagadahoc (Sorg

et al., 2016). See Figure 2 to review the geographic locations of each county and

corresponding death rates in Maine counties.
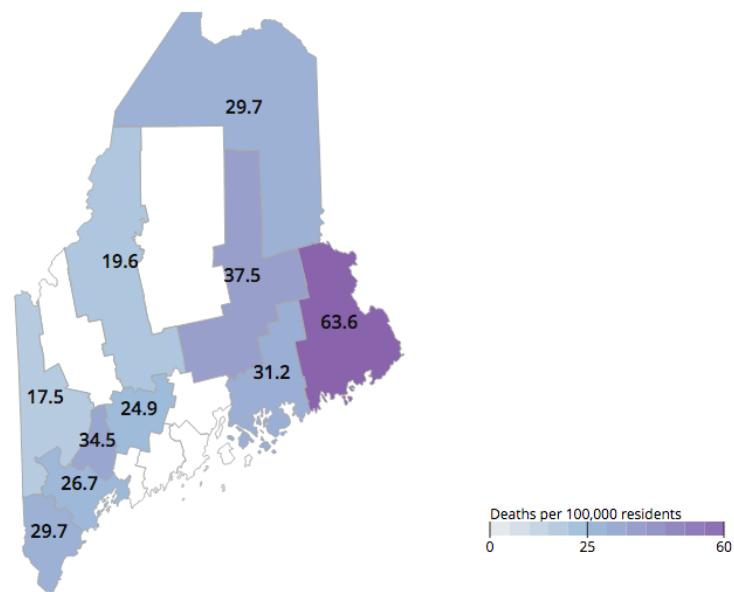
Figure 2. Death rates by opioids in Maine counties.
Source: Dr. Marcella Sorg, University of Maine Margaret Chase Smith
Policy Center, 2016

Many of the drug overdose deaths in Maine occur in marginalized groups that lack a "stable place to live or stable work history" and may have histories of mental illness (Sorg et al., 2016, p. 39). These marginalized groups are less likely to have insurance than the general population and lack resources to access treatment. However, others "are well-educated homeowners, employed" in a variety of occupations (p. 39). While the Maine population is overwhelmingly Caucasian, those who die from overdose are surprisingly diverse (Mills, 2016; Sorg et al., 2016). The drug deaths are clustered in the age group of 25 to 54 (Mills, 2016; Sorg et al., 2016, p. 39). "Males disproportionately occupy younger, while females occupy the older age categories; whereas the Maine general population is more evenly distributed among age and sex categories" (Sorg et al., 2016, p. 39). Moreover, "compared to averages for Maine's population as a whole, overdose victims are less educated and less likely to have been

born in Maine" (p. 40). Sorg et al. also conclude that, "as is true for many middle-aged Mainers, drug death victims had chronic medical problems…. Decedents may have been taking medications prescribed legitimately for conditions such as pain, depression, or anxiety" (p. 40). If these medications are taken in conjunction with opioids, it can result in dangerous and toxic side effects (Mills, 2016; Sorg et al., 2016, p. 40). While death is the most dramatic consequence of drug use, long-term drug addiction is also a serious health problem.

Addiction

Addiction is "a disease that affects both the brain and behavior" (ASAM, 2017, p. n.p.; Volkow, 2014). Drug addiction is defined as a "chronic, often relapsing brain disease that causes compulsive drug seeking and use, despite harmful consequences" including the risk of overdose (AMA, 2015, p. n.p.; Volkow, 2014). Prescribed opiates have played a significant role in the current drug epidemic (AMA, 2015). However, for many others, the etiology of their drug addiction is linked to genetic factors, mental illness, and adverse childhood experiences (ACEs). Each of these plays a role in the neurobiology of compulsive comfort-seeking behavior that results in opioid addiction (ASAM, 2017; Felitti et al., 1998). These factors change neurochemistry and prime the initial comfort-seeking decision to take drugs. While some believe this decision to be voluntary, current science points to the interplay of both internal and external triggers in priming engagement in drug use to be and feel normal (ASAM, 2017). Ongoing use causes physical brain changes that occur with use to impair future "ability to resist intense impulses to take drugs" (ASAM, 2017; Volkow, 2014; Wilcox, 2015). Due to

their pharmacological effects and resulting changes in the brain, opioids have a high potential for addiction (ASAM, 2017; CDC, 2016; WHO, 2014). Addiction results from a complex interplay of biological and psychosocial factors (Buchman, Skinner, & Illes, 2010). The dynamics within these biopsychosocial relationships either contribute to or inhibit the emergence of addiction and its treatment (Buchman et al., 2010). While this biopsychosocial model of addiction is well accepted in healthcare, the judgment that people with opioid addiction are "weak, deserving of their fate, and less worthy of care" remains embedded in American culture (Buchman et al., 2010; Juman, 2012; Kreek, 2011). These judgments produce feelings of self-loathing, and worthlessness that deactivate social engagement, and thus contribute to addiction's lethality (Juman, 2012; Kreek, 2011; Reeder & Pryor, 2008; Van der Kolk, 2014).

Access to Treatment

Despite the significant number of people with opioid addiction, only a fraction receive treatment (NIDA, 2016). "Approximately 7.1 million people in the U.S. are dependent on or abuse illicit drugs, yet only about 15% receive treatment for their disorder" (NIDA, 2016, p. n.p.). Addiction treatment has been shown to reduce associated healthcare and social costs far more than the actual cost of the treatment itself. Substance abuse costs our nation over $600 billion annually (NIDA, 2016). In the state of Maine, the economic burden of substance use disorders was over $1.4 billion dollars in 2010, "or $1057 for every Maine resident" (Sorg et al., 2016, p. 44). Treatment is much less expensive than opting to not treat and incarcerate addicted persons. For example, the average cost for 1 full year of methadone maintenance treatment is approximately $4,700 per patient, whereas 1 full year of imprisonment costs approximately $18,400 per person

(NIDA, 2016). The treatment gap may reflect the negative consequences associated with provider attitudes and implicit bias toward patients with opioid addiction. Patients "who experience stigma regarding their drug use are less likely to seek treatment" (Villa, 2016, p. n.p.). Nationally, there is an estimated $510 billion-dollar cost associated with untreated addiction (healthcare, criminal justice, and lost productivity) (NIDA, 2016). The problem of the treatment gap is complex health inequity. It requires a focus on the social determinants of health such as stigma and social isolation that result from unequal power structures in patient care.

Social Determinants of Health

Social determinants of health include the very subjective social norms discussed by the Theory of Planned Behavior (TPB). They also include public policy and social stratification within the social environments (Galea & Vlahov, 2002, p. 136). "Social determinants are in part responsible for the unequal and avoidable differences [disadvantage] in health status within and between communities" (HealthyPeople.gov, 2015, n.p.). Social disadvantage results from "someone's relative position in a social pecking order" or social hierarchy within a group or community (Braverman, 2014, p. 6). This social stratification influences "how people are treated in a society" (p. 6). It also affects every aspect of patient care and the patient experience (Chapman et al., 2013; Villa, 2016). While the healthcare profession "strives for equal treatment of all patients, disparities in patient care are prevalent" (Chapman et al., 2013, p. 1504). Persistent and intentionally discriminatory practices have a negative effect on health across generations. However, unintentional discriminatory practices such as stigma and bias pose an even

greater harm to health (Braverman, 2014, p. 8). Strongly held negative attitudes regarding

patients stigmatizing identity "contribute to healthcare disparities" by shaping provider

behavior (Chapman et al., 2013).

Stigma

Stigma is a central driver of morbidity and mortality among people with opioid

addiction (Hatzenbuehler et al., 2013, p. 813; Juman, 2012; Kreek, 2011). Stigma is

defined as a negative attribute signaling that one is flawed or condemned and, as such, to

be rejected and avoided (Goffman, 1963, p. 7; Hatzenbuehler et al., 2013, p. 813; Reeder

& Pryor, 2008, p. 175). Enacted stigma signals danger and activates the fight, flight or

freeze biological systems and deactivates emotional engagement systems (Ross, 2014;

Van der Kolk, 2014). Without a felt sense of safety, addiction remains concealed by

patient shame, and secrecy. The ongoing trauma of enacted stigma in our communities

hinders early diagnosis and treatment, and contributes to poor treatment outcomes

(HealthyPeople.gov, 2015; NIH, 2007). Stigma erodes hope that recovery from opioid

addiction is even possible. If stigma were removed, people would it was safe to expose

their struggle with addiction and seek treatment (Juman, 2012; Kreek, 2011; Reeder &

Pryor, 2008). Until then stigma remains "a significant source of stress and social

disadvantage" cementing health inequities that drive morbidity and mortality at a

population level (Hatzenbuehler et al., 2013, p. 813). p. 813).

Stigma involves many factors, including stereotypes, attitudes, and behavior

(discrimination) (Stull et al., 2013). Commonly held stereotypes about people with opioid

addiction that have been consistently identified are helpless (e.g., incapable of

independent living or competitive work), shameful (e.g., weak character is responsible

for the disorder), and dangerous (e.g., potentially violent). The extent to which

stigmatizing attitudes are endorsed by EMS providers is unknown. Their individual

attitudes and beliefs, however, are likely to reflect those of the general population (Stull

et al., 2013). As members of the communities they serve, EMS providers, like any human

beings, may hold hidden biases regarding people with opioid addiction. Industry-wide,

EMS providers and their public safety partners respond to an exhausting number of calls

for overdose to the same residence, multiple times a week, for that same patient. They do

an amazing job in some of the most challenging of circumstances. Despite medical

training that addiction is an illness requiring medical treatment, many still believe that

addiction is a choice and addicts should suffer the consequences of their overdose. These

attitudes are reflected in the words used to describe patients with opioid addiction: "dirt

bag," "junkie," "piece of shit," "Darwinism at its finest," and "drug seeker." Such phrases

reflect providers' social conditioning. Socially conditioning is the process of adopting

certain beliefs, behaviors, and emotional reactions regarding, in this example, subgroups

within the larger society (Ross, 2014). Socially conditioned beliefs are "assumed truths"

about the subgroup and establish in-group/out-group bias that perpetuates health

disparities. The out-group is deemed deviant, immoral, or otherwise objectionable

(Campbell & Manning, 2014, p. 693). Strongly held negative beliefs and attitudes prime

enacted stigma or microaggression in patient care (Sue, 2010; Walls, Gonzalez, Gladney,

& Onello, 2015).

Enacted stigma on the surface has no malicious intent but is a kind of violence

nonetheless (Campbell & Manning, 2014). It might look like frequent subtle indignities

expressed in body language (behavior) such as: keeping a physical distance, hiding hands

in pockets, not making eye contact, and communicating in a limited way with the patient. It may even be reflected in the subtle change of one's voice and breathing rate that convey a heightened state of caution for working with overdose patients. The fears of rejection and negative evaluation experienced by patients with opioid addiction create physiologic and psychologic distress that prompts them to socially isolate and avoid treatment (Hatzenbuehler et al., 2013, p. 815). "Social exclusion, marginalization, and chronic stress" are the causal "pathways through which stigma is linked" to health disparities (Browne et al., 2012; Hatzenbuehler et al., 2013, p. 814; Phelan, Link, & Tehranifar, 2010; Walls et al., 2015, p. 232). Enacted stigma is a critical social determinant of health (Browne et al., 2012; Hatzenbuehler et al., 2013, p. 819). It is critical to confront stigmatizing attitudes among healthcare providers. The challenge is that perpetrators of enacted stigma are often good people, unaware of their stigmatizing attitudes and behavior while working with marginalized groups (Ross, 2014; Sue, 2010). For many people with addiction, the experience of stigma serves only to reinforce core beliefs of being alone, worthless, and unable to change their current situation, and delay access to treatment and recovery.

EMS providers' attitudes toward providing care to patients with opioid addiction/overdose are a function of their socially conditioned beliefs (behavioral belief) (Ajzen, 1991, pp. 190-191). These attitudes develop from beliefs about the utility of the desired or target behavior to deliver intended positive outcomes (p. 191). Desirable outcomes are favored and form positive attitudes toward the target intervention behavior. Non-desirable outcomes are unfavored and form negative attitudes toward the target intervention behavior. Since attitudes predict intention to perform behavior, EMS

provider attitude toward opioids and those that use and abuse them are likely to predict their intention to provider patient-centered care (Ajzen, 1991). Additionally, strongly held attitudes are also more stable over time and less likely to change in response to persuasive messages, and acquisition of new knowledge (Krosnick & Abelson, 1992). Such entrenched strongly held negative attitudes give rise to implicit bias and enacted stigma (Ross, 2014). Illuminating attitude toward opioids and opioid addiction facilitates the identification of specific areas that may be points of entry for stigma to enter into the patient care experience.

Confronting Roadblocks to Treatment

Experiences of stigma between the patient care experience "is perhaps the single largest contributor to the mortality rate" for those experiencing opioid addiction (Hatzenbuehler et al., 2013, p. 813; NIH, 2007). Confronting stigma-based roadblocks in the patient care experience begins with an understanding of the importance of relationship between patient and healthcare provider. Relationship is the "interface" or workspace for healing. This workspace is where the provider engages with the patient in a non-hierarchical manner that reflects CARE. For people with opioid addiction who experience extreme stigma and marginalization, this experience primes feelings of self-worth and safety; both of which are catalysts for engaging in treatment. The provider-patient relationship is as important than any medical treatment provided. The interpersonal relationship is the workspace for healing the trauma of enacted stigma. CPR and Narcan afford the person experiencing an opiate overdose another opportunity for future relationships. Indeed, naloxone (Narcan) blocks the effects of opioids and prevents

overdose deaths, but it alone does not prime social and emotional engagement. The

patient's experience of relationship, upon regaining consciousness, and feelings of

worthiness born out of that relationship are what fuel the motivation to seek treatment (S.

Andrew, personal communication, December 29, 2016). Moreover, just as some patients

require varying doses of naloxone to mitigate the effects of opioid overdose, some

patients require varying doses of *CARE-ing* relationships in order to overcome the stigma

and marginalization of addiction. Multiple experiences of relationship, over time and

with multiple providers, may be needed for a particular patient to experience the feeling

of being worthy enough to engage in and sustain treatment.

Positive Emotion and Motivation

Fredrickson's (2001) Broaden and Build Theory helps to explain why provider

attitudes and patient-centered communication are key components supporting people with

opioid addiction to enter treatment. It explains the power of positive emotions in the

patient-provider "workspace" to facilitate healing. The Broaden and Build Theory posits

that positive affect, a general concept that includes emotions and attitudes, "prompts

individuals to engage with their environments" (Fredrickson, 2001, p. 219). Experiences

of positive emotion, a subset of positive affect, "function as internal signals to approach

or continue" (Fredrickson, 2001, p. 219; Schiffrin & Falkenstern, 2012). Positive

emotions expand people's thought-action repertoires, which in turn serve to build social,

psychological, and cognitive resources (Fredrickson, 2001, p. 218). Joy, safety, and

worthiness, for example, are emotions that lead to approach behavior (Fredrickson, 2001,

p. 222; Schiffrin & Falkenstern, 2012). Approach behavior leads to better social

interaction which encourages active engagement (Fredrickson, 2001, p. 222). Positive

emotions are the vehicles for social connection reflective of a sense of belonging and positive relationships (p. 227). These social resources constitute a psychological lever for considering and accessing addiction treatment. As well, these social resources outlive the emotions from which they were acquired (Schiffrin & Falkenstern, 2012). Just as positive emotions serve to broaden people's momentary thought-action repertoires, types of negative emotions (e.g., anxiety, fear, shame) "serve to narrow these same repertoires" (Fredrickson, 2001, p. 222). According to the Broaden and Build Theory, positive emotions also "function as efficient antidotes" for negative emotions (Fredrickson, 2001, p. 223; Schiffrin & Falkenstern, 2012). This theory provides the theoretical framework for requisite emotion associated with the choice to engage in treatment.

The Broaden and Build Theory states that positive emotions do much more than cause us happiness, joy, and worthiness in the moments we experience them (Schiffrin & Falkenstern, 2012). They also broaden behaviors ("thought-action repertoires"), such as awareness, curiosity, and motivation. The more positive emotions people experience, the wider the range of thought-action repertoires they have (Schiffrin & Falkenstern, 2012). Over time, thought-action repertoires build internal resources and abilities. These resources (courage and motivation) last much longer than the initial positive emotions that led to their creation, and they contribute significantly to well-being and increase the likelihood of accessing addiction treatment services.

Patient Centeredness for Health Equity

The Broaden and Build Theory also explains why a non-hierarchical, patient-provider "workspace" is prescriptive for EMS operations. Experiences of non-

hierarchical, patient-provider relationships generate feelings of safety, respect, and acceptance that prime motivation to seek treatment. A non-hierarchical relationship is an attribute of patient-centered care. Patient-centered care is based on the beliefs that providers need to: (a) consider patient needs, wants, perspectives, and experiences; (b) offer patients opportunities to provide input into and participate in their care; and (c) "enhance the partnership, and understanding in the patient-provider relationship" (Zachariae et al., 2015, p. 3). "Patient-centeredness" is descriptive of "how healthcare providers should interact and communicate with patients" (Saha, Beach, & Cooper, 2008, p. 1275). Patient-centered care is a shift from a hierarchical authority (provider/patient) in patient care relationships to a non-hierarchical equality (provider = patient) that reflects shared power in decision making (Saha et al., 2008; Wallace, 2008, p. 5). The complex challenge for EMS providers is that, like other public safety partners, the nature of their work is "subject to the influence of dominant (and sometimes custodial) discourses" of scene safety, and patient care management that prevails in rapidly evolving emergency situations (Walsh, Freshwater, & Fisher, 2012, p. 158). At times, required action to assure scene safety and patient care management compromise and perhaps supersede the practice of patient-centered care with patients. This is not an abandonment of patient-centered care, but instead a conscious decision to prioritize *life safety.*

This research study is a direct effort to assure health equity in the prehospital care of people with opioid addiction in the prehospital setting. Assuring health equity in the prehospital setting means that every patient is given the same opportunity to stay healthy, regardless of their race, ethnic origin, social status, or other socially determined factor (HealthyPeople.gov). This is a shared goal of our nation's health policy, *Healthy People*

2020. Developed by the U.S. Department of Health and Human Services, *Healthy People 2020* commits to eliminating barriers to equity and health by implementing policies and supporting the development of interventions that aim to "achieve health equity" for all Americans. This study sought to explore predictors of intention to perform patient-centered care to people with opioid addiction. People with opioid addiction, as a group, experience a stigma and marginalization that threaten their health. Assuring that they do not experience this in the prehospital patient care setting and ensuring that they receive patient-centered care is the highest standard of care to promote health and equity.

Pursuing health equity also means "striving for the highest possible standard" of healthcare for all people and "giving special attention to the needs of those at greatest risk of poor health" (Braverman, 2014, p. 6). In the United States, people with opioid addiction who live in rural and poor communities are at greatest risk of poor health (Fullilove, 2009). People in these communities experience greater social and economic obstacles in accessing harm reduction and addiction treatment services. Some of these obstacles are linked to acts of discrimination and exclusion that perpetuate health disparity. *Healthy People 2020* defined a health disparity

> as an avoidable health inequality that are closely linked to people's racial or ethnic group, religion, socioeconomic status, gender, age, or mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics. (HealthyPeople.gov)

Reducing these health disparities is how we move toward greater health equity (Braverman, 2014, p. 8). Moving toward greater equity is achieved by improving the health of those who are marginalized within our communities (p. 8). This study proposed that improving and supporting EMS providers' development of positive attitudes toward OAO and self-efficacy in patient-centered care are important measures will reduce

experiences of stigma in the patient care experience. The direct measure of behavioral intention to provide patient-centered care to people with opioid addiction will be used to inform the design of tailored intervention and shape policy changes to ensure that people with opioid addiction receive the highest standard of care.

The Institute of Medicine (IOM, 2012) report "Crossing the quality chasm: A new health system for the 21st century" highlighted a need to develop "intervention strategies to improve health outcomes in vulnerable populations" (p. 2). It recommended that research approaches and resulting interventions must embrace this paradigm shift of "valuing everyone equally" (Beal, in IOM, 2012, pp. 77-78; HealthyPeople.gov, 2015). The core values and skills of patient-centered care (shared power, considering patient needs, and a focus on compassionate relationship) are requisite in addiction treatment. The CARE embedded in this practice feeds a sense of trust and safety, helping to regulate the nervous system, and enabling the patient to build a rapport with the EMS provider. It is also a trauma informed approach, essential in the treatment of people with ACE histories and ongoing trauma of enacted stigma in adult life (Van Der Kolk, 2014). This practice approach helps to regulate the patient's nervous system and rapport building. The combined effect of this approach supports a neurobiology that receptive to new information and dialogues about addiction treatment. Miller and Rollnick's (2013) Motivational Interviewing (MI) skills and transformative learning experiences that provide direct, humanizing experiences with opioid addicts have been identified as effective methods in the facilitation of a relational workspace between patient and provider (Elwyn et al., 2014; Miller & Rollnick, 2013). These are not one-time interventions, rather they require ongoing practice to develop the competencies of

patient-centered care. Ongoing practice would include the coding and coaching of skills to support their integration in context of prehospital patient care. Tailoring the intervention to meet the unique needs of EMS providers will ensure meaningful improvements in patient-centered practice and markedly reduce stigma in the patient care experience (Livingston et al., 2011, p. 39). Collaboration with policymakers and community groups that share this vision for social change will reduce health disparities experienced by people with opioid addiction.

The non-profit Dignity for Opiate Users in Southern Maine is an example of a community-based effort (intervention) to reduce health disparities experienced by people with opioid addiction. It is based on the premise that stigmatizing attitudes come from social conditioning and stereotype, and can be influenced by education. As an extension of the work of the Health Education Training Institute (HETI), this nonprofit seeks to promote opportunities for the development of motivational interviewing as a means of helping to bring compassionate conversations into the care of people with opioid addiction. HETI aids in the development of compassionate conversations by facilitating experiences that build empathy and understanding of people experiencing opioid addiction. Enhancing compassionate conversations in the prehospital care of people with opioid addiction is a patient-care approach supported by the AMA (2016) recommendation for reducing stigma. It is a relationship-based approach to social change that includes elements of both community organizing and community building (Fullilove, 2009). Community organizing is an approach to social change that helps affected groups work together to make a difference on issues directly influencing the group (Fullilove, 2009). Community building is defined as a group of people with a shared purpose

(Fullilove, 2009). It recognizes that a key to social change is building social cohesion via authentic relationship. In much the same manner, the development of MI skills as part of a patient-centered competency for EMS providers in the state of Maine is a community-based approach to social change. Because EMS providers are often members of the communities they serve, supporting their ability to provide the best standard of care to people with opioid addiction is essential. Obtaining a measure of potential predictors of intention to provide patient-centered care is an essential first step in determining how best to support this social change. This measure will be used to inform the future development of an intervention as well as promote policy changes that will ensure EMS providers are prepared to provide patient-centered care to people with opioid addiction/overdose.

Rationale for the Examination of Emergency Medical Services

The 2012 IOM report previously mentioned "highlights persistent and significant gaps between the quality of healthcare people should receive, and the quality of care they actually receive" (p. 76). Emergency Medical Services (EMS) are the frontline of the healthcare system in the United States. A concern for EMS is that patient care may be subject to asymmetric power relationships. Often, life safety and scene safety are prioritized over patient-centered communication in these challenging and rapidly evolving environments (Walsh et al., 2012, p. 158). These are times when the required action supersedes the practice of patient-centered care. The majority of calls for service in EMS do afford ample time and space for a patient-centered approach and building a rapport with patients.

EMS care in rural states such as Maine is unique and therefore requires unique solutions. In rural Maine communities, EMS providers respond to both emergent and non-emergent calls for service. Traditional skills are used in a non-traditional way to serve the needs of individual patients and the needs of the community. Community blood pressure clinics, expired medication drug drop-off programs, community education programs, and in-home monitoring of chronic illnesses are essential to developing community partnerships and relationships with community members. These relationships are at the heart of EMS care in more rural areas, where often the EMS provider is also a member of the community he or she serves. To do this successfully, providers must be open-minded, adaptive, and disciplined in their pursuit of equity in healthcare. This can be challenging when they have socially conditioned, implicit biases toward a marginalized group within the community. Implicit bias opens the door for enacted stigma that harms patients. To be clear, well-intentioned, good people act with implicit bias. It is a byproduct of social conditioning that socially isolates and harms people identified as "different" and judged as "bad." Enacted stigma fueled by implicit bias in rural communities negatively influences access to community health resources. As members of communities, EMS providers are held to the higher standard. EMS providers must ensure health equity for all patients. Unlike urban EMS services, more rural area providers are likely to know their patients on a first-name basis. Relationships develop with "frequent fliers," patients who have repeated calls for service within a short period of time. Rural areas also have extended transport times to hospitals—20 to 40 minutes or longer depending on the weather and geographic location. These variables create the unique opportunity for EMS providers to use a patient-centered care approach to improve

the patients' experience and health outcomes, and ensure health equity for all patients. In the context of patients belonging to a marginalized group within the community, patient-centered care is prescriptive in disrupting enacted stigma by EMS providers.

As reflected in the preliminary study, EMS providers in the state of Maine believe they are proficient in administering life-saving Narcan; they also believe that additional supports and systemic changes are needed to expand the skill set of EMS providers to include a patient-centered approach in the care of patients with opioid addiction. Currently, in the state of Maine, there is no formal training nor the expectation that providers have this skill. Requiring proficient demonstration of patient-centeredness as a performance indicator within the "clinical behavior and judgment" education standard for EMS providers would ensure that all new entry-level providers, and those transitioning to a new license level, will have this skill set. The National Emergency Medical Services Education Standards (NEMSES) for EMS identify the minimal terminal objectives for entry-level providers. All objectives were developed by the U.S. Department of Transportation, in accordance with the American Heart Association Guidelines for cardiopulmonary resuscitation and emergency cardiac care, and the U.S. Department of Health and Human Services Centers for Disease Control and Prevention National Trauma Triage Protocol (National Highway Safety and Transportation Association [NHSTA], 2009). The NEMSES define the cognitive and psychomotor "competencies, clinical behaviors, and judgments" that EMS providers are required to demonstrate in order to meet the "practice guidelines defined in the National EMS Scope of Practice Model" (NHSTA, 2009, p. 7). The clinical behavior and judgement include both "therapeutic

communication and cultural competency," and each is identified with varying degrees of

proficiency as required for each scope of practice (EMR, EMT, AEMT, and Paramedic):

> Emergency Medical Responder (EMR) - Communicates to obtain and clearly transmit information with an awareness of cultural differences; often referred to a "first responder.

> Emergency Medical Technician (EMT) - Communicates in a culturally sensitive manner; often referred to as Basic EMT.

> Advanced Emergency Medical Technician (AEMT) - Communicates in a culturally sensitive manner.

> Paramedic - Effectively communicate in a manner that is culturally sensitive and intended to improve the patient outcome. (NHSTA, 2009, p. 51)

State-approved EMS education programs must meet or exceed these standards,

and providers must successfully complete one of these state-approved courses in order to

be licensed to practice in their state (National Registry of Emergency Medical

Technicians [NREMT], 2016). However, there is no prescribed curriculum or method of

instruction. While this allows for diverse and tailored implementation to "meet local

needs and evolving educational practices," it does not ensure that all EMS providers enter

the field with a core set of defined skills (NHSTA, 2009, p. 1). Traditional education

programs focus primarily on medical and trauma-related skill development via single-

loop learning and acquisition of core knowledge. Competencies such as building patient

rapport, sharing power, and navigating interpersonal communication are not taught, nor

are they evaluated by the cognitive and psychomotor examination for National EMS

certification and licensure. It is generally agreed among Maine EMS leadership that

cultural competency and therapeutic communication are professional development

priorities for today's prehospital providers (Caligiuri et al., 2011, p. 1; Shaun St.

Germaine, personal communication, 2017).

One avenue for expanding resources available to support EMS providers in providing care to people with opioid addiction is the incorporation of community paramedics in prehospital care. While 9-1-1 EMS services focus on providing emergency treatment of acute medical problems and transporting these patients to regional hospitals, community paramedics (CP) provide ongoing management of chronic conditions. The community paramedic program in Maine serves as an exemplar for "meeting the healthcare needs of people living in rural areas" (Pearson & Shaler, 2017, p. 142). Community Paramedicine is a model of "community-based healthcare in which paramedics' function outside the customary emergency response and transport role" and "fill gaps in the local healthcare delivery system" (Kizer, Shore, & Moulin, 2013, p. 7; Pearson & Shaler, 2017, p. 142). CPs "help high-risk patients manage their chronic diseases, comply with medication regimens, and access social services" (Kizer et al., 2013, p. 2; Pearson & Shaler, 2017, p 142). A unique aspect of Maine's CP program is meeting patients in environments, such as their home, that are most suited to their well-being, promote healing, and offer buy-in to accessing services (Pearson & Shaler, 2017). "Nationally, persons residing in rural areas are reported to have poorer health status" (Pearson & Shaler, 2017, p. 143) and higher rates of opioid addiction than their urban counterparts (Mills, 2016). This buy-in of CP services means that patients may include increased willingness to explore and access local drug treatment services. CPs already undergo additional education, for which the exact requirements depend, in part, on the scope and location of the CP program (Kizer et al., 2013, p. 8; Pearson & Shaler, 2017). The inclusion of specific, tailored training and the required competency of patient

centeredness will ensure that CPs are fully equipped for their expanded clinical responsibilities in diverse community settings.

To support the unique needs of communities across the state of Maine, the EMS system is coordinated by regional offices. Three EMS regional offices provide oversight to six EMS regions within the state of Maine. The regional EMS offices coordinate the EMS system in their respective counties. Each region provides medical control, quality improvement, and training. For example, Aroostook regional office governs Region 5 (Aroostook County). Atlantic Partners regional office governs Region 1 (York, Cumberland, and Sagadahoc Counties), Region 3 (Kennebec and Somerset Counties), Region 4 (Hancock, Penobscot, Piscataquis, and Washington Counties), and Region 6 (Lincoln, Waldo, and Knox Counties). The tri-county regional office governs Region 2 (Androscoggin, Franklin, and Oxford). Dividing the state into EMS regions allows for a tailored approach to supporting providers in meeting the needs of the communities they serve. This includes alerts and updates about novel opioid and opiate analogues such as Carfentanil circulating in specific regions and adjusting response protocols for those regions.

Rationale for Examining Attitude

EMS providers and their public safety partners (e.g., police, firefighters) play an important role in increasing access to effective treatment and thus decreasing the burden associated with the opioid epidemic (Hawk, Vaca, & D'Onofrio, 2015, p. 238). EMS providers collaborate with public health partners to provide, identify, and refer patients to treatment services within their own communities (Hawk et al., 2015, p. 235; Kinsman et

al., 2016, p. 6). Professional development in EMS has been largely focused on knowledge of the biology of addiction and skills training to administer naloxone. This professional development facilitates the treatment of addiction as a disease (Hawk et al., 2015, p. 238). The identification of addiction as a disease is imperative in reducing stigma associated with opioid addiction. Research has suggested that it is the quality of the relationship between patient and provider that has the greatest impact on closing the treatment gap (Miller & Rollnick, 2013). Patient centered care is promoted as an approach to enhance therapeutic communication and rapport building in the context of prehospital patient care; intended to interrupt stigma, and enhance the quality of care.

There is considerable evidence that attitudes (positive and negative) influence "person-perception," judgment, interpersonal behavior, and decision making (Phelan et al., 2015, p. 319; Skinner et al., 2005). Negative "attitudes can reduce the quality of care for patients...despite the best intentions of healthcare providers to provide high-quality care" (p. 319). This is because provider attitudes may reflect: (a) societal attitudes that depict people with opioid addiction as dangerous, weak-willed, and immoral; (b) stereotypes of these patients as difficult to work with; and (c) personal or professional experiences (Crothers & Dorrian, 2011, p. 1). These factors shape providers' determination of how worthy these patients are of care and influence the relationship that forms between a provider and patient (Crothers & Dorrian, 2011). "Behaviors that emanate from negative attitudes...are known as enacted stigma" (Phelan et al., 2015, p. 320). Enacted stigma "reduces the quality, and even the quantity, of patient-centered care, and signals to the patient that he or she is being perceived in terms of his or her stigmatized identity"; moreover, patient perception of this experience of negative

attitudes "cause them to feel disrespected, inadequate or unwelcome, thus negatively affecting the encounter quality and their willingness to seek needed care" (p. 319). Given the importance of attitude in providers' interactions with patients, attitude is an important predictor of effective, non-hierarchical, interpersonal engagement with people experiencing opioid addiction (p. 319; Watson et al., 2006, p. 260).

Measures of Attitude

Attitude is a construct defined as a "mindset or a tendency to act in a particular way due to both an individual's experience and temperament" (Pickens, 2005, p. 44). When we refer to a person's attitude, it is a reference to "the person's cognitions, emotions, and behavior" (Chatterji, 2003; Pickens, 2005, p. 44). Attitude is either positive and negative. A positive attitude can be explained as a person's judgment (evaluation) of *"likes"*; a negative attitude can be explained as a person's judgment (evaluation) of *"dislikes."* Evidence for the enduring nature of positive or negative attitudes is inferred from individuals' self-reports and behavior. A measure of an individual's attitude (positive or negative) alone can only predict that the individual will do "something" that is consistent with his or her attitude (judgment). The level or magnitude of the positive or negative attitude provides more information about associated behavior. The measure of an attitude's magnitude (degree) or intensity, such as "strongly agree" or "strongly disagree," is also important because strongly held attitudes are more stable over time and are less likely to change in response to persuasive messages and new information (Krosnick & Abelson, 1992). Strongly held attitudes are better predictors of behavior than weak attitudes (Krosnick & Abelson, 1992). "Attitudes also impact the extent to

which knowledge is accepted and used in practice" (Watson et al., 2003, p. 4). The assessment of the magnitude of that attitude allows EMS educators to infer that an individual may be more or less receptive to professional development training, and more or less likely to be supportive and compliant with various standards of practices. An examination of EMS providers' attitudes is needed to inform future evidence-based professional development.

Dimensions of Attitude

Attitudes toward patients who have opioid addiction are generally measured or inferred using several indicators that include: general attitude, role adequacy, role legitimacy, education, and work experience (Silins, Conigrave, Rakvin, Dobbins, & Curry, 2007, p.191; Skinner et al., 2005, p. 451). Each of these indicators acts as a measure of attitude toward drugs and drug addiction. The attitudinal measures are antecedents priming providers' likelihood or intention to behave in a specified way with patients (Ajzen, 2006a; Villa, 2016). General attitude refers to a person's mindset toward and evaluation of a person, object, or event as well as "a tendency to act in a particular way due to both the individual's experience and temperament" (Pickens, 2005, p. 44). Role adequacy refers to a sense of self-efficacy in responding to opioid addiction issues (Skinner et al., 2005). Role legitimacy refers to "perceived boundaries of professional responsibility and right to intervene" (Skinner et al., 2005).

Self-Efficacy in Patient Centeredness

The construct of self-efficacy is a measure of perceived capability (Bandura, 2006). Perceived self-efficacy is "a determinant of intention and a judgment of

capability...to execute given types of performances" (Bandura, 2006, p. 309; Zachariae

et al., 2015, p. 2). Perceived efficacy "affects behavior not only directly, but by its impact

on...goals and aspirations, outcome expectations, affective proclivities, and perception of

impediments and opportunities in the social environment" (Bandura, 2006, p. 309;

Zachariae et al., 2015, p. 2). Bandura (2006) recommended that perceived self-efficacy

assessments "be linked to the behavioral factors over which people can exercise some

control" (p. 309). For example, this would include perceived capability to "show a

genuine interest in the patient and his/her situation" (Zachariae et al., 2015, p. 5). As

Bandura (2006) noted, "Behavior is predicted by people's beliefs in their capabilities to

do whatever is needed to succeed" (p. 310). Self-efficacy affects an individual's behavior

in such key aspects as the tasks and approaches to communication and patient

centeredness (Zachariae et al., 2015, p. 2).

Patient-centered care is defined as exhibiting three core attributes:
(a) "considering patient needs, wants, perspectives, and individual experiences,"
(b) "offering patients opportunities to provide input into and participate in their care," and
(c) "enhancing the partnership, and understanding in the patient-physician [provider]

relationship" (Zachariae et al., 2015, p. 3). Patient-centered self-efficacy is defined as a

provider's "confidence in his or her ability to exert each particular behavior in a manner

so that the patient would perceive it according to its underlying intention" (p. 3). Patient-

centered behaviors are associated with bidirectional (patient and provider) well-being and

positive patient outcomes (King & Hoppe, 2013, p. 386; Zachariae et al., 2015, p. 2).

Theory of Planned Behavior Interventions

Ajzen's (1991) Theory of Planned Behavior (TPB) and framework for the design of behavioral interventions is both the theoretical foundation and framework for the research design of this study. TPB interventions are designed to change or refine a specific behavior are "directed at one or more of the TPB variables: attitudes, subjective norms, or perceptions of behavioral control" (Ajzen, 2006a, p. 2). Changes in these variables (predictors) "produce changes in behavioral intention, and given adequate control over the behavior," prime behavior under appropriate circumstances (p. 2). Each of these variables is in itself predicted by the prevailing and "readily accessible" beliefs within a population (p. 2). These beliefs help to estimate the relative importance of attitude, subjective norm, and perceived behavioral control in behavioral intention (p. 3). They also help to illuminate the forces and factors that provide the basis of these variables for the design of future interventions (p. 3).

Demographics are background factors in the TPB that influence predictor variables (Ajzen, 2006b). The common survey demographics included in this survey are gender, ethnicity, age, and education. These demographic factors help to describe the population. Additional demographics pertinent to a study of EMS providers are: license level, service region, service role, years of service, and cross-training. Service role, for example, is of interest to this study because those in leadership roles are often the people providing EMS education and monitoring quality assurance measures for both the local EMS department as well as the state of Maine EMS. Cross-training in other public safety roles such as community paramedicine and communications may give EMS providers a set of additional knowledge and skills that influence intention to provide patient-centered

care to people experiencing OAO. Exploring relationships among providers' license level and service region may illuminate a unique need for intervention for each of these factors.

Framework

According to Ajzen's (2006a) framework, three separate yet interdependent and formative investigations are needed in order to design a behavioral intervention. A preliminary study was conducted to identify accessible behavioral, normative, and control beliefs (Ajzen, 2006a). The responses were used to identify the most commonly held beliefs in the group (p. 2). They helped to determine the "relative importance of each of the predictors" of behavioral intention (p. n.p.), and inform the selection of the survey instruments used in this research. According to Ajzen (2006b), the relative importance of each predictor "is likely to vary from one behavior to another and from one population to another" (p. n.p.). The lack of relative importance of any one predictor "indicates that for a particular behavior and population, the factor in question is not an important consideration in the formation of intention" (p. n.p.).

Once accessible beliefs were identified, and the relative importance of variables (predictors) were evaluated, a review of psychometrically validated instruments was considered for inclusion in the final survey study questionnaire (Step 2). This study aimed to measure attitudes toward opioids and opioid addiction, and self-efficacy in patient-centered care as separate but overlapping antecedents of intention to provide patient-centered care to patients with opioid addiction. This is a deviation from the traditional sole focus on the antecedents of behavior; however, context and time remain constant. A measure of intention or likelihood to provide patient-centered care to patients

with opioid addiction in the prehospital setting will accompany the measures of attitude

and self-efficacy. According to Ajzen (2006a; personal communication, April 5, 2017),

such an assessment is "sufficient" to measure and predict behavioral intention. The

second step includes a review of the relative contributions and correlation of variables

(predictors) for the target action in a specific context and time (Ajzen, 1991, 2006a, p. 2).

In step 3, results were used to identify areas in need of intervention (Ajzen, 2006a). Once

identified, evidence-based intervention methods for the specific behavioral target will be

selected. While step 3 was not a part of this research, it should be noted that the results of

this study will be used to inform the design of a future intervention. See Table 1 for a

review of the formative steps in developing an intervention based on the Theory of

Planned Behavior (TPB).

Table 1.

Formative Steps in Developing an Intervention Based on the Theory of Planned Behavior
(adapted from Ajzen, 2006a)

Step 1	Step 2	Step 3
Focus Group	Cross-Sectional Survey Study	Research
Elicit accessible (readily available and spontaneously come to mind) beliefs related to the target action, context, and time in order to determine which predictors will be assessed as a measure of behavioral intention.	Construct survey study questionnaire to directly measure intention via the predictors: attitudes, subjective norms, and perceived behavioral control.	Use data from research to identify relative significance and correlation among predictor variables to determine gaps in need of intervention. Research evidence-based intervention methods for the specific behavioral target.

Summary

This chapter reviewed the literature relevant to the study. Addiction is a medical disease that can be treated and managed. Its etiology varies depending upon the person and life circumstance. Current research highlights two causal pathways of the ongoing drug overdose epidemic: prescribed opioid use that transitions to illicit drug use, and ACE. Stigma related to drug use and abuse is a social determinant of health that generates health inequities for people experiencing opioid addiction and overdose. Patient centered is presented as a practice approach to prehospital patient care that disrupts stigma and facilitates rapport building between the patient and EMS provider. It's a trauma informed, CARE-ing approach that combines the core values and skills of motivational interviewing to support compassionate dialogues about addiction. The current research explores providers' attitudes toward opioid and opioid addiction, self-efficacy in patient-centered care, and their intention to provide said care to people with opioid addiction among EMS providers in the state of Maine. The review of the literature provides the necessary support and foundation for this resesarch. Chapter III next presents a detailed summary of the research design.

Chapter III

RESEARCH DESIGN

The critical rise in opiate-related deaths and associated medical emergencies as well as the challenge of getting more people to access treatment require immediate attention and intervention. These two factors provide the rationale for this research study at this crucial time. The review of the literature revealed that a patient-centered approach to providing care to people with opioid addiction is likely to increase motivation to seek treatment. The adoption of patient-centeredness as a performance indicator of the therapeutic communication competency within the National EMS Education Standards and required as state protocol will facilitate its use with patients in the prehospital setting. The development and cultivation of a patient-centered approach in the care of people experiencing OAO are direct interventions to prime motivation to seek addiction treatment. This intervention is one prong of a multifaceted community approach to closing the treatment gap and helping to mitigate the nation's opioid epidemic. Thus, the focus of this study was the measurement of EMS providers' behavioral intention to provide patient-centered care to people experiencing OAO. This study sought to predict behavioral intention via the direct measure of the providers' attitude and self-efficacy (Ajzen, 2006b). This chapter presents the study's research design, methods, measures, and data analysis plan.

A cross-sectional survey design was selected because it allows for the collection of data from the population of EMS providers, at one specific time and across the entire state of Maine. Surveys are frequently used to obtain information from a sample of individuals within a population about their socio-demographic characteristics, attitudes, and history (Creswell, 2014). A cross-sectional survey design also allowed for the examination of relationship(s) between socio-demographic factors and predictor variables, attitude, and self-efficacy (Creswell, 2014).

A cross-sectional survey study provided a snapshot of the socio-demographics (background factors) of the population (N = 6,593) of EMS providers in the state of Maine. Data were collected via the Qualtrics online survey development platform without any manipulation or change in respondents' natural environment. Thus, this study was a correlational study design with no intervention.

Location of Study

A cross-sectional survey study was conducted online via the state of Maine EMS email server. An email survey study enabled the survey to be sent to every EMS provider in the state of Maine. It also enabled data to be collected anonymously from EMS providers within each of the six EMS regions in the state of Maine.

Population and Sample

The sample was a convenience sample of EMS providers currently employed by municipal or private EMS services in the state of Maine. Providers were defined for the purpose of this study as including: Emergency Medical Responder (first responder), Emergency Medical Technician (EMT-Basic), Advanced Emergency Medical

Technician, and Paramedic. See Table 2 for the Emergency Medical Service Provider count of licenses by EMS region in the state of Maine. The survey was conducted using EMS providers' registered email addresses with Maine EMS (N = 6,593). A minimum survey response rate of N = 200 was desired for statistical confidence in the analysis of results. This response provides a confidence level of 95% (critical value, Z = 1.96), with a margin of error of +/- 5% and .05 standard deviation.

Table 2

Emergency Medical Service Provider—Percent of Licensed EMS Providers by Region in the State of Maine

EMS Region*	First Responder	EMT Basic	Advanced EMT	Paramedic	Percent (%)
Region 1	42	1771	407	444	40
Region 2	67	509	125	131	13
Region 3	22	454	96	148	11
Region 4	54	866	209	218	20
Region 5	10	172	49	92	5
Region 6	39	440	124	104	11
Percent (%)	4	64	15	17	100

*Region 1: Southern Maine; Region 2: Tri County; Region 3: Kennebec Valley; Region 4: Northeastern; Region 5: Aroostook; Region 6: Mid Coast

Source: State of Maine EMS, February 3, 2017

Protection of Human Subjects

Respondents were informed of the study purpose and assured that participation was voluntary; the researcher obtained their informed consent. Respondents who read the consent form freely, voluntarily chose to participate in the research study, and completed

the online survey were identified as having given informed consent. No identifying

information was collected in order to maintain respondents' privacy and confidentiality.

The survey responses were collected by the Qualtrics survey platform, exported to the

SPSS program, and stored in a password-protected file in a password-protected computer.

Only the researcher had access to the data collected.

Survey Instrument Design

The survey instrument was constructed using two separate yet overlapping

guidelines: (a) Ajzen's (2006a) framework or the development of an intervention based

on the Theory of Planned Behavior, and (b) Chatterji's (2003) established process model

for instrument design and evaluation (p. 106). The construction and delivery of the

survey instrument adhered to Dr. Chatterji's (2003) *Rules for Self-Report Measures*

(pp. 263-286). Adhering to these rules, framework, and model during the instrument

design process increased the final instrument's validity (American Educational Research

Association [AERA], American Psychological Association [APA], & National Council

on Measurement in Education [NCME], 2014, p. 11). This study used both content

validation and internal structure as evidence of validity (AERA, APA, & NCME, 2014).

Preliminary Study

Following Ajzen's (2006b) framework, an examination of EMS providers' salient

beliefs was elicited in a preliminary study to determine the relative importance of the

TPB variables (constructs) for inclusion in the final survey instrument. The goal was to

illuminate the unique internal and external factors influencing this population of EMS

providers in the context of providing patient-centered care to people experiencing OAO.

Following Ajzen's (2006b) framework, the researcher conducted a preliminary study to obtain the salient beliefs influencing attitudes, subjective norms, and perceived control, and developed an eight-item, open-ended Belief Survey (BS). See Appendix G for a review of the preliminary study.

Preliminary study findings, literature review, and the TPB were used to identify the constructs (dependent variables) of attitude and self-efficacy measured in this research. The BS, literature review, and the TPB were also used in the selection of appropriate psychometrically validated instruments for inclusion in the statewide TPB-based instrument to measure EMS providers' behavioral intention to give patient-centered care to people with opioid addiction in the state of Maine. The selection of instruments and their subscales were content-validated by experts in the focus group.

Study Variables

The study variables included the demographic characteristics of the respondents: gender, age, ethnicity, educational attainment, license level, service region, service type, and years of experience. These represented external (background) factors influencing respondent attitudes and perceived behavioral control or self-efficacy. EMS providers' attitudes toward opioids and opioid addiction, and EMS providers' self-efficacy in patient-centered care represented internal (predictors) factors influencing both intention and behavior to provide patient-centered care to patients experiencing OAO (Ajzen, 1991). See Figure 3 for a summary of the TPB internal and background factors represented as by the DDPPQ-M, and SEPCQ-27 factors (predictor variables).
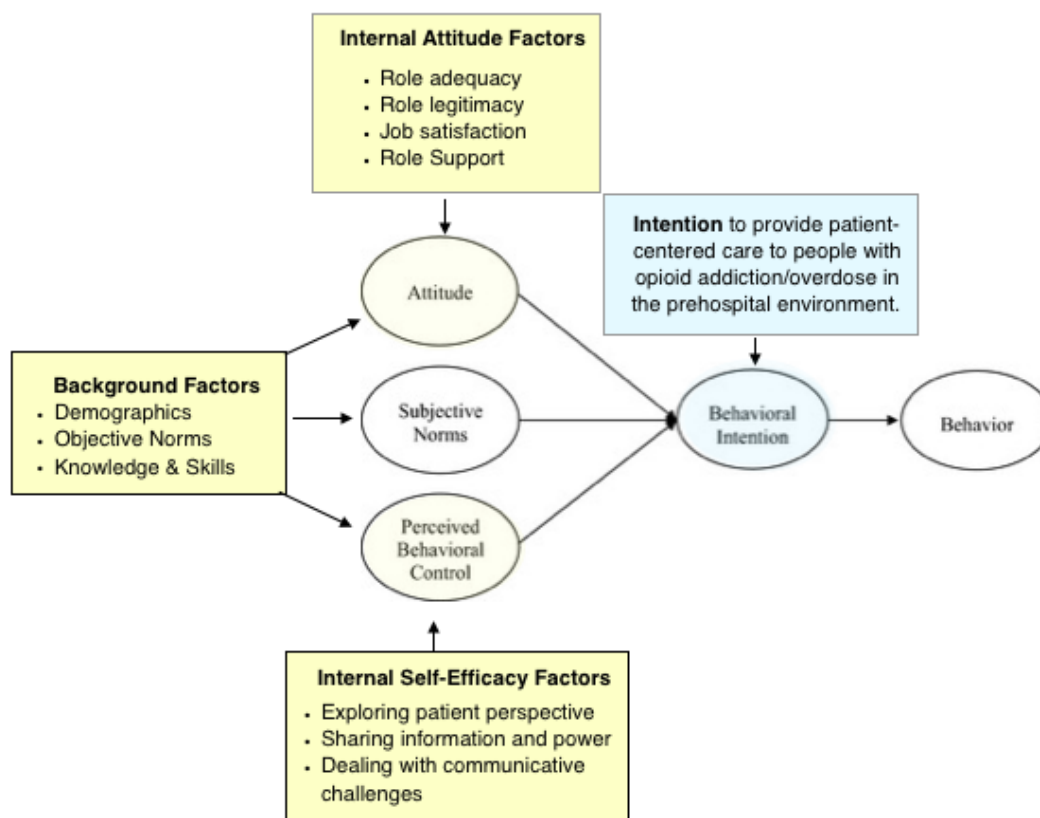
Figure 3. Theory of Planned Behavior: Internal and External Factors
(Ajzen, 1991; Watson et al., 2006; Zachariae et al., 2015)

Attitude

Strongly held attitudes were identified as a significant predictor of "the extent to which knowledge is accepted and used [behavior] in practice" (Watson et al., 2003, p. 4; also see Krosnick & Abelson, 1992). Thus, the magnitude of respondents' attitude toward opioids and opioid addiction influences behavioral intention to provide patient-centered care to people experiencing OAO. This provided the rationale for selecting an instrument to measure attitude toward opioids and opioid addiction in isolation from a measure of attitude toward providing patient-centered care to patients experiencing OAO. Social conditioning fuels attitudes about opioids and opioid addiction that influence intention to

provide patient-centered care. The Drug and Drug Problem Perceptions Questionnaire

(DDPPQ) was used to measure EMS provider attitudes. See Table 3 in the next section

for a description of the three DDPPQ subscales and definitions. The variables were coded

on a 7-point, ordinal Likert scale ranging from (1) "strongly agree" to (7) to "strongly

disagree" as endpoints. The midpoint score of 4 represents a neutral score "neither agree

nor disagree." The ordinal scale allowed for an assessment of the magnitude of

respondents' agreement or disagreement with items. Means of subscales were used as the

independent variables. An examination of the magnitude of EMS providers' attitudes

toward opioids and opioid addiction was needed to identify areas in need of intervention.

Self-Efficacy

The construct self-efficacy is a measure of perceived capability (Bandura, 2006).

It was used in this study as a measure of perceived behavioral control. Perceived self-

efficacy is "a determinant of intention and a judgment of capability...to execute given

types of performances" (p. 309). Perceived efficacy "affects behavior not only directly,

but by its impact on...goals and aspirations, outcome expectations, affective proclivities,

and perception of impediments and opportunities in the social environment" (p. 309).

Bandura recommended that perceived self-efficacy assessments "be linked to the

behavioral factors over which people can exercise some control" (p. 309). For example,

this would include perceived capability to "show a genuine interest in the patient and

his/her situation" (Zachariae et al., 2015, p. 5). Moreover, "behavior is predicted by

people's beliefs in their capabilities to do whatever is needed to succeed" (Bandura,

2006, p. 310). Patient-centeredness self-efficacy is defined as a provider's "confidence in

his or her ability to exert each particular behavior in a manner so that the patient would perceive it according to its underlying intention" (Zachariae et al., 2015, p. 3).

The standard methodology for measuring self-efficacy beliefs is by "portraying different levels of task demands, and they rate the strength of their belief in their ability to execute the requisite activities" (Bandura, 2006, p. 310). Self-efficacy scale measures include both an affirmation (positive or negative) of a capability level and the strength (ordinal scale) of that belief (p. 310). See Table 4 in the next section for a description of the three SEPCQ-27 subscales and definitions. The variables were coded on a 5-point, ordinal Likert scale ranging from (1) "to a very low degree" to (5) "to a very high degree" as endpoints (Likert, 1932). The midpoint score of 3 was anchored and represented a neutral score "neither confident nor not confident." Means of subscales were used in the analysis of study variables.

Instrumentation

Drug and Drug Problem Perception Questionnaire

The review of the literature, guided by the research questions, suggested that the 20-item Drug and Drug Problem Perception Questionnaire (DDPPQ) is "a concise, coherent, valid, and reliable instrument" for the assessment of attitudes (Watson et al., 2006, p. 214). The DDPPQ was developed "to measure attitudes of mental health professional to working with drug users" (p. 207). The DDPPQ is an adaptation of the Alcohol and Alcohol Problem Perceptions Questionnaire (AAPPQ) (Watson et al., 2006). During the adaptation process, Watson et al. (2006) replaced the terms *alcohol* with

drugs and *drinkers* with *drug users* to ensure that the format of the DDPPQ was retained.

The DDPPQ is a 20-item instrument using a 7-point Likert-type scale ranging from

(1) "strongly agree" to (7) "strongly disagree" as endpoints. The middle score 4 was

anchored with "Neither agree nor disagree." Low scores denote positive attitudes,

whereas high scores are associated with negative attitudes (Watson et al., 2006). The

DDPPQ has five subscales: "role adequacy" (component one; $\alpha = .94$; seven items), "role

support" (component two; $\alpha = .78$; three items), "job satisfaction" (component three;

$\alpha = .80$; four items), "self-esteem" (component four; $\alpha = .69$; four items), and "role

legitimacy" (component five; $\alpha = .89$; two items) (p. 211). The alpha coefficient for the

entire 20-item instrument is 0.87 (p. 211). Cronbach's alpha is an estimate of the

reliability of a psychometric test. An alpha coefficient of $\alpha = 0.70$ or higher (obtained on

a substantial sample) is the recommended cutoff for instrument use in social science

research (Chatterji, 2013). Thus, component four, "self-esteem," was omitted from this

study because of its low alpha coefficient. Furthermore, self-efficacy was measured by

the SEPCQ-27. See Table 3 for a description of the modified Drug and Drug Problem

Perceptions Questionnaire (DDPPQ-M) four dimensions and operational definitions. The

internal consistency of the four domains of the DDPPQ-M was conducted using

Cronbach's alpha to establish reliability (consistency) of the final data set. This analysis

confirmed that the DDPPQ-M effectively measures attitudes toward providing patient-

centered care to people experiencing OAO (context) among a sample of EMS providers

in the state of Maine (population).

Table 3

Description of DDPPQ-M Dimensions (Watson et al., 2006, p. 207)

Internal and External Dimensions	Definition
Role adequacy	Refers to the belief that people feel adequately prepared for the role and view themselves as having appropriate knowledge.
Role support	Relates to the support which people acknowledge receiving from colleagues to help them perform their role effectively.
Job satisfaction	Refers to the belief that work is rewarding and the person feels a sense of satisfaction from that work.
Role legitimacy	Refers to the extent to which people regard particular aspects of their work as being their responsibility.

The DDPPQ was chosen for this study because the instrument measures attitudes toward working with individuals who have drug addiction, and not just attitudes toward drugs and individuals with drug problems in general. This distinction is important because the target population, EMS providers in the state of Maine, provide direct, emergent, and non-emergent medical care and transport of patients with opioid addiction. The instrument was used to elicit EMS providers' attitudes toward providing care to people with opioid addiction. Another reason the DDPPQ was chosen for this study is because of its extensive psychometric validation documented by Watson et al. (2006). The adapted DDPPQ concisely measures attitudes in a brief 16-item instrument that is ideal for inclusion and administration within an online survey study.

The researcher retained the format of the instrument, but changed the wording such that the term *client* was substituted by *patient* and *drug* by *opioid.* For the purpose of this study, the DDPPQ expressed on an ordinal 7-point Likert scale ranging from

(1) "strongly agree" to (7) "strongly disagree" (Likert, 1932) was maintained. This enabled a comparison of the scale's internal consistency measures (Cronbach's alpha) with a population of EMS providers in the state of Maine. Permission to adapt the validated version of the DDPPQ to this study was granted by the copyright holders, John Wiley & Sons in England (Personal communication, January 27, 2017).

Self-Efficacy in Patient-Centeredness Questionnaire-27

The review of the literature, guided by the research questions, suggested that the Self-Efficacy in Patient-Centeredness Questionnaire-27 (SEPCQ-27) is a valuable measure of patient-centeredness (Zachariae et al., 2015, p. 1). It is a concise, valid, and reliable instrument for the assessment of EMS providers' self-efficacy in patient-centeredness. The SEPCQ-27 was developed to assess medical student and physician self-efficacy in patient-centeredness. "Patient-centered communication is a core competency in modern healthcare and is associated with high levels of patient satisfaction, improved health outcomes" (p. 1). The SEPCQ-27 is a 27-item instrument using a 5-point Likert-type scale ranging from (0) "to a very low degree" to (4) "to a very high degree." Patient-centeredness self-efficacy is defined as a provider's perceived ability to exert patient-centered behaviors. Items were worded as "I am confident that I am able to be attentive and responsive" (p. 4). Respondents' self-efficacy in exhibiting each particular patient-centered behavior was based on sum scores (0-108) within each category (Zachariae et al., 2015).

Low scores denoted low self-efficacy, whereas high scores were associated with higher self-efficacy (Zachariae et al., 2015, p. 6). The SEPCQ-27 has three subscales: "exploring the patient perspective" (component one; $\alpha = .93$; 10 items); "sharing

information and power" (component 2; α = .92; 10 items); and "dealing with

communicative challenges" (component 3; α = .83; 7 items) (p. 9). The alpha coefficient

for the entire 27-item instrument was 0.94 (p. 9). Cronbach's alpha is an estimate of the

reliability of a psychometric test. See Table 4 for a description of the three SEPCQ-27

dimensions and operational definitions.

Table 4

Description of SEPCQ-27 Dimensions (Zachariae et al., 2015, p. 3)

Dimensions	Definition
Exploring patient perspective	Consider patient needs, wants, perspectives, and individual experiences.
Sharing information and power	Establish shared understanding of the medical condition, exam, and treatment; share power and offer patients opportunities to provide input into and meaningful involvement in their care.
Dealing with communicative challenges	Enhance patient-provider relationship by focusing on compassion, empathy, awareness and reflection, and shared power.

The SEPCQ-27 was chosen for this study because the instrument measures

providers' confidence in exhibiting core communicative behaviors that demonstrate

patient-centered care (Zachariae et al., 2015, p. 2). This is important because the target

population, EMS providers in the state of Maine, frequently provide emergent and non-

emergency medical care and transport of patients with opioid addiction. EMS providers'

patient-centered communication influences the health outcomes (p. 2). The SEPCQ-27

was chosen for this study because of its previous psychometric validation with medical

providers (Zachariae et al., 2015). The SEPCQ-27 concisely measures self-efficacy in

exhibiting core aspects of patient-centered behaviors in a brief 27-item instrument that is ideal for administration within an online survey study.

The format of the instrument was retained, but the wording was changed such that the term *physician* was substituted by *provider*. Permission to adapt the validated version of the SEPCQ-27 to this study was granted by the copyright holders, Aarhus University Hospital and Department of Psychology (Personal communication, January 9, 2017). For the purpose of this study, the SEPCQ-27's ordinal 5-point Likert scale ranging from (0) "to a very low degree" to (4) "to a very high degree" as endpoints was retained. This enabled a comparison of the subscale internal consistencies (Cronbach's alpha) with the population of EMS providers in the state of Maine.

TPB Intention Questionnaire

The TPB Intention Questionnaire utilized the SEPCQ-27 scale items and subscales but asked respondents about their intent rather than confidence. These items conform to the principle of compatibility, meaning behavioral criteria of action, context, and time (Ajzen, 2006b). The survey scale asked respondents to rate the degree to which they intend to perform the survey items that measure patient-centered care (action) behaviors with patients experiencing opioid addiction/overdose (context) in the prehospital setting (time). Most TPB instruments use a 7-point bipolar adjective scale (e.g., unlikely, likely) (Ajzen, 2006a). However, "it is at the investigator's discretion to use fewer or more scale points" (Ajzen, 2006b, p. n.p.). This questionnaire used the matching numeric scale (0, extremely unlikely to 4, extremely likely) that was used in the SEPCQ-27 instrument. Note this is a "semantic differential" and not a Likert scale (Ajzen, 2006b).

Procedures

IRB Approval

The Institutional Review Board (IRB) of Teachers College, Columbia University

provided approval for the study as protocol #17-308 under the category exempt review on

May 5, 2017. No study activities occurred with subject participants before IRB approval.

See Appendix F for the IRB approval letter.

Recruitment of Study Participants

Subjects were recruited using the Maine EMS email system that embedded a link

to the Qualtrics survey. The link invited EMS providers to participate in the online survey

(see Appendix J for Recruitment Email). Participants had 4 weeks to complete the

questionnaire. At the end of 2 weeks, a second invitation was sent via email through the

Maine EMS email system to encourage people to complete the survey. A minimum

survey response of $n = 200$ from a sample of $N = 6,593$ licensed EMS providers was

desired. Respondents were not remunerated for their participation.

Inclusion Criteria

The cross-sectional survey study included the inclusion criteria of being a

licensed emergency medical provider in the state of Maine. See Appendix I for inclusion

criteria.

Online Survey Construction

The online survey was developed using the online Qualtrics survey platform. The

survey included instructions, informed consent, inclusion criteria, participant

demographics and background, the 20-item DDPPQ, the 27-item SEPCQ-27, and the 20-item Intention Questionnaire.

Data Analysis

Data were exported from the Qualtrics online platform and imported to the IBM Statistical Package for the Social Sciences (SPSS) statistics v. 23.0 for analysis. Data were screened for any discrepancies.

Pre-analysis

Pre-analysis of data included a comparison of the sample based upon percent of respondents by license level, service region, and gender to determine the representativeness (similarities and differences) between the sample and the population. These three identifiers (categorical variables) or indicators of representativeness were selected in order to assure the anonymity of the respondents. In some service regions, only one provider represented a specific ethnic origin for a specific license level. If additional descriptors were used in the sample-to-population comparison, individual EMS providers may be identified. Additional population identifiers were not available from Maine EMS. Chi-square was used to make comparisons between the sample and population data provided by Maine EMS in order to establish sample representativeness and/or acknowledge any discrepancies between the sample and the population.

Sample Description

Descriptive statistics, consisting of numerical and graphical techniques for data summarization, were performed and used to analyze frequency of data distributions on the categorical socio-demographic variables.

Subscale Means and Total Score Intention

In accordance with instructions for the DDPPQ, participants' ratings for all statements were scored such that a low numeric score on any statement indicates a positive attitude, and a high numeric score indicates a negative attitude. A numeric value for the primary variable, the respondent's overall attitude, was calculated from the Likert-scale scores on the DDPPQ. The subscale mean score were reverse re-coded so that low scores denote a negative attitude and high scores denote a positive attitude. The re-coded DDPPQ subscales enabled a parallel interpretation of all the predictor variables. In accordance with the instructions for the SEPCQ-27, participants' ratings for all statements were scored such that low scores indicated low self-efficacy and high scores reflected high self-efficacy (Zachariae et al., 2015, p. 2). As previously stated, the mean of subscales was used as the independent variables in both the DDPPQ and the SEPCQ-27. A Total Score (sum) of Intention was computed from all Intention Scale items. The total Score Intention was analyzed as the outcome (dependent) variable.

Internal Reliability

Internal consistency analyses were run for each subscale and the overall instrument (DDPPQ, SEPCQ-27, and Intention). These internal consistencies were compared with previous literature and research using the DDPPQ and SEPCQ-27. Internal reliability analysis was run on the Intention Scale. The same SEPCQ-27 items were used in the Intention Scale and thus the Total (sum) score of the scale was used for comparison. Cronbach's alpha measure of 0.70 or greater was the statistical cutoff for reliability.

Measure of Association

ANOVA (assuming normal distribution) were run to determine if there were any differences across levels of demographics variables (e.g., license level and EMS region) for the predictor variables (attitude and self-efficacy). Post-hoc tests were run to identify where the significant differences occurred among the variables. Effect sizes (using eta-squared) were computed to determine the strength and direction of relationships among variables. Results were considered significant if the p value was less than 0.05 and the effect size was greater than 0.02 (Tabachnick & Fidell, 2014).

Multiple regression analyses were used to analyze relationships among the attitude (DDPPQ), self-efficacy (SEPCQ-27) predictor variables, and the Intention outcome variable. This analysis provided insight into the relative strength and contribution of variables to that relationship and explained variance. Multiple regression enabled the researcher to determine the extent to which intention to provide patient-centered care to patients experiencing OAO in the prehospital setting can be predicted based on providers' attitude toward opioids and opioid addiction and/or their self-efficacy in patient-centered care (Tabachnick & Fidell, 2014).

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Summary

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This chapter reviewed the research design, methods, measures, and data analysis plan that were used to measure EMS providers' behavioral intention to provide patient-centered care to people experiencing OAO. A review of the study's strengths and limitations was also presented. The next chapter, IV, provides a detailed review of the data and analysis.

Chapter IV

RESULTS

This chapter presents a description of the sample and its responses to the survey of EMS providers in the state of Maine. This chapter includes sample characteristics, quantitative results, and overall findings of the current study. Data summaries are presented in tables. The purpose of this study was to investigate six research questions:

1. What are the demographic characteristics of the sample population and is it representative of the population of EMS providers in the state of Maine?

2. What types of attitudes do Emergency Medical Service (EMS) providers in the sample hold regarding OAO?

3. What levels of self-efficacy in patient-centered care do EMS providers in the sample self-report?

4. What is the intention of EMS providers in the sample to provide patient-centered care to people experiencing OAO?

5. Can demographic factors predict EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care?

6. Are EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care are related to intention to provide patient-centered care to people experiencing OAO?

The Theory of Planned Behavior (TPB) provided the theoretical foundation for analyses and assumptions. Multiple regression analyses were used to develop a statistical model that accurately estimates potential relationships and test hypotheses.

Preliminary analyses included both diagnostic visual and statistical inspection of the raw data for missing data, outliers, and the assumption of normality. Additional preliminary analysis of the data inspected scale reliability, sample representativeness, and post-hoc power analysis. Data analyses were categorized into six sections reflecting each of the research questions. The first describes the demographic characteristics of the sample. These represent background factors in the TPB that influenced attitude and self-efficacy (see Figure 3 in Chapter III for a summary of the background, predictor, and outcome variables as represented by the TPB). The second section describes the types of attitudes (predictor variable) held by EMS providers towards opioids and opioid addiction. In section three, EMS providers' level of self-efficacy (predictor variable) in PCC is explored. Section four describes the findings of EMS providers' behavioral intention (outcome variable) to provide PCC to people experiencing OAO. Section five contains the analysis of the ability of socio-demographic variables to predict EMS providers' attitude and self-efficacy. Section six contains the multiple regression analysis and subsequent relationships among attitude and self-efficacy to behavioral intention.

Sample Description

The sampling procedure described in Chapter III yielded a total of 1,069 survey responses meeting the inclusion criteria. Of this number, 765 cases surveys were

completed. This is equivalent to a response rate of 11.6% out of the 6,593 email

invitations that were sent via the state of Maine Emergency Medical Services (MEMS).

This response rate is consistent with previous email surveys conducted by MEMS in the

past. The data set was reduced to n = 739 after data cleaning. Twenty-six cases were

determined to be outliers within the data set and removed prior to analysis. The large

sample size (n = 739) provided statistical rigor for the analysis of relationships among the

variables and predictions regarding the population of EMS providers in the state of

Maine.

Descriptive statistics were computed for the sample demographics in order to

describe the sample of EMS providers in the state of Maine. The descriptive statistics

reported were mean, standard deviation, and range for each variable. The majority of

respondents in this study were males (59.7%) from the Southern Maine service region

(41.1%). These percentages were consistent with the population of EMS providers.

Paramedics (41.4%) and EMT-Basics (35.5%) represented the largest percentage of

respondents in the sample. See Tables 5 and 6 for these demographic characteristics in

the sample and population. Consistently, EMT-Basics and Paramedics represented the

largest percent of respondents in all service EMS regions. Table 5 shows the frequency of

EMS provider license level by service region.

The sample was 98.5% White (Caucasian). This is slightly higher than the

population of the state of Maine (94.8%) (U.S. Census Bureau, 2016). Roughly half of

the respondents spanned the 35-44 (21.9%) and 45-54 (21.8%) age groups. Most

providers held either a high school diploma (33.3%) or an associate's degree (33.3%),

while a smaller proportion had earned a bachelor's (24%) or postgraduate degree (9.6%).

The vast majority of respondents were non-leadership, EMS providers (72.5%).

Table 5

Demographic Characteristics—Service Region, License Level, and Gender (n = 739)

Variable	Category	Frequency	Percent (%)
EMS Region	Southern Maine - Region 1	304	41.1
	Tri County - Region 2	96	13.0
	Kennebec Valley - Region 3	86	11.6
	Northeastern Maine - Region 4	140	18.9
	Aroostook - Region 5	32	4.3
	Mid Coast - Region 6	81	11.0
EMS License Level	First Responder	22	3
	EMT Basic	262	35.5
	Advanced EMT	149	20.2
	Paramedic	306	41.4
Gender	Female	217	29.4
	Male	516	69.8
	Unknown	6	0.8

Table 6

Demographic Characteristics of the Sample Population (n = 739)

Variable	Category	Frequency	Percent (%)
Age	18-24	50	6.8
	25-34	140	18.9
	35-44	162	21.9
	45-54	207	28.0
	55-64	131	17.7
	65-74	47	6.4
	75-84	2	0.3
Ethnicity	Native Hawaiian/Other Pacific Islander	5	0.7
	American Indian/Alaskan Native	2	0.3
	Black/African American	1	0.1
	Hispanic/Latino	3	0.4
	White/Caucasian	728	98.5
EMS Position	Member or provider	536	72.5
	Managing EMS officer	203	27.5
Years of Service	0-10	226	36.0
	11-20	235	31.8
	21-30	153	20.7
	31-40	71	9.6
	41-50	14	1.9
Education	High school/GED	244	33.0
	Associate degree	247	33.4
	Bachelor degree	177	24.0
	Master degree	59	8.0
	Doctorate	12	1.6

An examination of respondents' gender and service role (provider and managing EMS officer) revealed that the proportion of females in a leadership role was 20.7% of the leadership role, while the proportion of males in a leadership role was 78.3% of the leadership roles. See Tables 5 and 6 for a summary of socio-demographic characteristics of the sample population. The vast majority of EMS providers in the sample population ranged in age between 25 and 54 years. Both male (29.8%) and female (24%) respondents, ages 45-54, had the largest proportion of respondents for their gender. The smallest proportion was reflected by those identified as "unknown" and spanning 25 and 64 years of age. The smallest proportion of age by gender consistently spanned the 18-24, 65-74, and 75-84 age ranges.

EMS Providers with 0-10 years of service represented 36% of the sample. Of those with 0-10 years of service, the proportion of EMS providers in a non-leadership role was 43.4%, and the proportion of providers in a managing role was 16.3%. The proportion of respondents with 11-20 years of service was 31.8%, and the proportion of providers with 21-30 years of service was 20.7%. These two age groups held 65.5% of managing EMS officer service roles. See Table 7 for the proportion of providers by years of service and service role. Those in managing roles were more likely to hold a high school diploma (or GED) (37.9%) than they were to have a graduate-level degree such as master (7.4%) or doctorate (2%) degrees. Those in the provider role (non-leadership) were more likely to have a high school diploma (or GED) (31.2%) or an associate degree (34.7%).

Table 7

Proportion of Service Role by Gender, Years of Service, and Education (n = 739)

Demographic Variable	Level	Provider percent (%)	Managing Percent (%)
Gender	Female	32.6	20.7
	Male	66.6	78.3
	Unknown	.7	1
Years of Service	0-10	43.5	16.3
	11-20	31.2	33.5
	21-30	16.4	32
	31-40	7.8	14.3
	41-50	1.1	1.9
Education	HS Diploma/GED	31.2	37.9
	Associate	34.7	30
	Bachelor	24.4	22.7
	Master	8.2	7.4
	Doctorate	1.5	2

Several hundred respondents (n = 529; 71.6%) reported that they were cross-trained in another public safety profession. Those cross-trained as firefighters (62.7%) were well represented in this sample. Table 8 shows the additional public safety roles in which respondents were cross-trained. Mean scores for Intention were highest among those who reported cross-training in community paramedicine (M = 112.68; SD = 15.576). Unpaired *t*-test (p = .05) comparing the mean scores of respondents who

reported levels of cross-training with those reporting no cross-training levels are shown in

Table 8. Respondents reporting no cross-training had the highest mean Intention score.

While 28% of the respondents reported no cross-training, those reporting cross-training

were trained in at least one other public safety discipline (55.9%) or more (15.7%).

Table 8

Demographic Characteristics of the Sample—Cross-trained in Another Public Safety Profession (n = 529; 71.6%).

Variable	Category	Frequency	Percent (%)
Cross-trained*	Community Paramedic	53	5.9
	Communications	74	8.3
	Firefighter	463	51.8
	Law Enforcement	75	8.4
	Corrections	17	1.9
	Not Applicable	212	23.7

*Some respondents reported multiple cross-training experience.

Representativeness of the Sample

Three characteristics of the sample and population were used to determine the

representativeness of the sample: service region, license level, and gender. Table 9

identifies the frequency and percent of respondents (n = 739) by service region and

license level. Table 9 provides an analysis of the representativeness of the sample to the

population of EMS providers in the state of Maine. The respondents were primarily from

the Southern Maine service region (41.1%), which is consistent with the population

(40%) data provided by MEMS. A Chi-Square goodness-of-fit test indicated that there

were no significant differences in the proportion of respondents in each of the service

regions, as compared to the population of EMS providers in the state of Maine

χ^2 (5, n = 739) = 1.365, p = .928. Thirty-five percent of the sample population were

licensed EMT basics, denoting a lower response from the population of EMT basics

(35.5%) in the state. Forty-one and nine-tenth percent of the sample were paramedics,

denoting a higher response from the population of paramedics (17%) in the state. The

sample of first responders (3%) and Advanced EMTs (20.2%) accurately reflected the

population (4% and 15%, respectively). A Chi-Square goodness-of-fit test indicated that

there was a significant difference in the proportion of each license level identified in

the sample, as compared to the population of EMS providers in the state of Maine

χ^2 (3, n = 739) = 384, p = .0001. This difference is due to the lower than expected

response from EMT Basics and the larger than expected response from Paramedics.

Table 9 compares the gender of the sample to the population. Males represented the

majority of both the sample (69.8%) and actual population (59.7%) of EMS providers in

the state of Maine. The percentage of females in the sample (29.4%) accurately

represented the population (25.4%). A smaller percentage of "unknown" gender was

represented in the sample (0.8%), as compared to the population (14.9%). A Chi-Square

goodness-of-fit test indicated that there was a significant difference in the proportion of

respondents' gender present in the sample, as compared to the population of EMS

providers in the state of Maine χ^2 (2, n = 739) = 120, p = .0001. This difference was due

to a less than expected response from those providers identifying gender as "unknown."

The percentage of males and females represented in the sample was closely related to the

population (Table 9). Overall, the sample was a good representation of the population of

EMS providers in the state of Maine based upon service region, license level, and gender.

Table 9

Demographic Characteristics—Percentage of EMS Providers by Service Region,
License Level, and Gender (n = 739)

Variable	Category	Sample percent (%) (n = 739)	Population percent (%) (N = 6593)
Service Region	Southern Maine	41.1	40
	Tri County	13.0	13
	Kennebec Valley	11.6	11
	Northeastern	18.9	20
	Aroostook	4.3	5
	Mid coast	11	11
License Level	First Responder	3	4
	EMT Basic	35.5	64
	Advanced EMT	20.2	15
	Paramedic	41.4	17
Gender	Male	69.8	59.7
	Female	29.4	25.4
	Unknown	0.8	14.9

The descriptive statistics provided offer a complete description of the sample

population and answer to Research Question 1 which stated, "What are the demographic

characteristics of the sample population and is it representative of the population of EMS

providers in the state of Maine?" The representativeness of this sample supported the

statistical interpretation of results to predict the behavioral intention of EMS providers in

the state of Maine.

Preliminary Analysis

As stated, a total of 765 currently licensed EMS providers completed the online survey. Twenty-six of these cases were identified as outliers, via statistical diagnostic analysis, resulting in a sample of n = 739. Screening for missing data was conducted using frequencies of all items within the data file. There were no missing data or out-of-range values among the cases. Original data stored in Qualtrics were compared to the exported data fields in SPSS. No data were transferred incorrectly. In order to assess scale reliability and run diagnostic regression analyses, the mean and sum values for each subscale were computed as the predictor (independent) variables. A total score (sum) of Intention was computed for the outcome (dependent) variable. A random sampling of mean subscale values and sum total values were evaluated for accuracy in computation. No errors were identified in the computational sampling of predictor and outcome variables.

Reliability of Scales

An examination of the reliability of the scales used in this study was performed using Cronbach's coefficient alpha. Table 10 provides a comparison of the reliability measures for each of the three scales. Cronbach's alpha scores provided by the developers of each scale were used as a baseline for comparison. Each of the computed alpha scores for the scales used in this study exceeded the acceptable measure ($\alpha = 0.70$) reliability (Chatterji, 2003). Thus, the items in each of the scales effectively and consistently measured the underlying construct(s) of the scale. The Intention scale asked respondents what is the likelihood of performing the behaviors identified in the

SEPCQ-27 items. The overall scale alpha score for the SEPCQ-27 was used as a baseline comparison for the Intention alpha score. Cronbach's alpha scores in this study were similar to the alpha scores derived by the scale developers, thus supporting their use with this population of EMS providers.

Table 10

Reliability Measures of the DDPPQ, SEPCQ-27, and Intention Scales

Scale	Subscale	Original Instrument (α)	Current Study (α)
DDPPQ			
all combined		.87	.886
	Role Adequacy	.94	.881
	Role Support	.78	.885
	Job Satisfaction	.80	.788
	Role Legitimacy	.89	.790
SEPCQ-27			
all combined		.94	.965
	Exploring the patient perspective	.93	.937
	Sharing information and power	.92	.939
	Dealing with communicative challenges	.83	.840
INTENTION			
all combined			.969

Power Analysis

The conventional alpha level of 0.05 was used to reduce the likelihood of a Type I error. A Post hoc Power analysis (1-β err prob) was computed using G*Power Version 3.1.9.3 (Pallant, 2016). The Power (1-β err prob) of the test is 0.95 (df 4, n=739, α = 0.05). This result exceeded the 0.80 recommended threshold for significant statistical

power (Cohen, 1988; Pallant, 2016, p. 210). These results confirmed that the large sample size (n = 739) provided substantial statistical strength and increased precision in identifying relationships, thus reducing the likelihood of a Type II error.

Data Analysis

Research Question 1

Descriptive statistics were computed for the demographics and reported as mean, standard deviation, and range for each variable. These were presented as part of the sample description and representativeness as a way of introducing the research participants and frame the analysis and results presented in this chapter.

Research Question 2

Descriptive statistics were used to assess EMS providers' attitudes toward opioids and opioid addiction. The DDPPQ mean score subscale was used for analyses. Mean, standard deviation, and range were calculated for each of the four subscales to determine EMS providers' attitudes toward opioids and opioid addiction. See Table 11 for a summary of the descriptive statistics for the DDPPQ subscales. All of the DDPPQ subscale score ranged from 2-7 and had mean scores above the neutral response on the 7-point Likert-type scale. The results indicated a negatively skewed distribution of scores, with scores tending toward the higher (positive attitude) end of the scale. Highest scores (7) denoted strong, positive attitudes toward opioids and opioid addiction. Thus, negative skewed scores indicated that the sample had positive attitudes toward opioids and opioid addiction.

Examination of the individual subscales showed mostly positive attitude mean scores. The subscale "role legitimacy" had the most positive (M = 5.92, SD 1.01) mean score, lying between the "somewhat agree" (5) and "agree" (6) Likert scale identifiers. The subscale "job satisfaction" indicated a more neutral, "neither agree nor disagree" (4) score (M = 4.54, SD 1.16), as compared to the other positively scored subscales. Item 14, "*In general one can get satisfaction from working with opiate drug users*" (M = 3.76, SD = 1.532) had the lowest mean score of all the questions in the job satisfaction subscale. This was also the lowest mean score of all items in the DDPPQ scale. See Appendix L for a summary of the descriptive statistics for each DDPPQ scale item. This indicated a "disagree" value on the Likert scale and a negatively held attitude score or lack of satisfaction in working with opiate drug users. While the subscale "role adequacy" had a positive, mean score denoting a positive attitude, item 6 ("*I know how to counsel opiate drug users over the long term*") had a negative or "disagree" mean score (M = 3.72, SD = 1.864). This was in contrast to the highest scoring item (1) in the subscale "*I have a working knowledge of opiate drugs and opiate related drug problems*" (M = 6.23, SD = .874). This was also the highest mean score of all items in the DDPPQ scale. Additional items with mean scores of "agree" (6) in descending order by mean score were:

3. *I know enough about the physical effects of opiate drug use to carry out my role when working with opiate drug users* [role adequacy] (M = 6.16, SD = .933).

2. *I know enough about the causes of opiate drug problems to carry out my role when working with opiate users* [role adequacy] (M = 6.09, SD = .874).

8. *I have the right to ask patients questions about their opiate drug use when necessary* [role legitimacy] (M = 6.05, SD = 1.043).

Table 11

Descriptive Statistics of Predictor Variables (n = 739)

Scale	Subscale	Mean	SD	Range
DDPPQ	Total score	85.66	12.608	84
	Role adequacy	5.61	0.91	6
	Role support	5.46	1.28	6
	Job satisfaction	4.54	1.16	6
	Role legitimacy	5.92	1.01	6
SEPCQ-27	Total Score	118.24	14.339	68
	Exploring patient perspective	4.47	5.36	3
	Sharing information and power	4.37	.618	4
	Dealing with communicative challenges	4.27	.558	3

Research Question 3

Descriptive statistics were used to assess EMS providers' self-efficacy in patient-centered care. The SEPCQ-27 mean score subscales were used for analyses. Mean, standard deviation, and range were calculated for each of the three subscales to determine EMS providers' self-efficacy in patient-centered care. See Table 11 for a summary of the descriptive statistics for the SEPCQ-27 subscales. All of the subscales had mean scores above the neutral response on the 5-point Likert-type scale. This indicated a negatively skewed distribution of scores with scored tending toward the higher end of the scale. Highest scores (5) denoted confidence or "very high" self-efficacy in patient-centered

care. Thus, negatively skewed scores indicated that the sample had confidence in performing the behaviors described in the scale items. The subscale "exploring patient perspective" had a range from 2 to 5 on the Likert-type scale. "Exploring patient perspective" had the highest (M = 4.47, SD = 5.36) mean score of the subscales, lying between the "somewhat high" (4) and "very high" (5) confidence Likert identifiers. Item 14, "Treat the patient in a caring manner" (M = 4.66, SD = .564), had the highest mean score of the "exploring patient perspective" subscale. Item 14 also ranked the highest among the mean scores for items within the SEPCQ-27 scale. The subscales "dealing with communicative challenges" (M = 4.27, SD = 1.16) and "sharing information and power" (M = 4.36, SD = .68) also indicated high confidence mean scores. Item 3, "accept when there is no longer curative treatment for the patient" (M = 3.93, SD = .976), had the lowest mean score of all the items in the SEPCQ-27 scale. This item was part of the "dealing with communicative challenges" subscale. This mean score reflected a neutral score of "neither high nor low" mean score of all the questions in the job satisfaction subscale. See Appendix K for a summary of the descriptive statistics for each SEPCQ-27 scale items.

Research Question 4

EMS providers' intention to provide patient-centered care to people experiencing OAO was assessed with descriptive analyses of the Intention subscales. The Intention items asked respondents "what is the likelihood" that they would perform a specific aspect of patient-centered care with people experiencing OAO. This scale was comprised of the same items and subscales found in the SEPCQ-27 scale. Mean, standard deviation, and range were calculated for each of the three subscales to determine EMS providers'

intention to provide patient-centered care to people experiencing OAO. See Appendix L

for a summary of the descriptive statistics for each of the Intention scale items, and Table

12 for a summary of the descriptive statistics for the Intention subscales. All of the

subscales had mean scores above the neutral response (3) on the 5-point Likert-type

scale. This indicated a negatively skewed distribution of scores, with scores tending

toward the higher end of the scale. Highest scores (5) denoted confidence or "extremely

likely" intention to provide patient-centered care to people experiencing OAO. Thus,

negatively skewed scores indicated that the sample population intended to provide

patient-centered care to people experiencing OAO. Each of the three subscales had mean

scores reflecting the "somewhat likely" (4) intention on the Likert-type scale. Mean

scores for individual items within the Intention scale reflected a "Neither likely nor

unlikely" (3) or higher response.

Table 12

Descriptive Statistics—Intention (n = 739)

Scale	Subscale	Mean	SD	Range
INTENTION	Total Score	112.4	16.19	68
	Exploring patient perspective	4.24	.660	4
	Sharing information and power	4.14	.680	4
	Dealing with communicative challenges	4.08	.618	3

Upon further examination, five items had intention mean scores at a neutral (3) response level. Each of these items had a confidence (self-efficacy) mean score at the "somewhat high" (4) response level. Paired sample *t*-tests were used to determine if the intention mean scores for these items were significantly lower than the self-efficacy mean scores for the same item (assuming parallel Likert-style scale response). A *t*-score greater than the t_c= 1.963 (df 738; α = .05) confirmed that the intention mean scores for these items were significantly different from the self-efficacy mean scores. See Table 13 for a summary of the paired-sample *t*-test for survey items with a significant shift in mean score responses. Items 9 [*Be attentive and responsive*] (M = 4.43, SD.754) and 14 [*Treat the patient in a caring manner*] (M = 4.42, SD = .771) were both part of the "exploring patient perspective" subscale and had the highest overall mean scores.

Table 13

Survey Item Comparison of Mean Difference Between SEPCQ-27 and Intention Scales (n = 739, df 738, α = .05).

Item	t	p
1. Make the patient feel I am genuinely interested in what he/she thinks about his or her situation. (Exploring patient perspective)	9.054	<.001
6. Reach agreement with the patient about the treatment plan to be implemented. (Sharing information and power)	13.424	<.001
7. Advise and support the patient in making decisions about his/her treatment. (Sharing information and power)	10.777	<.001
16. Maintain the relationship with the patient when he/she is angry. (Dealing with communicative challenges)	10.416	<.001
17. Make the patient experience me as empathetic. (Exploring the patient perspective)	9.658	<.001

Research Question 5

Two separate regression analyses were conducted to determine if any of the demographic (background) variables predicted: (a) EMS providers' attitudes (total score) toward opioids and OAO, and (b) self-efficacy (total score) in patient-centered care (Research Question 5).

Total (sum) scores for DDPPQ and demographic factors were used in the regression analysis to determine if background factors predicted attitude toward opioids and opioid addiction. The regression model output illuminated which demographic factors predicted EMS provider attitudes toward opioids and opioid addiction. The model R^2 ($R^2 = .042$, n = 739, p = .05) using total score DDPPQ revealed that the license level ($t = 4.219$, $p = <.001$) and level of education ($t = 2.082$, $p = .038$) were statistically significant predictors of attitude (total score) toward opioids and opioid addiction. The fitted model R^2 ($R^2 = .092$, n = 739, $p = .05$) using total (sum) score SEPCQ-27 revealed that gender (t = -4.738, $p = <.001$), license level ($t = 5.274$, $p = <.001$), and years of employment (t = -2.898, $p = <.001$) were significant predictors of self-efficacy (total score) in patient-centered care.

One way between groups ANOVA were conducted after ascertaining that the assumptions of ANOVA (normality, homogeneity of variance, and independence of observation) were not violated. The diagnostic statistics used to examine these assumptions were discussed in the *preliminary analyses*. Effect sizes were evaluated according to Cohen's (1988) reference numbers: 0.2 (small effect), 0.5 (moderate effect), and 0.8 (large effect) (pp. 284-287). If the means of two demographic levels did not meet the threshold of 0.2 or more, at a $p < .05$, the difference was deemed trivial, even if mean

difference was found to be statistically significant (Cohen, 1988; Pallant, 2016). A post-hoc test was used to identify at which level(s) the difference in mean scores occurred for each of the demographic factors.

DDPPQ subscales. One-way, between groups ANOVA were conducted to determine if demographic factors influenced each of the four DDPPQ subscales: role adequacy, role support, job satisfaction, and role legitimacy. License level, previously identified by the regression analysis as a significant predictor of total score DDPPQ, was evaluated for its influence on each of the DDPPQ subscales. Survey respondents represented four different prehospital care provider license levels coded as: first responder (1), EMT-basic (2), advanced EMT (3), and paramedic (4). There was a statistically significant effect of license level for the DDPPQ subscale *job satisfaction* (F (3,735) = 23.075, *p* = .001). The F statistic for *job satisfaction* was greater than the critical value (Fc (3,735) = 2.617, *p* = .05), allowing for the rejection of the null hypothesis and acceptance of the alternate hypothesis. This means that license level predicted *job satisfaction* mean score. License level effect sizes, calculated using eta-squared, on *job satisfaction* (.09) confirmed a statistically significant difference in mean scores. Post-hoc comparisons using the Tukey HSD calculated with the mean score for *job satisfaction* (M = 5.61, SD = .906) were significantly different at three license levels: EMT-basic (M = 5.33, SD = .939), advanced EMT (M = 5.63, SD = .921), and paramedic (M = 5.89, SD = .731). The mean score of *job satisfaction* increased significantly with each increase in license level from Basic EMT to paramedic. The entry-level certification, first responder (M = 5.06, SD = 1.288), did not differ significantly from the other license levels.

The demographic factor *education level,* previously identified by the regression

analysis as a significant predictor of total score DDPPQ, was evaluated for its influence

on each of the DDPPQ subscales. Education factor had four levels coded as: high

school/GED (1), associate (2), bachelor (3), and master and doctorate (4). Survey

respondent education level was divided into four levels: high school/GED, associate's,

master's, and doctorate. There was a statistically significant effect of education level on

job satisfaction $(F\ (4,734) = 4.247, p = .036)$. The F statistic was greater than the critical

value $(Fc\ (4,374) = 2.382, p = .05)$, allowing for the rejection of the null hypothesis and

acceptance of the alternate hypothesis. This means that *education* was a significant

predictor of *job satisfaction*. Post-hoc comparisons using the Tukey HSD calculated with

the mean score *education* level were significantly different: high school/GED (M = 4.41,

SD = 1.08), associate (M = 4.57, SD = 1.234), bachelor (M = 4.59, SD = 1.194), master

(M = 4.7, SD = 1.091), and doctorate (M = 5.04, SD = .964). While the mean score of

education increased with advancement in education, the effect size calculated using

eta-squared (.019) was small (Cohen, 1988).

SEPCQ-27 subscales. A one-way, between-groups ANOVA was conducted to

determine if socio-demographic factors influenced each of the three SEPCQ-27

subscales: Exploring patient perspective (EPP), Sharing information and power (SIP),

and Dealing with communicative challenges (DCC). License level, previously identified

by the regression analysis as a significant predictor of total score SEPCQ-27, was

evaluated for its influence on each of the subscales. License level had four levels coded

as: first responder (1), EMT-basic (2), advanced EMT (3), and paramedic (4). There was

a significant effect of license level for each of the SEPCQ-27 subscales: EPP $(F\ (3,735) =$

3.013, *p* = .029); SIP (F (3,735) = 16.928, *p* = .001); and DCC (F (3,735) = 4.585,

p = .003). The F statistics were all greater than the critical value (Fc (3,375) = 2.627,

p = .05); Thus, the null hypothesis was rejected and the alternate hypothesis was

accepted. This means that an EMS provider's license level significantly predicted each of

the self-efficacy levels in EPP, SIP, and DCC. Post-hoc comparisons using the Tukey

HSD calculated with the mean score for SIP (M = 4.37, SD = .618) revealed significant

relationships between multiple license levels. The effect of license level on SIP was

significant between first responder (M = 3.86, SD = .860) and the EMT-Basic (M = 4.22,

SD = .612), Advanced EMT (M = 4.40, SD = .625), and Paramedic (M = 4.51, SD =

.550) license levels. Additionally, there was an effect when comparing EMT-Basic to the

other license levels. Advanced EMT and paramedic, however, revealed statistically

significant differences with the other license levels and not with each other. Despite

statistical significance, the actual difference in mean scores between the license levels in

EPP and DCC was quite small, as evidenced by their small effect sizes calculated using

eta-squared. The effect sizes for EPP (0.01) and DCC (0.2) revealed a weak (small) effect

on the variables. The actual mean difference between *license level* in SIP was large and

had a large effect size (0.06). Thus, the effect of *license level* on SIP was considered the

only statistically significant relationship.

　　　　Gender, previously identified by the regression analysis as a significant predictor

of total score SEPCQ-27, was evaluated for its influence on each of the subscales. Gender

had three levels coded as: female (1), male (2), and unknown (3). There was a significant

effect of gender for all of the SEPCQ-27 subscales: EPP (F (2,736) = 22.144, *p* = <.001),

SIP (F (2,736) = 9.336, *p* = <.001), and DCC (F (2,736) = 8.780, *p* = <.001). The

F statistics were all greater than the critical value (Fc (2,376) = 3.007, *p* = .05). Thus, the null hypothesis was rejected and the alternate hypothesis was accepted. This means that an EMS provider's gender significantly predicted each of the self-efficacy levels in EPP, SIP, and DCC. Post-hoc comparisons using the Tukey HSD calculated with the mean score for *gender* revealed significant relationships between the female (M= 4.66, SD = 4.20) and male (M = 4.39, SD = .557), and female and unknown (M = 4.07, SD = 662) levels within the EPP subscale. The effect size for EPP (0.06) demonstrated that *gender* had a moderate effect on mean scores. The effect of *gender* on SIP was also significant between female (M = 4.50, SD = .556) and male (M = 4.32, SD = .633), and female and unknown (M = 3.78, SD = 615) levels. The effect size for SIP (.024), however, showed that gender had a small effect. There was also a statistically significant effect size (.02) when comparing *gender* to the DCC subscale, with mean scores for female (M = 4.39, SD = .506) and male (M = 4.22, SD = .569) at the *p* = .05 level. Gender significantly influenced mean scores on each of the SEPCQ-27 subscales with a small to moderate effect size. Mean scores for the SEPCQ-27 subscales were significantly higher for the female level, as compared to the male and unknown gender levels.

Years of service, previously identified by the regression analysis as a significant predictor of total score SEPCQ-27, was evaluated for its influence on each of the subscales. Years of service had five levels coded as: 0-10 (1), 11-20 (2), 21-30 (3), 31-40 (4), and 41-50 (5). There was a significant effect of *years of service* for two of the SEPCQ-27 subscales: EPP (F (4,734) = 4.667, *p* = .001), and DCC (F (4,734) = 2.646, p = .032). The F statistics for these two subscales was greater than the critical value (Fc (4,374) = 2.384, *p* = .05). Thus, the null hypothesis was rejected and the alternate

hypothesis is accepted. This means that an EMS provider's *years of service* significantly predicted self-efficacy in the EPP and DCC subscales. Post-hoc comparisons using the Tukey HSD calculated with the mean score for *years of service* revealed significant relationships between the 0-10 years of *service level* (M = 4.56, SD = 4.68), 21-30 years of service level (M = 4.36, SD = .574), and 31-40 years of service level (M = 4.34, SD = .620) within the EPP subscale. While there was significant mean difference between the scores, the effect size (0.024) of *years of service* on EPP was small. The post-hoc analysis of the relationship between *years of service* DCC subscale showed no significant mean difference among the levels. Additionally, the effect size of *years of service* (.014) on DCC was trivial. In summary, *years of service* significantly predicted both EPP and DCC subscale mean scores. However, *years of service* had a small effect on EPP, with mean scores decreasing as providers moved from the 0-10 level to the 21-30 and 31-40 levels.

Several demographic factors were not significant predictors of provider attitude or self-efficacy. The sample was a fairly homogeneous group of Caucasian individuals (98.5%). Thus, exploring mean differences in attitude and self-efficacy based on ethnicity was ineffective for this population of EMS providers. Age and EMS region were also deemed non-significant background factors in this study.

Research Question 6

Multiple regression analyses were used to show the linear relationship between the predictor variables (attitude and self-efficacy) and the outcome variable (Intention). The implicit assumption of the TPB was that the predictor variables (IVs) were linearly related to intention (DV). In this research, the DDPPQ and SEPCQ-27 subscales

were used as predictor variables. The following regression equation was used:

$y = b_0 + b_i*x + e$, whereby y = estimated dependent variable, e = constant, b = regression

coefficient, and x = independent variable. Preliminary diagnostic analyses were

conducted to ensure that there were no violations in the assumptions of normality,

linearity, multicollinearity, and homoscedasticity.

Regression Analyses

Descriptive statistics were run on the continuous DDPPQ and SEPCQ-27

subscales and INTENTION total score to assess the presence of outliers and assumption

of normality. Regression analyses were run in order to examine the presence and

influence of outliers in the data set as well as to assess the assumptions of regression

analysis. See Appendix M for a summary of the Diagnostic Analyses.

Regression Model

All of the seven subscales were entered into a standard regression analysis to

determine which, if any, of the variables were significant predictors of intention. The

fitted model ($R^2 = .592$, F (4,734) = 266.381, p = <.001) exceeded the critical F value

(F (4,734) = 2.384, p = .05), which met the conditions for rejecting the null hypothesis

that stated there is no relationship among the predictor variables and intention. The

resulting $R^2 = .592$ (n = 739) means that the model explained 59.2% of the variable

variance. In this model job satisfaction, exploring patient perspective, sharing

information and power, and dealing with communicative challenges were identified as

significant predictors of intention. See Table 14 for a summary of the correlations of the

DDPPQ and SEPCQ-27 subscales.

Table 14

Correlations of DDPPQ and SEPCQ-27 Subscales to Intention (p < .05)

Scale—Subscales	Correlation	*p*	Tolerance	VIF
DDPPQ				
Role adequacy	.311	.455	.619	1.615
Role support	.206	.860	.755	1.324
Job satisfaction	.436	<.001	.274	3.656
Role legitimacy	.205	.182	.727	1.376
SEPCQ-27				
Exploring patient perspective	.680	<.001	.929	1.076
Sharing information and power	.666	<.001	.337	2.964
Dealing with communicative challenges	.665	<.001	.280	3.573

This model provides evidence to conclude that the slope (unstandardized B) of the independent variables was not zero and thus was useful as a predictor of Intention (Tabachnick & Fidell, 2014). Thus, the alternate hypothesis was accepted, stating that attitudes toward opioids and OAO and self-efficacy in patient-centered care predicted EMS providers' intention to provide patient-centered care to people experiencing OAO.

The *adjusted* R^2 was assessed to determine that the independent variables improved the model more than would have been expected by chance, thus assuring that the final model was not an overestimate of the population (Tabachnick & Fidell, 2014). The *adjusted* R^2 values confirmed that *exploring patient perspective* ($AR^2 = .462$), *job*

satisfaction (AR^2 = .533), *sharing information and power* (AR^2 = .581), and *dealing with communicative challenges* (AR^2 = .590) contributed to the model more than expected by chance.

The Beta (standardized coefficients) values were assessed to determine the contribution of each independent variable to the final model (Pallant, 2016). See Table 15 for a summary of the output for the regression analysis. The *sharing information and power* (B = .282, *p* = <.001) subscale made the strongest unique contribution to explaining the DV, "when the variance explained by all other variables in the model is controlled for" (Pallant, 2016, p. 162). The Beta value for job satisfaction was slightly lower (B = .273, *p* = <.001), indicating that it made less of a unique contribution. Each of the four subscales made a statistically significant contribution to the regression equation and the resulting prediction of Intention (DV).

The part-correlation coefficients were assessed to determine the unique contribution of each variable to the total variance (R^2) (Pallant, 2016; Tabachnick & Fidell, 2014). See Table 15 for a summary of the squared part-correlation coefficients. The variable *job satisfaction* (6.9%) contributed most to the explanation of variance in Intention scores.

The following multiple regression equation summarizes this linear relationship for the sample: $y = b_0 + b_1(x_1) + b_2(x_2) + b_3(x_3) + b_4(x_4) + e$. The multiple regression equation for the sample showed the mean value of Intention (y) for specific values of *exploring patient perspective* (x_1), *job satisfaction* (x_2), *sharing information and power* (x_3), and *dealing with communicative challenges* (x_4). Using the equation below, given

values for x_i predict Intention: Intention = $7.832 + 7.127x_1 + 3.800\ x_2 + 7.388x_3 + 5.434x_4 + e$. See Figure 4 for a summary of the relationships among the demographic factors, predictor variables, and the outcome variable, Intention.

Table 15

Stepwise Multiple Regression Output—Analysis Predicting Intention to Provide Patient-Centered Care to People Experiencing Opioid Addiction/Overdose (n = 739, p < 0.001)

Model	B	Std. Error	Beta	t	p	(part r)^2
Constant	7.832	3.319	.	2.360	.019	.
Exploring patient perspective (X_1)	7.127	1.36	.236	5.237	<.001	.015
Job satisfaction (X_2)	3.800	1.341	.273	11.159	<.001	.069
Sharing information and power (X_3)	7.388	1.063	.282	6.949	<.001	.026
Dealing with communicative challenges (X_4)	5.434	1.292	.187	4.206	<.001	.009
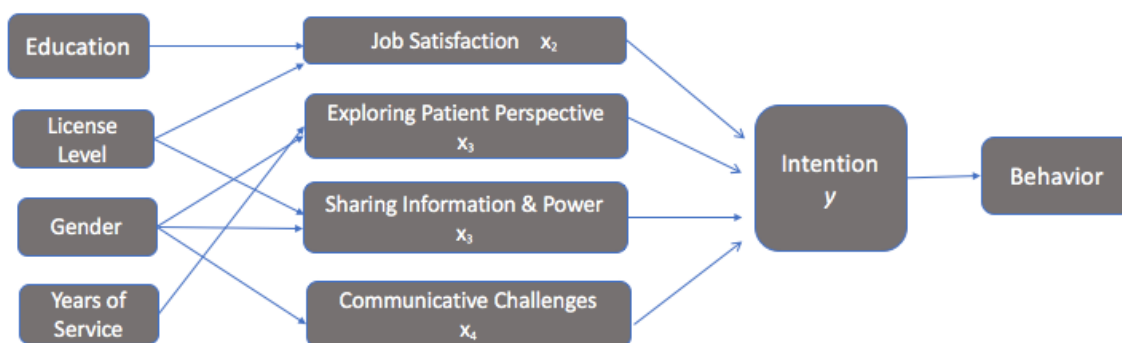
Figure 4. Model of the relationship among background factors, predictor variables, and intention

Summary

The purpose of this study was to examine EMS providers' intentions to provide patient-centered care to people experiencing OAO in the state of Maine. The Theory of Planned Behavior provided the theoretical model for investigation. The cross-sectional survey study obtained a representative response sample of n = 765. Pre-analyses were conducted to assure a complete data set meeting the assumptions required for analyses.

The results of this study showed that the sample of EMS providers in the state of Maine held overall positive attitudes toward opioids and opioid addiction. The results also showed that the sample of EMS providers in the state of Maine had an overall positive self-efficacy (confidence) in their ability to provide patient centered-care. Additionally, Maine EMS providers self-reported that they were likely (intended) to provide patient-centered care to people experiencing OAO.

Various demographic factors predicted mean scores for the independent variables in the regression model. Level of *education* significantly predicted *job satisfaction* with each advancement in level education. Providers' advancement in *license level* significantly predicted *sharing information and power* and *job satisfaction*. Both *sharing information and power* and *job satisfaction* increased significantly with each increase in license level. Providers' *years of service* significantly predicted both *exploring patient perspective* and *dealing with communicative challenges*, and both decreased as providers moved from the 0-10 *years of service* level to the 21-30 and 31-40 years of *service levels*. Gender significantly influenced each of the SEPCQ-27 subscales, showing that mean scores for female level were significantly higher compared to the male and unknown gender levels.

The results of this study provided support for the use of the SEPCQ-27 in predicting intention, and limited support for the use of the DDPPQ in predicting intention. All three of the SEPCQ subscales were found to be significant predictors of intention. Only one of the four DDPPQ subscales was found to be a significant predictor of intention among EMS providers in the state of Maine. Four independent variables were identified by the regression model: job satisfaction, exploring patient perspective, sharing information and power, and dealing with communicative challenges. Several individual survey items within these subscales revealed potential strengths in provider attitudes and self-efficacy as well as areas that may benefit from education intervention.

The four independent variables explained 59% of the variance in intention to provide patient-centered care to people experiencing OAO in the state of Maine. The *adjusted* R^2 values confirmed that *exploring patient perspective*, *job satisfaction*, *sharing information and power*, and *dealing with communicative challenges* contributed to the model more than would be expected by chance. The variable *sharing information and power* had the strongest influence on Intention scores. The variable *job satisfaction* had slightly less influence on Intention scores, as compared to the self-efficacy subscales; however, it explained more of the proportion of variance (effect) in Intention scores.

This chapter presented the results of the data analysis, including findings via figures and tables for the purpose of answering the research questions and understanding the analyses through the lens of the TPB. Chapter V next presents the discussion of results, conclusions, limitations, and recommendations.

Chapter V

DISCUSSION, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

This chapter presents a discussion of the results of this study, including the implications of the results, conclusions, limitations of the research, and recommendations.

Study Background and Research Questions

There is an urgent need for interventions to mitigate our nation's current opioid epidemic. Considerable existing research has shown that experiences of stigma and shame serve only to socially isolate those with opioid addiction, reinforcing factors that in turn entrench resistance to addiction treatment. Research has also suggested that when people experiencing opioid addiction and overdose (OAO) find an ally in healthcare, healing begins. A patient-centered care approach is identified as having the attributes that promote such a relationship: exploring patient perspective, sharing information and power, and dealing with communicative challenges. Maintaining an interpersonal stance reflective of a patient-centered care approach requires that providers hold positive attitudes in their role adequacy, role support, job satisfaction, and role legitimacy regarding opioids and OAO.

The goal of this study was to examine which of these attitudinal and self-efficacy factors (variables) influence behavioral intention to provide patient-centered care to people experiencing OAO in the context of the prehospital care setting. The state of Maine is known for its small rural EMS operations, longer transport times, and community based care as compared to more urban areas. A patient-centered care approach is particularly well-suited for the rural EMS operations. This study examined demographic factors and their influence on providers' attitude and self-efficacy in hopes of illuminating background factors that predispose one to have a more positive attitude and higher self-efficacy. The findings of this study were discussed and contextualized within the scope of the Theory of Planned Behavior (TPB), existing literature, and the researcher's knowledge of the field of EMS in the state of Maine.

This study included seven independent variables within two spheres of the TPB predictor variables: attitude and self-efficacy. Specific results and patterns for each of these variables were explained in the previous chapter. Since demographic factors were considered background factors in the TPB, it cannot be concluded that demographic factors mediate intention outcomes, but rather moderate the relationships evident in the results; as examined within the context of the TPB and the study's limitations. In the current study, the researcher sought to answer the following research questions:

1. What are the demographic characteristics of the sample population and is it representative of the population of EMS providers in the state of Maine?

2. What types of attitudes do Emergency Medical Service (EMS) providers in the sample hold regarding OAO?

3. What levels of self-efficacy in patient-centered care do EMS providers in the sample self-report?

4. What is the intention of EMS providers in the sample to provide patient-centered care to people experiencing OAO?

5. Can demographic factors predict EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care?

6. Are EMS providers' attitudes toward opioids and opioid addiction, and self-efficacy in providing patient-centered care are related to intention to provide patient-centered care to people experiencing OAO?

Guided by the existing literature on the role of patient-centered care in reducing enacted stigma in the medical care of people with OAO, the researcher assessed direct measures of EMS providers: (a) attitudes toward opioid and opioid addiction, (b) self-efficacy in patient-centered care, and (c) intention to provide patient-centered care to people experiencing OAO in the prehospital setting. Collaboration with the state of Maine EMS afforded the opportunity of all EMS providers in the state to participate in the study. A reasonably representative, large sample population was generated from the online survey.

Interpretation of Findings

The study included numerous demographic variables to help describe the sample population and identify relationships with predictor variables. The predictor variables were derived from the TPB spheres of attitude and self-efficacy. These predictor

variables were used to determine if they could predict EMS providers' intentions to provide patient-centered care to people experiencing OAO.

Demographic Factors

It is very clear from the results that demographic factors were related to attitudinal and self-efficacy scores. Four demographic factors were found to have a significant influence within individual subscales: license level, education, gender, and years of service. Highlights of findings in each context were discussed through the lens of the researcher's knowledge of EMS and EMS operations in the state of Maine.

As providers advance from one license level to the next, their *job satisfaction* and *sharing information and power* scores increased. Job satisfaction is an attitudinal measure referring to the "belief that work is rewarding and the person feels a sense of satisfaction from that work" (Watson et al., 2006, p. 207). Sharing information and power is a self-efficacy measure referring to a provider's confidence in establishing a shared understanding of the medical condition, exam, and treatment, as well as confidence in sharing power, "offering opportunities for the patient to provide input," and being involved in their care (Zachariae et al., 2015, p. 3). In both subscales, providers' mean scores increased significantly with each advancement in license level from first responder to paramedic. Each advancement license level corresponded to more advanced knowledge, skills, and responsibility in providing patient care and scene management. Thus, those licensed at the paramedic level are likely to have more advanced knowledge and skill sets, as well as the added responsibility of managing the team of providers, resources, and scene safety. Paramedics are often the team leaders on an emergency scene. This responsibility goes to the next highest license level on scene if no paramedic

is available. First responders are minimally involved in patient care and are often the

default designated driver of emergency vehicles. Thus, they may have limited contact

with patients and lack the same level of confidence in their patient care skills as

compared to higher license levels. Their placement in the hierarchy of license levels may

also directly influence their job satisfaction because they are often receiving direction

from others and performing important non-patient care duties such as driving and

maintaining the ambulance.

EMS providers' obtained level of education also predicted the attitudinal score for

job satisfaction. It should be noted that a provider's license level does not necessarily

mean an advancement in education level. While paramedics may also hold an associate's

degree in Paramedicine, a college degree is not requisite for licensure at any of the

license levels. Many providers complete certification courses and become licensed by the

state. The results showed that as providers obtained more advanced college degrees, their

job satisfaction scores significantly increased. This finding corresponded to existing

research that nurses with higher levels of education are more likely to be very satisfied

with their jobs (Lu, White, & Barriball, 2005). This same research suggested that

increased education is an important variable in conditioning the kinds of attitudes

providers bring to the workplace (Lu et al., 2005).

EMS providers' gender significantly predicted each of the self-efficacy subscales.

For each subscale, females self-reported significantly higher scores as compared to males

and those identifying as unknown. This finding was consistent with existing research of

medical student and physician self-report measures of self-efficacy in patient-centered

care which indicated that females "value patient-orientation and communication more

than male students" (Zachariae et al., 2015, p. 11). Therefore, it was not unexpected that other female allied healthcare professionals such as EMS providers would score higher than males on self-efficacy scores.

Years of service (employment) in EMS significantly influenced the self-efficacy scores on both the *exploring patient perspective (EPP)* and *dealing with communicative challenges (DCC)* subscales. EPP refers to providers' consideration of patient needs, wants, perspectives, and experiences. DCC refers to the provider's confidence in conveying compassion, empathy, awareness, and reflection on the patient-provider relationship (Zachariae et al., 2015).

Providers with 0-10 years of service level reported significantly higher levels of confidence in both EPP and DCC than providers with 21-30 and 31-40 years of service. Confidence in patient-centered care decreased significantly among providers with 21-40 years of service. This finding was inconsistent with existing research that suggested self-efficacy increase with increased years of experience and age (Zachariae et al., 2015). This finding was also inconsistent with research that confidence in the "ability to establish a constructive relationship with the patient" is a function of experience (p. 11). This inconsistency may be attributed to the fact that patient-centered care is a core competency for medical students and physicians, and not EMS providers in the state of Maine (Zachariae et al., 2015). Since patient-centered care is associated with "higher levels of patient satisfaction, improved health outcomes, and lower levels of burnout," it is prudent to further investigate the inclusion of patient-centered care as a core competency in preparatory training for EMS licensure (Zachariae et al., 2015, p. 2).

Many EMS providers in the state of Maine are cross-trained in other public safety disciplines (n = 529): community paramedicine, fire service, communications, law enforcement, and corrections. While cross-training was not a significant predictor of attitude and self-efficacy mean scores, those cross-trained as community paramedics and corrections did have higher sum scores for intention to provide patient-centered care to people experiencing OAO as compared to other public safety disciplines. It should be noted that while many EMS providers reported no identified cross-training in other public safety disciplines, many were employed in other health professions. Thus, it must be assumed that cross-training is not an indicator of a lack of mental health, addiction, and/or patient-centered care training. The absence of a survey question to capture other health profession and previous training in patient-centered care is a limitation of this study. The higher scores reported by community paramedics and corrections, as compared to the other public safety disciplines, may be due to the specialized mental health training received within the scope of long-term care of patients in the home and corrections facilities. Community paramedics, for example, receive advanced preparatory education in mental health to better serve the needs of rural and underserved communities (National Curriculum and Career Pathway Community Paramedic, 2016).

Predictors of Intention

To answer the question "What are the relationships among independent (predictor) variables and intention to provide patient-centered care to people experiencing opioid addiction?", multiple regression was performed between the dependent variable (intention) and the independent variables (the direct measures of attitude toward opioids

and opioid addiction, and self-efficacy in patient-centered care). The analysis indicated R^2 was significantly different from zero (F (4,734) = 266.381, p = <.001), and explained 59.2% of the variance in intention. The model included only the TPB variables and were statistically significant, as evidenced by the statistical significance of the F test.

Data analysis showed that overall intention to provide patient-centered care to people with opioid addiction was high. The constructs of the TPB model showed mixed results. *Job satisfaction* was the only attitude regression coefficient found to make statistically significant contributions in intention. Each of the three self-efficacy regression coefficients were found to make statistically significant contributions in the model. Of all regression coefficients (predictor variables), *exploring patient perspective* made the strongest significant contribution (R^2 change = .463) in the influence of intention to provide patient-centered care to people experiencing OAO. In summary, the TPB provided a reasonable prediction of intention in this sample population of Maine EMS providers. The direct variables accounted for nearly 60% of the variance in intentions. These results are similar to other TPB studies examining intention, whereby self-efficacy explained the greatest variance in intentions (Ajzen, 2006b; Armitage & Conner, 2001). See Figure 5 for a summary of the relationships among demographic factors, predictor variables, and outcome variable, Intention.

Exploring patient perspective was an essential component of patient-centered care. Exploring the patient perspective requires compassion for patients and their life situation. Previous research has shown, however, that healthcare providers often view patients experiencing OAO as "difficult" or causing "heart-sink" because of the chronicity of addiction and the elevated risk of violence in prehospital treatment

patients experiencing drug addiction and overdose (Edgoose, Regner, & Zakletskaia, 2014, p. 335). These patients may have coexisting psychiatric disorders, poorer functional status, and high utilization of healthcare services (Edgoose et al., 2014). The combined effect of these variables results in challenging patient encounters. Compounding these challenges, patients experiencing opioid addiction are entrenched in a cycle of shame and marginalization that serves only to accentuate a disconnect between provider and patient. The complexities of providing a patient-centered approach in the treatment of people with opioid addiction in the prehospital setting are magnified when the scene is potentially violent and patient encounters for overdose with the same person are frequent.

As discussed in the results, several items within the SEPCQ-27 scale showed a statistically significant decrease in mean scores between confidence in the behavior and the likelihood that the behavior would occur with a patient experiencing OAO. Two items in exploring the patient perspective subscale presented as potential areas for intervention: "Make the patient feel I am genuinely interested in what he/she thinks about his or her situation" and "Make the patient experience me as empathetic." Both of these reflect a collaborative "way of being with" patients versus "doing to" patients. Expressing empathy builds rapport and trust between the patient and provider, which in turn encourages patients to share more honestly about their current situation.

On the surface, it would seem nearly impossible to meet the expectations of sharing information and power. Many patients are incapacitated by drugs and unable to make decisions about their medical care. The very nature of informed consent in emergency care means that for some patients, decisions about their care are made by the

legal premise of implied consent. Patients posing a potential life threat to themselves and others may be physically restrained or chemically sedated to protect themselves and others. This certainly changes the patient care dynamic and may explain the statistically significant shift in scores for two items in the *sharing information and power* subscale: "Reach agreement with the patient about the treatment plan to be implemented" and "Advise and support the patient in making decisions about his/her treatment." These two behaviors would become important with a conscious, non-violent patient. Sharing information and power facilitates rapport building. Research has also supported the practice of engaging patients in their treatment to support the development of prosocial identities among people experiencing OAO (Kolind & Hesse, 2017). This practice is the cornerstone of non-stigmatizing patient care encounters (Kolind & Hesse, 2017).

The same variables exist when dealing with the communicative challenges subscale item, "Maintain the relationship with the patient when he/she is angry." The use of de-escalation strategies does not preclude maintaining a "relationship" with the patient. Relationship in this case would be defined as facilitating emotional regulation so that a more empathetic, non-hierarchical approach can be used. This practice is consistent with research that patient-centered care "is about engaging patients, not accommodating them" (Kolind & Hesse, 2017, p. 465).

While *job satisfaction* made statistically significant contributions in intention, the other attitudinal factors evaluated in this study (role adequacy, role legitimacy, and role support) lacked predictive value. This result may be because the factors are not an important consideration in the formation of intention for this behavior (provide PCC to people experiencing OAO) and population (EMS providers in the state of Maine) (Ajzen,

2006b). This is supported by Ajzen's (2006b) assertion that there is nothing in the TPB to suggest that any one of the factors will make a significant contribution to the prediction of intention. It should also be noted that the measure of attitude toward opioids and opioid addiction was a purposeful deviation from the TPB model, which uses a measure of attitude toward the behavior (patient-centered care) itself. The modification was supported by research identifying attitudes toward opioids and opioid addiction as a significant factor in patient care. EMS providers' negative attitudes may act as anchoring biases that fuel stigmatizing ways of thinking about and treating people with opioid addiction (Ross,2014). An assessment of EMS providers' attitudes is key to developing evidence-based interventions that replace negative attitudes and achieve the highest level of healthcare possible. While the assessment of attitude toward opioids and opioid addiction is appropriate for this study, it is unknown if this modification contributed to the lack of predictive value of the attitudinal factors.

The lowest scoring item within the role adequacy scale, "I can appropriately advise patients about opiate drugs and their effects," was in direct contrast to the highest scoring items within the DDPPQ scale: "I have a working knowledge of opiate drugs and drug-related problems" and "I know enough about the causes of opiate drug problems to carry out my role when working with opiate users." The discrepancy between these items lies in the ability to *advise* patients and that *advising* is their responsibility. Providing education to teach EMS providers how to advise patients about what they know about opiate drugs, effects, and associated problems will help them feel more adequately prepared to meet patients' needs and increase their role adequacy. Educating providers who engage in a dialog and advising about opiate drugs and related problems involve the

collective effort of all healthcare professionals. Current research has confirmed that advising patients "about the risks of opioid overdose...may reduce fatalities from overdose" (Mueller, Walley, Calcaterra, Glanz, & Binswanger, 2015, p. 240). The lowest-performing item in the entire DDPPQ scale is "In general, I feel I can understand opiate drug users." Providing education to EMS providers about the medical definition of addiction with a focus on the role that stigma plays in perpetuating health inequity may help improve EMS providers' understanding of the drug user. This enhanced understanding may in turn result in a more empathetic patient-centered care approach with people experiencing OAO. Since this item was within the job satisfaction subscale, and job satisfaction was a significant predictor of intention to provide PCC to people experiencing OAO, it is essential that EMS providers obtain this vital knowledge to inform their practice.

Attitude and self-efficacy were conceptually independent predictors of intentions in this study. However, empirically, they were found to be inter-correlated (Ajzen, 2006a). According to Ajzen (2006a), these inter-correlations arise because the same information can influence behavioral and/or control beliefs—the theoretical antecedents of attitude and self-efficacy, respectively. For example, the literature review has established that the experience of stigma is a predisposing factor in poor health outcomes for patients experiencing OAO. It was also established that a patient-centered care approach reduces the likelihood of the experience of stigma in the patient-provider encounter. This knowledge may lead to the behavioral belief that providing patient-centered care is how I (the provider) provide the highest standard of care to people with opioid addiction and support their motivation to access and engage with treatment

services. This knowledge may also lead to cognitive dissonance regarding low scoring

beliefs that "In general I get satisfaction from working with opiate drug users" and "Make

the patient experience me as empathetic." The interplay of these beliefs was expressed by

the EMS providers who were compelled to correspond to the researcher via the survey

IRB contact information. These communications conveyed a sense of urgency to share

their lived experiences in providing prehospital care for people experiencing OAO.

This correspondence points to the importance of other attitudinal subscale

constructs influencing EMS providers' overall intention to provide patient-centered care

to people with OAO. The DDPPQ non-predicting subscales each had a correlation with

job satisfaction and the other three SEPCQ-27 subscales. Additional variables, such as

social norms, control beliefs, and background factors, that were not measured in this

study may have influenced the relative ability of these subscales (role adequacy, role

support, and role legitimacy) to predict intention. Future research is needed to illuminate

and measure this interplay.

Conclusions

This research adds to the body of research describing the prehospital care of

people experiencing OAO. This research is relevant to the body of research on patient-

centered care, especially in the area of prehospital treatment of those experiencing OAO.

This research expands and supports the use of the DDPPQ and SEPCQ-27 as valid and

reliable measures of EMS providers' attitude and self-efficacy. These metrics were

valuable in assessing EMS providers' intention within the TPB as the theoretical

framework. A study assessing EMS providers' intention based on the constructs of the

TPB to provide patient-centered care to people experiencing OAO had not been developed before. There is little empirical research to draw upon to make comparisons. Using the data presented in Chapter IV, this section provides conclusions to the following six research questions.

Research Question 1. What are the demographic characteristics of the sample population and is it representative of the population of EMS providers in the state of Maine?

The demographic characteristics of the sample population were reported in Chapter IV. The vast majority were White and males, with a high school diploma or an associate's degree. A large proportion of respondents were from the southern Maine service region, holding an EMT basic or paramedic license. The largest proportion of the sample population were ages 25-54 and have 0-20 years of service. Forty percent of the respondents were in leadership roles. A comparison of providers' service region, gender, and license level showed that the sample was representative of the population of providers in the state of Maine.

Research Question 2. What types of attitude do Emergency Medical Service (EMS) providers in the sample hold regarding opioids and opioid addiction?

Descriptive statistics revealed that EMS providers in the state of Maine held overall positive attitudes toward opioids and opioid addiction. Inspection of the DDPPQ showed positive attitudinal mean scores for each of the subscales (constructs): role legitimacy, role adequacy, role support, and job satisfaction. Role legitimacy, the extent to which providers regard aspects of their work as being their responsibility, had the highest mean score; by contrast, job satisfaction, the belief that their work is rewarding

and they feel a sense of satisfaction from that work, had the lowest mean score among all of the subscales. This subscale had a more neutral (neither agree nor disagree) value. All of the subscales were negatively skewed, denoting values heavily tailed toward the positive attitude range. Examination of the individual items within each subscale elucidates specific areas in need of intervention: (a) advising patients about opioids and opioid-related problems; (b) understanding opioid users via a biopsychosocial model, and (c) providing support to increase a belief that working with people experiencing OAO is meaningful and rewarding.

Research Question 3. What levels of self-efficacy in patient-centered care do EMS providers in the sample self-report?

Descriptive statistics revealed that EMS providers in the state of Maine held overall confidence in patient-centered care. Inspection of the SEPCQ-27 showed positive self-efficacy mean scores for each of the subscales: exploring patient perspective, sharing information and power, and dealing with communicative challenges. Exploring the patient perspective—considering the patients' needs, wants, perspectives, and individual experiences—had the highest mean score. The subscale dealing with communicative challenges—enhancing patient-provider relationships with a focus on compassion, empathy, awareness, and reflection—while positive had the lowest mean scores of all of the subscales. All subscales had mean scores that were negatively skewed, denoting values heavily tailed toward positive confidence. An examination of the individual items within each subscale illuminated specific areas in need of intervention: (a) accepting when there is no curative treatment, (b) advising patients about making decisions about their treatment, and (c) maintaining a relationship when the patient is angry.

Research Question 4. What is the intention of EMS providers in the sample to provide patient-centered care to people experiencing opioid addiction and overdose?

Descriptive statistics revealed that EMS providers in the state of Maine intended to provide patient-centered care to people experiencing OAO. The overall Intention (sum) score for intention was positive. An examination of individual items revealed a statistically significant negative shift from confidence to the likelihood of performing the same behavior with people experiencing OAO. Moreover, this examination indicated specific areas in need of intervention: (a) make patient experience me as empathetic, (b) make patient feel I am genuinely interested in what he/she thinks about her situation, (c) advise and support patient in making decision about treatment, and (d) reach agreement about treatment plan.

Research Question 5. Can demographic factors predict EMS providers' attitudes toward opioid and opioid addiction, and self-efficacy in providing patient-centered care?

The null hypothesis stated that demographic factors cannot be used to predict neither EMS providers' attitudes toward providing patient-centered care to people with opioid addiction nor their self-efficacy in patient-centered care. This means there were no relationships between the demographic factors and the predictor (independent) variables in this study. The alternate hypothesis stated that there is a relationship between respondent demographics and their attitude and self-efficacy mean scores, and this relationship predicts mean scores on the attitude and self-efficacy subscales.

Demographic background factors were examined for their predictive relationship to the attitude and self-efficacy scales as proposed in the TPB. Four demographic

variables were identified as having a statistically significantly relationship to the predictor variables. EMS providers' *education* and *license levels* significantly predicted job satisfaction. As each of these levels increases, mean scores for job satisfaction also increases. Higher license levels also predicted higher confidence in the sharing information and power subscale. An EMS provider's *gender* significantly predicted mean scores for exploring patient perspective, sharing information and power, and dealing with communicative challenges. Mean scores on each of these subscales was significantly higher for respondents identifying as female. EMS provider longevity had a negative predictive relationship with confidence in exploring the patient perspective. As *years of service* increased, confidence in exploring patient perspective decreased.

The aforementioned statistically significant relationships thus supported the alternate hypothesis that demographics can be used to predict EMS providers' attitudes toward opiates and opiate addiction as well as self-efficacy in patient-centered care. Thus, the null hypothesis stating there is no relationship was rejected.

Research question 6. Are EMS providers' attitudes toward opioids and opioid addiction and self-efficacy in providing patient-centered care related to intention to provide patient-centered care to people experiencing OAO?

The null hypothesis for this research question stated that EMS providers' attitudes toward opioids and opioid addiction and self-efficacy in providing patient-centered care do not predict behavioral intention to provide patient-centered care to people experiencing OAO. The alternate hypothesis states that EMS providers' attitudes toward opioids and opioid addiction and self-efficacy in providing patient-centered care are related to the intention to provide patient-centered care to people experiencing OAO.

A multiple regression analysis was employed to predict intention. The fitted model identified four predictor variables significantly correlated with intention: job satisfaction, exploring patient perspective, sharing information and power, and dealing with communicative challenges. The regression model resulted in a significant F value that exceeded the critical F statistic, thus confirming the predictive value of the coefficients (predictor variables). As shown in Table 14, four predictor variables had a significant correlation with intention. These results clearly demonstrated that attitude toward opioid and opioid addiction and self-efficacy in patient-centered care predicted intention, leading to a rejection of the null hypothesis and acceptance of the alternate hypothesis.

Post-survey Communication

An unintended outcome of this research was the receipt of numerous post-survey communications from EMS providers across the state of Maine. These unsolicited communications came in the form of phone calls, emails, and face-to-face dialog. The content and context of these communications mirrored the results of the Preliminary study. They also revealed more nuanced details of the interplay among the predictor variables and the complexities of prehospital care of people experiencing OAO.

Concerns about this study's ability to capture the complexities of treating people with OAO in the prehospital setting were raised in the more than 300 communications received from EMS providers who wished to share their lived experience in caring for this demographic of patient. It should be noted that these unsolicited communications originated from currently licensed EMS providers in the state of Maine utilizing to the

IRB contact information provided in the survey. These communications are provided here as additional evidence of the complexities of providing patient-centered care to people experiencing OAO in the prehospital setting. They also serve to illuminate the need for a phenomenological study of EMS providers' lived experience to further highlight areas in need of intervention and future research.

Post-survey communications were generated from providers who self-reported having completed the anonymous survey as well as others who self-reported that they chose not to complete the survey out of concern that the study would "make us [EMS providers] look bad if we answer the questions honestly." This specific concern offered a potential explanation for the observed difference in the number of respondents meeting the inclusion criteria but not completing the survey (n = 304), and the number of providers who completed the survey (n = 765). This specific concern also illuminated potential report bias in the results and may explain the negatively skewed (right-handed) distribution of intention scores. Social desirability bias is common in social science research that examines sensitive and politically charged topics. Social desirability bias means that respondents may have felt compelled to answer questions in a way they thought would lead to viewing EMS providers in a more positive light.

The most commonly expressed view in these communications was a strong desire (intent) among EMS personnel to provide the highest standard of care to people experiencing OAO. This was consistent with the finding of this study that showed that EMS providers in the state of Maine intended to provide patient-centered care to people experiencing opioid addiction. The second most commonly expressed view was that of angst and shame about the gap existing between what providers intend to do and what

might actually transpire given the nuances of a specific patient encounter. These communications highlighted the varied challenges of these patient-provider encounters and a need for intervention to further support the EMS providers' role in caring for people with OAO.

These communications also conveyed the complexity of multi-agency response to overdose calls, referring to the role and responsibilities of EMS providers, as compared to that of law enforcement. People fearful of the legal consequences of drug possession are less likely to call 9-1-1 and are "often resistant to intervention." Providers' reported encountering patients who were "in denial that anything happened" and "get really mad and aggressive." The ability to hold a patient-centered care stance becomes increasingly difficult with the need to restrain patients at risk of harming themselves and others. These communications also conveyed that while a police response is "critical for safety reasons" and "changes the atmosphere for EMS providers and patients," it also becomes "really hard for me to be as compassionate as I would with other patients" because the atmosphere is "more adversarial." The disposition of "authority" makes it incredibly difficult to maintain a stance of sharing information and power with the patient.

The communications from providers expressed concern over the stress associated with responding to the increased volume of calls for drug overdose and overdose deaths. They reported feeling like "we're not helping, they just go back and do it again" and "Narcan is a Band-Aid," and they stated that they felt their "efforts to help were wasted." A commonly held belief, shared in formative Belief Survey, was echoed in these communications: the EMS role is short-term stabilization of the patient and does not affect motivation to seek and access treatment. This felt sense that anything beyond

emergent stabilization is "not my job" speaks to a need for expanded role legitimacy. These same communications frequently reported that "EMTs are often given little information on how to be helpful" beyond administering Narcan. This concern speaks to the need for enhanced preparation (role adequacy) in providing care to this demographic of patients.

Communications also conveyed concern over other providers' interpersonal dispositions during patient interactions, and their ability to influence a more compassionate attitude among fellow providers. Contact with frequent service users may be "associated with a negative viewpoint" and "it's hard to mask it." Not only does it affect patients negatively, but it also "impacts the team interaction." While some providers reported that frequent service users "do receive less compassionate treatment and less therapeutic attitudes" and "they are often treated very brusquely at best," this is in contrast to other reports that both EMS providers and law enforcement "show compassion, and respect" to people experiencing OAO. These same reports conveyed that the patients in these compassionate encounters "talked about their drug use and treatment." The difference between these patient encounters highlights a need for greater role support from colleagues to help them perform their role effectively. It also indicates a need for additional research to explore the background factors, core beliefs, and subjective norms of the EMS provider groups and what factors influence the actual control of a compassionate approach to patient care reflective of patient-centered care.

EMS provider disposition is also influenced by secondary trauma. Providers reported having been "assaulted by patients in the past," "becom[ing] hardened" or experiencing "compassion fatigue after too many failed resuscitation attempts." The fear

of the emergence of Carfentanyl and other opiate analogues, and the potential lethal risk of exposure to EMS, serves only to exacerbate the complex dynamics of providing quality care for people experiencing OAO in the prehospital setting. Additional research is needed to explore the need for mental health resources and protection from abuse to support EMS providers and keep them safe.

A nuanced judgement of the etiology of addiction was also communicated. Some providers expressed empathy for those addicted to opioids secondary to prescribing practices of physicians and addiction resulting from medications prescribed for a "legitimate medical condition". Providers communicated that "these people" are somehow "less responsible" or "not at fault" for their addiction; unlike those that "choose to use drugs" and become addicted. The perception of choosing addiction means that "they don't deserve" the same empathy as the patient addicted to drugs due to his or her physician prescribing practices. This stratification of addiction etiology and assigning fault is a belief that primes negative attitudes toward people with opioid addiction. These conversations reflect limited knowledge of the neurobiology of genetics, ACE, and trauma histories in priming drug seeking and addiction behavior. This strongly held belief may prime attitudes that result in enacted stigma.

The combined effects of the expressed concerns mean that it can be incredibly difficult to maintain a patient-centered care stance of sharing information and power, explore the patient perspective, and deal effectively with communicative challenges. The combined effects have a bidirectional negative effect on both the patient and the provider. The patient experiences associated stigma and shame that serve only to exacerbate the underlying etiology of addiction, while chronic physiologic stress predisposes EMS

providers to burnout and PTSD. The combined effects of all these variables have a detrimental influence on job satisfaction. The passion and urgency expressed in the belief survey and post-survey communications elevate the need for additional research and intervention.

Strengths and Limitations

Given the cross-sectional design of the survey, the results highlighted associations and provided only a snapshot at a specific time. Because survey studies also limit the amount and type of data that can be collected, associations may also be difficult to interpret. While these limitations are inherent in this research design, the researcher took multiple steps to overcome these limitations and ensure a rigorous research study. Rigor was established by the use of Creswell's (2014) established methods for quantitative cross-sectional survey study designs, and Chatterji's (2003) process model for instrument design and evaluation as well as Chatterji's "rules for self-report measures" (pp. 263-286).

While this research did not intend to claim any cause or effect relationship, it explored associations between hypothesized predictors and intention. Upon completion of the literature review and identification of the TPB to provide a strong theoretical background, the researcher generated research questions. These research questions were carefully worded in an effort to make sure that the survey design and data collection methods supported a complete and accurate analysis of providers' attitudes and self-efficacy. A preliminary focus group study, consisting of members of the population, provided insight into the internal and external background factors relating to the research

questions. These initial steps provided the foundation for a rigorous research design and construct validity.

Construct reliability was supported by the selection of instruments that were previously psychometrically validated and demonstrated strong internal consistency. These attributes establish the validity of survey results. Instrument subscales included in this study reported Cronbach's alpha equal to or greater than 0.70 in prior studies. The strength of the survey instrument design, pre-data analysis, and data analysis measures (analysis of internal consistency, correlation, and regression analysis) improved analytic validity.

Cross-sectional designs are susceptible to bias due to low response rates, and results from non-participants may reflect a substantially different outcome. The use of the state of Maine EMS email system and reminder notifications facilitated a high response rate. The use of the state of Maine EMS email system ensured that all currently licensed EMS providers in the state of Maine received an email with the survey link. A power analysis was conducted prior to data analysis to confirm that the large response rate (n > 200) had enough statistical power to identify relationships accurately when they exist (avoid Type II error). This large response rate increased the likelihood that the sample was representative of the population. Additionally, the "inclusion criteria" question was used in the survey to ensure that the respondents were from the study population.

Self-report survey responses may also not be an accurate reflection of the participants' attitude and self-efficacy with respect to providing care to people with opioid addiction. The use of a preliminary study to inform the design of the survey and

selection of psychometrically validated survey instruments helped to ensure that outcome measures were accurate reflections of the providers' attitude and self-efficacy. Participants may also choose to indicate a generally acceptable norm of society rather than their own attitude and self-efficacy, which may lead to imprecision in the final data set.

The side-by-side presentation of the self-efficacy and intention survey items within the survey is another limitation. While this design was selected to reduce the time required to complete the survey, a side-by-side presentation is a common method variance limitation potentially inflating the correlations between the measures of self-efficacy and intention. The researcher addressed this limitation by including survey instructions that encouraged participants to respond as accurately as possible.

The standard procedure for measuring personal attitudes and self-efficacy includes a number of safeguards to minimize any potential motivational effects of self-assessment. These "safeguards were built into the instructions and the survey administration" (Bandura, 2006, p. 314). Attitude and self-efficacy judgments were "recorded privately without personal identification to reduce social evaluative concerns" (p. 314). Surveys were also coded by number rather than by name. Respondents were informed that their "responses will remain confidential." Each of the scales were "labeled using a nondescript title" such as "Appraisal Inventory" rather than Attitude or Self-Efficacy. To encourage honest and frank responses, the researcher explained to the respondents "the importance of their contribution to the research" (p. 314). Respondents were informed that "the knowledge it provides will increase understanding of and guide

the development" of tailored professional development programs designed to enhance how EMS providers care for people with opioid addiction (Bandura, 2006, p. 314).

Three background factors not evaluated by this research which may have influenced the results of this study are: (a) previous knowledge and experience with patient-centered care; (b) previous personal experience with opioid use, misuse, addiction, and overdose; and (c) cross-training in an allied healthcare field such as physician, nurse, pharmacist. The omission of these demographic variables is a limitation of this study. As previous TPB research conveyed, each of these may mediate predictors of intention (Perkins et al., 2007).

Implications for Research, Practice, and Policy

Epidemic rates of opioid deaths across the nation highlight the urgent need to identify all possible avenues of intervention in order to save the lives of those addicted to opioids and opioid analogs. The American Medical Association (AMA) has identified stigma as a leading antagonist in the campaign to mitigate the growing epidemic of opioid deaths. Stigma is a social determinant of health that serves only to magnify health inequities experienced by people with opioid addiction. In rural communities, stigma magnifies social isolation and decreases buy-in and motivation to seek medical and mental health services.

Patient-centered care approaches reduce stigma in the patient care experience. They facilitate rapport building, neurobiology of engagement, and motivation to explore treatment. Patient-centered care requires that healthcare providers have the knowledge,

skills for therapeutic communication and how to communicate with and advise about

opioid addiction and associated risk factors. Motivational Interviewing is a practical,

evidence-based approach to accomplish patient centered care (Elwyn et al., 2014).

Effective patient-centered care, in the context of opioid addiction, also requires

knowledge of the medical definition of addiction, including the role that genetics, adverse

childhood experiences (ACE), and mental illness play in priming and sustaining

addiction. Providers of patient-centered care are skilled in evidenced-based techniques

for exploring perspective, sharing power, and navigating challenging interpersonal

encounters. The task for individual providers will be to develop the knowledge, skills,

and disposition of patient-centered care. The task of various stakeholders will be to

prioritize patient-centered care as a core competency for the prehospital care of people

with OAO at all license levels. These efforts must include define of how patient-centered

care is operationalized and measured in the prehospital setting, and expanded

opportunities for professional development to improve the delivery of services.

The results of this study showed that EMS providers in the state of Maine find

calls for drug overdose to be challenging to navigate and generate concern for personal

safety. The results also revealed that EMS providers at all license levels may benefit from

expanded approaches that support exploring the patient perspective and sharing

information and power. The results of this research provide definitive evidence of the

need for education intervention to support a patient-centered care approach to the

treatment of OAO in the prehospital setting. Such an intervention would include an

expanded knowledge base and skill set to support patient-centered care as a core

competency for EMS providers in the state of Maine.

Research examining healthcare provider intention to perform a behavior with patients is limited. The vast majority of TPB studies have examined patient behavior (Perkins et al., 2007). The limited number of studies have provided nuanced insight and support of the findings in this research. Perkins et al. conducted a meta-analysis of 19 journal articles that described 20 research studies detailing the TPB and its effect on physicians, nurses, pharmacists, mental healthcare providers, and other healthcare workers. Consistently, the relative importance of constructs of the TPB and the constructs' correlation to intentions varied according to the particular behavior being studied (p. 344). Attitudes toward a specific group of patients (e.g., sexually active teens and HIV-positive patients) were found to be the strongest predictor of experienced providers. Attitude was also found to be the strongest predictor of intentions in a study of physicians' use of guidelines for patient care (p. 344). This is consistent with the finding that EMS providers' negative attitude toward opiates and opioid addiction decreased intention to provide patient-centered care to people experiencing OAO. Personal experience with the group was a background factor influencing motivation to learn the behavior. Social norms were a stronger predictor of inexperienced doctors and nurses. Self-efficacy was a strong predictor of the drug-prescribing practices of physicians, pharmacists, and nurses (p. 344; Armitage & Conner, 2001). For many providers in the studies, high self-efficacy and negative attitudes toward implementing the goal behavior were prominent. Perkins et al. recommended that in this situation, an intervention would focus on provider attitudes (assuming a strong correlation between attitude and intention) (p. 345). This might include continuing education that includes the science behind the goal behavior as well as the possible benefits to the patients, the providers, and the

organization (p. 345). The goal would be to deliver an intervention that impacts a mediator (attitude, social norm, self-efficacy) which would prompt intention to perform the goal behavior (p. 345). Given the scientific support of the TPB in understanding intention and behavior, it is recommended that more research be conducted to explore healthcare provider behavior (Perkins et al., 2007).

Motivational interviewing is presented as an evidence-based approach with both "practical and well-described methods to accomplish patient-centered care" (Elwyn et al., 2014, p. 270). EMS providers sometimes struggle with a concern about how to communicate appropriately with people experiencing OAO, which contributes to reduced job satisfaction. While Motivational Interviewing (MI), developed by William Miller, is best known as a counseling style used to support behavior change, the spirit of MI is a collaborative way of being with patients that maintains their autonomy. This way of being includes the expression of CARE for patients and their life situation. Educating and expanding the skill set of EMS providers in basic MI approaches such as the OARS (Open-ended questions, Affirmation, Reflect, and Summarize) will help facilitate rapport building and exploring the patient perspective.

Providing patient-centered care requires EMS providers who are able to recognize that different patients require different approaches, and "are skilled enough to adapt and, where needed, integrate methods" (Elwyn et al, 2014, p. 274). Thus, integrative methods for the development of self-leadership and awareness of implicit biases are critical to the development of a patient-centered care practice. A defining trait of a patient-centered EMS provider is the ability to make decisions, choreograph scenes, and treat people well even when it is hard (Allen, 2014). Mindful Action Practices (MAP) incorporate human

performance strategies for self-leadership that disrupt implicit bias and enacted stigma. MAP supports closing the gap between what EMS providers *intends* to do and what they actually do. Self-leadership is a commitment to do and be their best, knowing that "best" will look different on any given day depending on internal resources such as sleep, food, and sense of safety. It's not about perfection, rather a willingness to show up and try again and again. A patient-centered care approach with enhanced MAP will have a bi-directional positive effect for both the patient and the provider. Providers will feel more prepared and navigate challenging patient encounters with greater ease; increase job satisfaction because they feel they are having a short-term positive impact; and positively influence long-term, downstream health outcomes. Patients will experience the EMS provider as someone who genuinely cares about them and their life situation. The lack of stigma, bias, and shame in the patient experience down-regulates fight, flight, or freeze responses and primes neurobiology for enhanced receptivity and engagement in dialogues exploring what treatment and recovery might look like for them.

The continued development and expansion of the community paramedicine initiative is a critical effort in mitigating opioid deaths in rural, underserved communities. Community paramedicine can be seen as a community-building approach to mitigating the opioid overdose epidemic. With their enhanced training in mental health, trauma informed care, and addiction, individuals practicing community paramedicine are uniquely qualified and in a unique environment to elicit meaningful change in the communities they serve.

Recommendations

1. Development of an education intervention to build and sustain patient-centered care. This intervention will include: the medical definition of addiction; direct, positive experiences with people and families experiencing opioid addiction; direct instruction and skills practice in patient-centered care; and human performance strategies to increase awareness of conditioned biases and the ability to suspend judgment while providing patient care. Motivational Interviewing is recommended as a means of developing proficiency in therapeutic communication, a core competency of patient-centered care.

    a. Conduct pre- and post-test research on the intervention's ability to shift intention toward the goal behavior.

    b. Develop a TPB-based assessment tools that identify an individual's strengths and areas in need of growth. The assessment would be used to support the delivery of the education intervention, self-study, and provide iterative feedback to the healthcare provider. It is essential that the delivery of the assessment and intervention be framed using a growth mindset in order to ignite and maintain motivation to comply with the goal behavior.

    c. Develop a train-the-trainer program for patient-centered care to facilitate widespread adoption of patient-centered care as the standard of care in the prehospital setting.

2. Require patient-centered care as a required skill to meet the competency of therapeutic communication for licensure in the state of Maine and for National Registry EMS providers. This policy change requires that current entry-level textbooks and

curricula be updated to include core competencies of patient-centered care.

     3. Incorporate therapeutic communication in the existing skills testing stations for terminal testing prior to licensure. Similar to existing testing procedures, examinees must demonstrate a minimum number of critical skills to demonstrate proficiency of the therapeutic communication standard.

     4. Expand existing quality assurance measures to include therapeutic communication.

     5. Conduct a phenomenological study of EMS providers lived experiences in the care of people with opioid addiction.

Summary

The current study underscored the urgency for mitigating enacted stigma in patient-provider encounters in saving the lives of people experiencing opioid addiction. This patient-provider workspace has the potential to influence people's feelings of self-worth, down-regulate shame, and prime intrinsic motivation to seek treatment. The quality of this encounter, the relationship between the patient and EMS provider, will help to close the addiction treatment gap that exists in the state of Maine. Development of evidence-based interventions to disrupt stigma in the prehospital patient care environment is the primary recommendation of this research.

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Appendix A

IRB Approval Letter

TEACHERS COLLEGE
COLUMBIA UNIVERSITY

Teachers College IRB	Exempt Study Approval

To: Denise Allen
From: Amy Camilleri
Subject: IRB Approval: 17-308 Protocol
Date: 05/15/2017

Thank you for submitting your study entitled, "*Measure of Behavioral Intention to Provide Patient-Centered Care to Patients with Opioid Addiction/Overdose Among Emergency Medical Service Providers In the State of Maine*;" the IRB has determined that your study is **Exempt** from committee review (Category **2**) on 05/15/2017.

Please keep in mind that the IRB Committee must be contacted if there are any changes to your research protocol. The number assigned to your protocol is **17-308**. Feel free to contact the IRB Office by using the "Messages" option in the electronic Mentor IRB system if you have any questions about this protocol.

Please note that your Consent form bears an official IRB authorization stamp and is attached to this email. Copies of this form with the IRB stamp must be used for your research work. Further, all research recruitment materials must include the study's IRB-approved protocol number. You can retrieve a PDF copy of this approval letter from the Mentor site.

Best wishes for your research work.

Sincerely,
Amy Camilleri
IRB Administrator
accamilleri@gmail.com

Attachments:
 • protocol 4393 survey consent .pdf

Appendix B

Letter of Endorsement to Conduct Research Study With State of Maine EMS

January 23, 2017

Teacher's College
Columbia University
525 West 120th Street
New York NY 10027

To whom it may concern:
On behalf of Maine Emergency Medical Services, I am writing to endorse the research of Denise R. Allen. We are happy to support her project, and look forward to collaborating with her on her research.

If you should have any questions, please feel free to contact me.

Sincerely,

Shaun St. Germain
Director, Maine EMS

Appendix C

Authorization to Use SEPCQ-27 Instrument

UNIT for PSYCHO-ONCOLOGY and HEALTH PSYCHOLOGY

Enhed for Psykoonkologi og Sundhedspsykologi

Department of Oncology, Bartholins Allé 9, 1340
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Robert Zachariae, Director, Professor, MSc., DMSci
Phone: +45 871 65878 - Email: bzach@aarhus.rm.dk

Jan 09, 2017

Denise Allen, Med, EdD(c)
Teacher College Columbia University

Dear Denise Allen

You have our permission to use the Self-Efficacy in Patient Centeredness Questionnaire
(SEPCQ-27) for your research. I enclose the questionnaire with scoring instructions. When
you have completed your project, we would pleased if you could forward your results to us.

Good luck with your research

On behalf of the authors

Robert Zachariae

Appendix D

Authorization to Use DDPPQ Instrument

JOHN WILEY AND SONS LICENSE
TERMS AND CONDITIONS

Jan 27, 2017

This Agreement between Denise R Allen ("You") and John Wiley and Sons ("John Wiley and Sons") consists of your license details and the terms and conditions provided by John Wiley and Sons and Copyright Clearance Center.

License Number	4037171020618
License date	Jan 27, 2017
Licensed Content Publisher	John Wiley and Sons
Licensed Content Publication	Addiction
Licensed Content Title	Staff attitudes towards working with drug users: development of the Drug Problems Perceptions Questionnaire
Licensed Content Author	Hazel Watson,William Maclaren,Susan Kerr
Licensed Content Date	Dec 13, 2006
Licensed Content Pages	10
Type of use	Dissertation/Thesis
Requestor type	Author of this Wiley article
Format	Print and electronic
Portion	Full article
Will you be translating?	No
Title of your thesis / dissertation	Measure of Behavioral Intention To Provide Patient-Centered Care To People With Opioid Addiction Among Emergency Medical Service Providers in the State of Maine
Expected completion date	Sep 2017
Expected size (number of pages)	250
Requestor Location	Denise R Allen
6 Sulky Way

WINDHAM, ME 04062
United States
Attn: Denise R Allen |

Appendix E

Preliminary Study

Preliminary Study Summary

A three-member (expert) group was assembled to content validate the construction and selection of instruments and subscales for inclusion in the final statewide survey instrument. Each person in the group is state of Maine licensed EMS provider with 10+ years of experience. While they are part of the population of study, they did not participate in the statewide survey study of behavioral intention. Participants in the preliminary study were given a description of the target behavior and are asked a series of open-ended (free-response) questions designed to elicit accessible beliefs. This study included open-ended, free response questions scripted to elicit EMS providers' salient beliefs that influence their intention to provide patient-centered care to people with opioid addiction. The preliminary study belief survey was administered currently licensed EMS providers representing each of the six EMS regions in the state of Maine. A non-probability, purposive sampling method was used for the dissemination and collection of survey responses. The three group (expert) members sent out the survey link via email, and social medial. When a sample size of 30 and representation from each EMS region were met, the survey was closed. See Appendix G for a review of BS demographics. NVivo v. 11 qualitative analysis software was used for coding and identification of themes (nodes). See Table A2 for a summary of the coded responses.

PART A: Belief Survey (BS) Focus Group Questions

The following eight questions were based upon Ajzen's (2006a) TPB predictor variables:

1. <u>Attitudes</u>: behavioral beliefs and outcome evaluation

> (Q 1,3) What do you believe are the short-term advantages/disadvantages of
> providing patient care to people with opioid addiction/overdose in the prehospital
> setting?
>
> (Q 2,4) What do you believe are the long-term advantages/disadvantages of
> providing patient care to people with opioid addiction/overdose in the prehospital
> setting?

2. <u>Social Climate Surrounding Subjective Norms</u>: normative beliefs, and motivation to
comply

> (Q5) What do you believe is the motivation to provide patient-centered care to
> patients with opioid addiction/overdose in the prehospital setting?
>
> (Q6) What do you believe would decrease motivation to provide patient-centered
> care to patients with opioid addiction/overdose in the prehospital setting?

3. <u>Perceived Control</u>: knowledge, self-efficacy, resources.

> (Q7) What do you believe makes it difficult for people to provide patient-centered
> care to people with opioid addiction/overdose in the prehospital setting?
>
> (Q8) What do you believe would make it easier for you to provide patient-
> centered care to people with opioid addiction/overdose in the prehospital setting?

PART B: Demographic: Frequency Distribution Tables

Table A1: Demographic Frequency Distribution - Sample Demographics, N=30

Demographic Factor	level	*f*	Rel. *f*
License Level	AEMT	3	.100
	EMT Basic	5	.167
	First Responder EMR	1	.033
	Paramedic	21	.700
Service Region	Aroostook	1	.033
	Kennebec Valley	2	.067
	Mid Coast	3	.100
	Northeastern	1	.033
	Southern Maine	20	.667
	Tri County	3	.100
Service Role	Member / provider	19	.633
	Managing EMS officer	11	.367
Gender	Female	6	.200
	Male	24	.800

PART C: Survey Results

Several important themes emerged from an analysis of the survey responses. First, it is clear that for this population of EMS providers, the objective norms of state of Maine EMS Law and protocols are a driving force (external factor) influencing the behavior of EMS providers. This was observed by several comments conveying that patient care is their "*job*" and protocols dictate their behavior. However, several comments refer to a lack of direction for patient-centered care within the current protocols and that it is not a performance expectation. This was seen in comments such as "*Not really a focus for me*" and "*If Maine EMS* [governing body providing oversight] *required patient-centered care and mandated compliance* [via protocol]." These comments speak to the extent that providers believe patient-centered care is their responsibility and is an expected performance behavior. The "motivation to comply" with the state law, policies, and protocols (objective norms) is the perceived operating social climate among EMS providers in the state of Maine. This means that for EMS providers, their "*duty to act*" outweighs subjective norms of the larger community they serve.

Additional responses point to a need for additional education and training to support providers and increase their self-efficacy in patient-centered care. Several respondents mentioned a lack of knowledge of patient-centered care, and the need for training. This was observed in comments such as, "*I don't think you can motivate people [providers] to do something when it's not in their DNA*" and *"if it really helps them, then let's do it - anything is better than what we are doing now*." These comments suggest that EMS providers require more knowledge of a patient-centered approach, that it can be cultivated, and is beneficial to patients with opioid addiction/overdose. Additional

comments such as *"I would think Maine EMS would have to be on board and it would come from them, and they would provide us training,"* suggesting that providers do not feel adequately prepared and seek more guidance and direction from Maine EMS. These responses reflect a perceived gap between role legitimacy (it's our responsibility) and role adequacy (I'm adequately prepared to do this part of my job), and role support (I have what I need to perform effectively). EMS provider stress is very evident in the BS responses; they reported that the *"frequent flier"* or *"repeat offender"* reflect a sense of frustration and hostility, toward responding to multiple calls for drug overdose…

> *I think there is a level of frustration. Its taxing to get to a call for overdose of a repeat offender i.e. 3+ Narcan revivals with children present with the needle still in a vein! Its taxing we are seeing more dead people, telling more families that the loved one in the other room has died. That is huge stress and it's getting to some people.*

Additional comments reflect frustration perhaps fueled by a lack of understanding that addiction is a disease...

> *In my career, I can feel the apathy and anger towards the habitual addict and in a lack of words wasting my time and skills for your senseless actions to try and save you when a truly sick person may need me,"* and *"As much as I want to still save the world, sadly the realization in my mind is that a percentage of the population doesn't seem to care if they live to see the next sunrise."*

Each of these comments convey a gap in role support, satisfaction, and adequacy, and point to a critical for more education, support, and training. Improving provider attitudes toward providing care to people with opioid addiction, and enhancing their self-efficacy

in patient-centered care will require the support of the state of Maine EMS board, and

subsequent policy and protocol changes.

Table A2: Thematic coding and frequency of beliefs among State of Maine EMS providers toward providing patient-centered care to people with opioid addiction/in the prehospital setting (part I) (N=30).

BELIEF	QUESTION	NODE	f
Attitude	Short & Long Term Advantage of providing care	• Save a Life, Narcan • Treatment and recovery • Cooperation and rapport • Pride / Care	28 21 16 05
	Short and Long Term disadvantage of providing care	• Burden Resources (time, financial, people, EMS) • Temporary fix (False sense of safety, Enable drug seeking/overdose) • Provider stress, burnout, apathy, frustration • None	20 17 12 05
BELIEF	**QUESTION**	**NODE**	f
Normative	Increase Motivation to provide PC	• Objective Norm (Its our Job to provide medical care, Protocol, law) • Social climate (help people, part of the solution, more effective in helping people) • IF PC were expected • Subjective norm (job is medical care not mental care) • Prefer not to comment	25 11 07 06 04

Table A2 (continued)

BELIEF	QUESTION	NODE	*f*
	Decrease Motivation to provide PC	• Objective Norm (Nothing, its our Job to provide medical, Protocol, law)	19
		• Patients, repeat, drug seeking, violent, mental illness, no consequence	23
		• PC is not in protocol, not measured/ expected	10
		• Not everyone has that PC skill	06
BELIEF	**QUESTION**	**NODE**	*f*
Perceived Control	Easier - Increase confidence in PC	• Put in Policy (protocol, treatment guidelines, buy-in)	27
		• Provide Education, training	25
		• More resources (time, people, financial)	19
		• If PC were expected	12
		• Role for Community Paramedic	09
	Difficult - Decrease confidence in PC	• Patient (Repeat patients, challenging patients, mental illness)	23
		• Lack of resources, accessible training and knowledge	14
		• Not in protocol, not required practice	12
		• Stress, burnout, frustration	08

Appendix F

Teachers College Informed Consent

CONSENT FOR PARTICIPATION IN MAINE EMS STUDY

INTRODUCTION
You are being invited to participate in this research study called "Measure of Intention to Provide Patient-Centered Care to Patients with Opioid Addiction/Overdose Among Emergency Medical Service Providers in the State of Maine." You may qualify to take part in this research study because you are a licensed EMS provider in the state of Maine. Approximately 6,000 people will participate in this study and it will take no more than 30 minutes of your time to complete.

WHY THIS STUDY IS BEING DONE
This study is being done to determine EMS providers attitudes toward opioid drugs and opioid addiction, self-efficacy in providing patient-centered care, and your intention to provide patient-centered care to patients with opioid addiction/overdose.

WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY?
Participation involves filling an online survey that will take up to 30 minutes.

WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY?
The principal investigator is taking precautions to keep your information anonymous and prevent anyone from discovering or guessing your identity. Your responses will be anonymous; as no identifying information such as your name, email address will be collected. All data is stored in a password protected electronic format. The survey questions will be about your experience and confidence in providing patient care to people with opioid addiction/overdose.

WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY?
There is no direct benefit to you for participating in this study. Participation may benefit the field of Emergency Medical Service Providers to better understand how to further support providing high quality patient care.

WILL I BE PAID FOR BEING IN THIS STUDY?
You will not be paid to participate. There are no costs to you for taking part in this study.

Teachers College, Columbia University
Institutional Review Board
Protocol Number: 17-308
Consent Form Approved Until: No Expiration Date
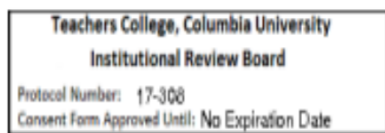
WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS?
The study is over when you have completed the survey. However, you can leave the study at any time even if you haven't finished.

PROTECTION OF YOUR CONFIDENTIALITY
The investigator will keep all electronic survey results in a password protected file on a password protected computer. Regulations require that research data be kept for at least three years.

HOW WILL THE RESULTS BE USED?
The results of this study will be published in journals and presented at academic conferences. No identifying information will be collected, and thus participant anonymity is retained in published materials.

WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY?
If you have any questions about taking part in this research study, you should contact the principal investigator, Denise Allen at 207-329-0026 or at dra12@tc.columbia.edu or the faculty advisor, Dr. Fullilove at 212-305-019.

If you have any questions about this survey, please contact Teacher's College - Columbia University Institutional Review Board (IRB) office at 212-678-4105 or email IRB@tc.edu. You may also write to the IRB at Teachers college, Columbia University, 525 W. 120th Street, New York, NY 10027.

PARTICIPANT'S RIGHTS
- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty.
- The researcher may withdraw me from the research at his or her professional discretion; such as in the event that I do not meet the inclusion criterion.

ELECTRONIC CONSENT:
Clicking on the "agree" button below indicates that:

Teachers College, Columbia University
Institutional Review Board
Protocol Number: 17-308
Consent Form Approved Until: No Expiration Date

- You have read the above information
- You voluntarily agree to participate
- You are at least 18 years of age
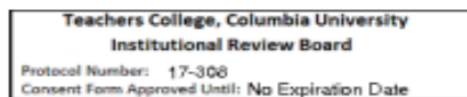
If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

- agree
- disagree

Appendix G

Survey Instrument and Measures

Inclusion Criteria

1. Are you a licensed Emergency Medical Service (EMS) provider in the state of Maine?
(*EMS provider is defined as: First responder, EMT, Advanced EMT, and Paramedic*)
Yes
No

Part I: Drug and Drug Problems Perception Questionnaire (DDPPQ) **(**Watson et al., 2006**)**

Instructions: Please read each statement carefully and indicate how much you agree or disagree with each of the following statements about opiates and opiate addiction/overdose. Please answer all questions and answer as honestly and sincerely as possible.

You will use the following scale to rate how much you agree or disagree with each statement:

strongly agree_____strongly disagree
                    1   2   3   4   5   6   7

Table A3. DDPPQ Scale Items.

#	Item	Scale
1	I have a working knowledge of opiate drugs and drug related problems.	1 2 3 4 5 6 7
2	I know enough about the causes of opiate drug problems to carry out my role when working with opiate users.	1 2 3 4 5 6 7
3	I know enough about the physical effects of opiate drug use to carry out my role when working with opiate drug users.	1 2 3 4 5 6 7
4	I know enough about the psychological effects of opiate drugs to carry out my role when working with opiate drug users.	1 2 3 4 5 6 7

5	I know enough about the factors that put people at risk of developing opiate drug problems to carry out my role when working with opiate drug users.	1 2 3 4 5 6 7
6	I know how to counsel opiate drug users over the long-term.	1 2 3 4 5 6 7
7	I can appropriately advise my patients about opiate drugs and their effects.	1 2 3 4 5 6 7
8	I have the right to ask patients questions about their opiate drug use when necessary.	1 2 3 4 5 6 7
9	I have the right to ask a patient for any information that is relevant to their opiate drug problems.	1 2 3 4 5 6 7
10	If I felt the need I could easily find someone with whom I could discuss any personal difficulties that I might encounter when working with opiate drug users.	1 2 3 4 5 6 7
11	If I felt the need I could easily find someone who would help me clarify my professional responsibilities when working with opiate drug users.	1 2 3 4 5 6 7
12	If I felt the need I could easily find someone who would be able to help me formulate the best approach to an opiate drug user.	1 2 3 4 5 6 7
13	I am able to work with opiate drug users as well as other patient groups.	1 2 3 4 5 6 7
14	In general, one can get satisfaction from working with opiate drug users.	1 2 3 4 5 6 7
15	In general, it is rewarding to work with opiate drug users.	1 2 3 4 5 6 7
16	In general, I feel I can understand opiate drug users.	1 2 3 4 5 6 7

Table A4. DDPPQ Subscale Items.

Subscale	Items
Role Adequacy	1, 2, 3, 4, 5, 6, 7
Role Support	10, 11, 12
Job Satisfaction	13, 14, 15, 16
Role Legitimacy	8, 9
Total	0 - 16

PART II: Self-Efficacy in Patient Centeredness Questionnaire (SEPCQ) (Zachariae et al., 2015)

Instructions: In the following, a number of statements describing different aspects of how EMS providers can relate to and communicate with patients are presented. Please read each statement carefully and answer all questions and provide your best assessment of how confident you are in your ability to perform the skills with patients in general, AND how likely you are to perform these skills with opioid addicted patients. Each question requires two separate responses. Please answer as honestly and sincerely as possible.

LEFT Scale
You will use the following scale to rate how confident you are in performing the skill

very   very
Low _____High
         1   2   4   4   5

RIGHT Scale

You will use the following scale to rate your intention to do the following behaviors with opioid addicted patients.

Extremely Unlikely_____Extremely Likely

            1   2   4   4   5

Table A5. Summary of SEPCQ-27 and INTENTION Scale Items.

Confidence		Item	Likelihood
Very Low to Very High			Extremely Unlikely to Extremely Likely
1 2 3 4 5	1	Make the patient feel that I am genuinely interested in knowing what he/she thinks about his/her situation.	1 2 3 4 5
1 2 3 4 5	2	Record a complete medical history.	1 2 3 4 5
1 2 3 4 5	3	Accept when there is no longer curative treatment for the patient.	1 2 3 4 5

1 2 3 4 5	4	Make the patient feel that I have time to listen.	1 2 3 4 5
1 2 3 4 5	5	Recognize the patient's thoughts and feelings.	1 2 3 4 5
1 2 3 4 5	6	Reach agreement with the patient about the treatment plan to be implemented.	1 2 3 4 5
1 2 3 4 5	7	Advise and support the patient in making decisions about his/her treatment.	1 2 3 4 5
1 2 3 4 5	8	Be aware of when my own feelings affect my communication with the patient.	1 2 3 4 5
1 2 3 4 5	9	Be attentive and responsive.	1 2 3 4 5
1 2 3 4 5	10	Be aware of when the patient is scared or concerned.	1 2 3 4 5
1 2 3 4 5	11	Ensure that the patient makes his/her decisions on an informed basis.	1 2 3 4 5
1 2 3 4 5	12	Explain the diagnosis and medical treatment plan to the patient so that he/she understands.	1 2 3 4 5
1 2 3 4 5	13	Deal with my own emotional reactions when the situation is difficult for me.	1 2 3 4 5
1 2 3 4 5	14	Treat the patient in a caring manner.	1 2 3 4 5
1 2 3 4 5	15	Explain things so that the patient feels well-informed.	1 2 3 4 5
1 2 3 4 5	16	To maintain the relationship with the patient when he/she is angry.	1 2 3 4 5
1 2 3 4 5	17	Make the patient experience me as empathetic.	1 2 3 4 5
1 2 3 4 5	18	Inform the patient about any expected side effects of treatment, so the patient understands them.	1 2 3 4 5

1 2 3 4 5	19	To stay focused on what is best for the patient if there is a professional disagreement about the diagnosis and treatment.	1 2 3 4 5
1 2 3 4 5	20	Make the patient feel that he/she can talk with me about confidential, personal issues.	1 2 3 4 5
1 2 3 4 5	21	Explain how the treatment works or is expected to work.	1 2 3 4 5
1 2 3 4 5	22	Avoid letting myself be influenced by preconceptions about the patient.	1 2 3 4 5
1 2 3 4 5	23	Show a genuine interest in the patient and his/her situation.	1 2 3 4 5
1 2 3 4 5	24	Focus on compassion, care and symptomatic treatment, when there is no curative treatment.	1 2 3 4 5
1 2 3 4 5	25	Explain how the treatment is likely to affect the patient's condition, so that the patient understands.	1 2 3 4 5
1 2 3 4 5	26	Explain the treatment procedures, so that the patient understands them.	1 2 3 4 5
1 2 3 4 5	27	Separate my personal views from my approach in the professional situation.	1 2 3 4 5

* item number column will be removed in the online survey

Table A6. SEPCQ Subscale Items.

Subscale	Items
Exploring the patient perspective	1,4,5,9,10,14,17,20,23,24
Sharing information and power	2,6,7,11,12,15,18,21,25,26
Dealing with communicative challenges	3,8,13,16,19,22,27
Total	1 - 27

Part II: Socio-Demographics (SD)

1. What is your EMS license level?
   a. First Responder
   b. EMT - Basic
   c. Advanced EMT
   d. Paramedic

2. What is your position in EMS?
   a. Member or Provider (no leadership title)
   b. Managing EMS Officer (e.g. Lieutenant, Captain, Deputy Chief, Chief)

3. In which EMS region are you employed?
(If employed in more than one region, please select the region where you work most often)
   a. Southern Maine Region (Region 1)
   b. Tri County Region (Region 2)
   c. Kennebec Valley Region (Region 3)
   d. Northeastern Maine Region (Region 4)
   e. Aroostook Region (Region 5)
   f. Mid Coast Region (Region 6)

4. How do you identify your gender?
   a. Female
   b. Male
   c. Unknown

5. How many years have you been employed as an EMS provider?
   a. 0 - 10
   b. 11 - 20
   c. 21-30
   d. 31-40
   e. 41-50

6. What is your age?
   a. 18-24
   b. 25-34
   c. 35-44
   d. 45-54
   e. 55-64
   f. 65-74
   g. 75-84

7. How would you describe yourself?
   a. Native Hawaiian / Other Pacific Islander
   b. American Indian / Alaska Native
   c. Black / African American
   d. Hispanic / Latino
   e. White / Caucasian

8. What is your highest level of education?
   a. High school or GED
   b. Associate degree
   c. Bachelor degree
   d. Master degree
   e. Doctorate

9. Are you cross-trained in another public safety profession?
   a. Community paramedic
   b. Communications (dispatch)
   c. Firefighter
   d. Law enforcement
   e. Corrections

Debriefing Script

We thank you for your time spent taking this survey. Your response has been recorded.

Appendix H

Recruitment Email

Hello_____,

You have been selected to participate is a survey regarding EMS professionals'
experiences in providing patient-centered care to patients with opioid addiction and
overdose in the prehospital setting. The results of this survey will help us to understand
what is needed to support your work as a professional.

You have been selected to provide your personal experience. This will only take 30
minutes or less of your time. Your participation is entirely voluntary. Maine EMS does
not require participation in this survey, and there are no penalties associated with not
participating or discontinuing participation at any time. Furthermore, there are no
foreseeable risks in participation.

Your privacy is important to us, and your responses will be kept absolutely anonymous.
Only data summarizing groups of participants will be reported. If you have any questions,
or want to obtain more information about this study, please contact the principal
investigator Denise Allen, reference IRB #17-308, at dra12@tc.columbia.edu or by
phone 207-329-0026.

The time you spend answering this questionnaire can have a real impact on our
profession. If you would like to participate please **click here to start the survey**

Once again, thank you for your help!

Respectfully,
Denise Allen, NR-EMTP/FF

Appendix I

Recruitment Reminder Email

Hello _____,

About a week ago, we sent you an email inviting you to help us with a study regarding EMS professionals' experience in patient-centered care to patients with opioid addiction and overdose in the prehospital setting. Your input is important and the time you spend answering this questionnaire can have a real impact on our profession.

Please **click here to start the survey**. Once again, thanks for your help!

If you have already completed the survey, THANK YOU.

Respectfully,

Denise Allen, NR-EMTP/FF

Appendix J

Descriptive Statistics—DDPPQ Items

Table A7. Descriptive Statistics DDPPQ Items (n=739).

Item	M	SD	Range
1.	6.23	.874	6
2.	6.09	.951	6
3.	6.16	.933	6
4.	5.89	1.039	6
5.	5.75	1.116	6
6.	3.84	1.684	6
7.	5.32	1.449	6
8.	6.05	1.043	6
9.	5.79	1.169	6
10.	5.38	1.510	6
11.	5.60	1.358	6
12.	5.38	1.403	6
13.	5.84	1.257	6
14.	4.20	1.531	6
15.	3.76	1.532	6
16.	4.36	1.599	6

Appendix K

Descriptive Statistics—SEPCQ-27 Items

Table A8. Descriptive Statistics - SEPCQ-27 Items (n=739).

Item	M	SD	Range	Item	M	SD	Range
1	4.26	.737	4	20	4.45	.730	4
2	4.50	.673	3	21	4.36	.816	4
3	3.93	.976	4	22	4.31	.742	4
4	4.52	.681	4	23	4.47	.671	4
5	4.41	.678	3	24	4.47	.696	4
6	4.09	.896	4	25	4.39	.754	4
7	4.17	.898	4	26	4.43	.745	4
8	4.36	.721	4	27	4.46	.686	3
9	4.60	.575	3				
10	4.57	.593	3				
11	4.47	.691	3				
12	4.37	.829	4				
13	4.30	.816	4				
14	4.66	.564	3				
15	4.54	.629	3				
16	4.16	.794	4				
17	4.27	.778	4				
18	4.36	.800	4				
19	4.36	.775	4				

Appendix L

Descriptive Statistics—INTENTION Items

Table A9. Descriptive Statistics - INTENTION Items (n=739).

Item	M	SD	Range		Item	M	SD	Range
1	3.99	.902	4		20	4.28	.841	4
2	4.28	.912	4		21	4.24	.852	4
3	3.83	1.017	4		22	4.06	.881	4
4	4.32	.840	4		23	4.21	.835	4
5	4.16	.874	4		24	4.23	.835	4
6	3.64	1.010	4		25	4.20	.868	4
7	3.90	.999	4		26	4.23	.866	4
8	4.18	.866	4		27	4.26	.822	4
9	4.43	.754	4					
10	4.36	.745	4					
11	4.25	.830	4					
12	4.16	.921	4					
13	4.20	.878	4					
14	4.42	.771	4					
15	4.34	.771	3					
16	3.82	.982	4					
17	3.99	.902	4					
18	4.21	.845	4					
19	4.21	.861	4					

Appendix M

Diagnostic Inspection

Diagnostic inspection of the data was conducted via regression to confirm assumptions of regression. The resulting diagnostic model (R^2 = .526, F (7,764) = 120.088, p = <.001) determined that four subscales were significant predictors of intention. This model explained 52.6 % of the variance observed in intention scores.

Visual inspection of the frequency histograms for the dependent variable revealed a negative skewness indicating that scores were clustered, to the high end (right-hand side of the graph). The frequency histogram and the box plot for the Intention (dependent) variable each highlighted potential outliers in the data set. According to Tabachnick and Fidell (2014), the impact of this skewness would not have made a substantive difference in the data analysis due to the large sample size (p. 114). However, due to the presence of identified outliers in the box plot additional diagnostic analyses were run to further assess the presence and influence of these outliers.

The standardized residuals values for the dependent variable, Box-plots, Mahalanobis distances, and Cook's distances were analyzed to assess the presence and influence of the outliers. The residuals values were used to generate the standardized residuals Quantile-Quantile (Q-Q) and scatter plots. The Box-plot, Mahalanobis distances, and Cook's distance were used to identify outliers and their influence in the data set.

The assumption of normality was assessed as a prerequisite diagnostic test for additional multiple regression analyses. The visual inspection of the standardized

residuals scatter plot showed consistently random residuals around the zero intersection (Tabachnick & Fidell, 2014). The standardized residuals normal probability (Q-Q) plot in this study showed a heavily-tailed distribution, and thus did not accurately predict values at either tail or end (Tabachnick & Fidell, 2014).

Box Plot, Mahalanobis, and Cook's distances were used to identify outliers and their influence in the data set (Tabachnick & Fidell, 2014). The critical Chi-Square value $(df = 4; p = 0.001) = 18.467$ was used to determine which cases had Mahalanobis distance values that exceeded this critical value (Tabachnick & Fidell, 2014). There were 13 cases that exceed the critical value. However, according to the Cook's distances, these cases (<1) did not have undue influence on the results for the model as a whole (Tabachnick & Fidell, 2014). The time stamp for these cases reveals that the amount of time to complete the survey was less than three minutes, indicating that it is likely the respondents did not read the questions prior to entering a response. Since a clear understanding of the source of these outliers was unknown, and visual inspection of the normal probability plot for intention showed a heavily-tailed distribution the cases were marked for exclusion (Pallant, 2016; Tabachnick & Fidell, 2014).

Re-evaluation. A re-evaluation of the data (n = 739), with outliers removed, was conducted using the same diagnostic analyses used in the initial data inspection. The standardized residuals scatter plot (Figure M-1) showed consistently randomly scattered around the center (zero point) (Pallant, 2016, p. 160). The normal probability (Q-Q) plot (Figure M-2) of standardized residuals (Total Score Intention) displayed a "reasonably straight diagonal line from bottom left to top right," suggesting "no major deviations

from normality" (Pallant, 2016, p. 160; Tabachnick & Fidell, 2014). Visual inspection of

the frequency histogram (Figure M-3) and the computed normality (labeled Normal Q-Q)

plot for Intention variable (Figure M-4) also showed a distribution of scores that are

reasonably "normal.". According to the Central Limit Theorem, large sample sizes

(greater than 200 cases), such as the one in this study (n = 739), predict normality

(Tabachnick & Fidell, 2014, p. 120). See Table 14 for a summary of the statistics used to
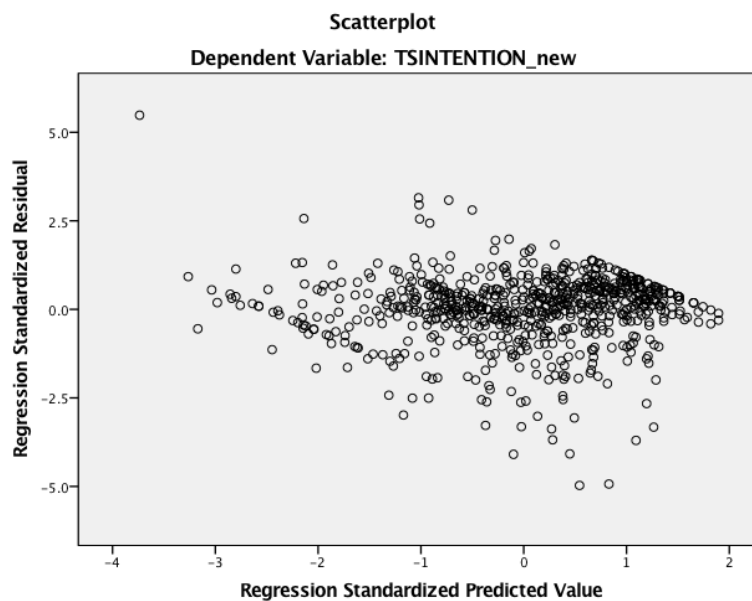
confirm assumptions of regression.

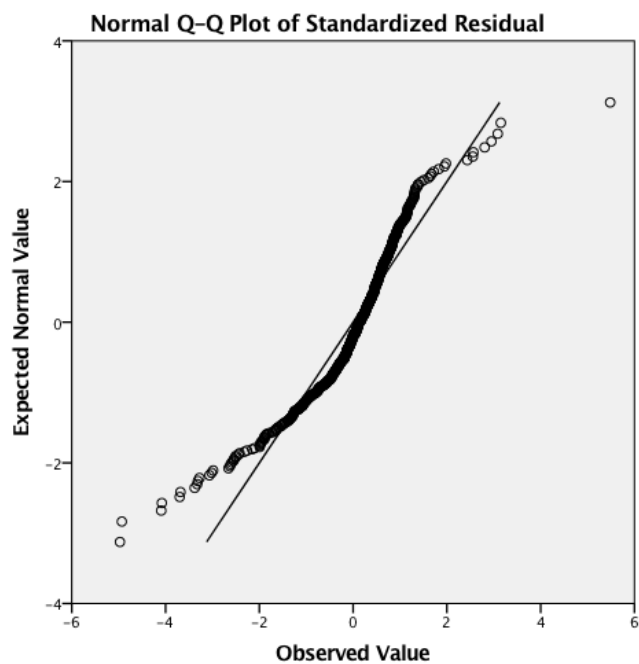*Figure M-1*. Standardized residuals plot for outcome variable intention (n = 739)

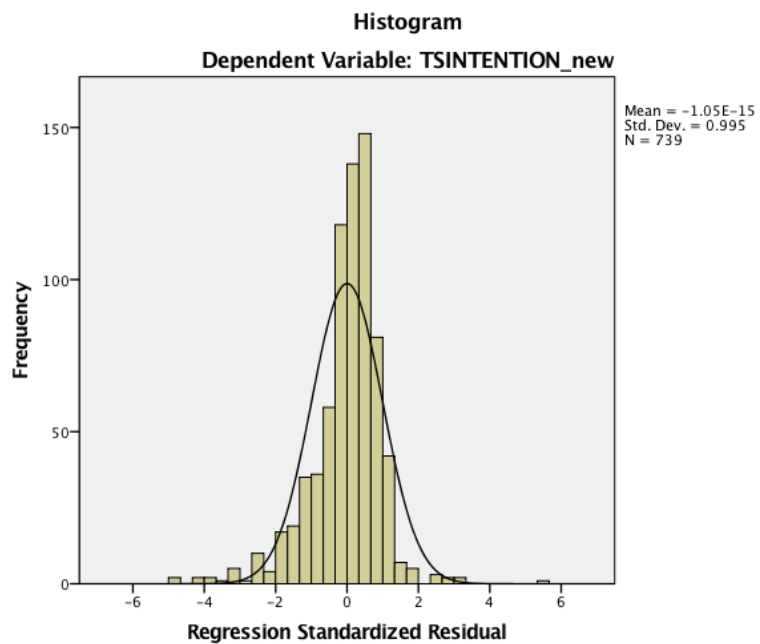*Figure M-2*. Normal probability plot of standardized residuals for intention (n = 739)

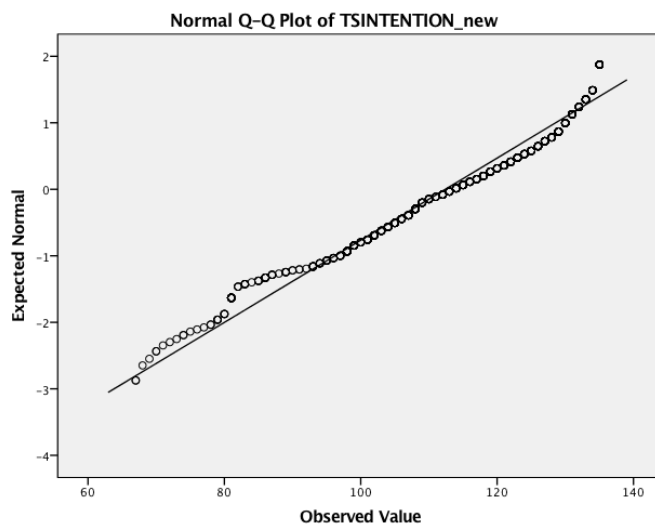*Figure M-3*. Histogram for intention (n = 739)

Figure M-4. Normal Q-Q plot for intention (n = 739)

This re-evaluation regression model identified five subscales (IVs) as statistically significant: exploring patient perspective, job satisfaction, role adequacy, sharing information and power, and dealing with communicative challenges. The IVs all had Pearson's correlations greater than .3, the minimum recommended threshold for a significant relationship with the dependent variable Intention. Pearson's correlation coefficients were below the .7 recommended threshold for highly correlated variables. Collinearity diagnostics were assessed by the Tolerance and VIF values. Each of the IVs retained in the model had Tolerances greater than the minimum .10 reference threshold for high multiple correlation (Pallant, 2016, p. 159). The VIF values for the IV's were all below the reference cut-off of 10 that would indicate multicollinearity (Pallant, 2016, p. 159).

Appendix N

Excluded Case Numbers

Case #	Case #
7	396
10	440
12	485
57	495
89	513
90	587
109	616
155	659
224	663
311	678
319	696
333	733
368	737

Appendix O

Pearson Correlation Coefficients for Variables

		DDPPQ Subscale Mean – Role Adequacy	DDPPQ Subscale Mean – Role Support	DDPPQ Subscale Mean – Job Satisfaction	DDPPQ Subscale Mean – Role Legitimacy	SEPCQ Subscale Mean – Explore Patient Perspective	SEPCQ Subscale Mean – Sharing Information and Power	SEPCQ Subscale Mean – Dealing with Communicative Challenges
DDPPQ Subscale Mean – Role Adequacy	Pearson Correlation	1	.426**	.397**	.482**	.247**	.309**	.295**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	739	739	739	739	739	739	739
DDPPQ Subscale Mean – Role Support	Pearson Correlation	.426**	1	.337**	.338**	.131**	.148**	.199**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	739	739	739	739	739	739	739
DDPPQ Subscale Mean – Job Satisfaction	Pearson Correlation	.397**	.337**	1	.234**	.262**	.202**	.240**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	739	739	739	739	739	739	739
DDPPQ Subscale Mean – Role Legitimacy	Pearson Correlation	.482**	.338**	.234**	1	.229**	.282**	.262**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	739	739	739	739	739	739	739
SEPCQ Subscale Mean – Explore Patient Perspective	Pearson Correlation	.247**	.131**	.262**	.229**	1	.778**	.820**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	739	739	739	739	739	739	739
SEPCQ Subscale Mean – Sharing Information and Power	Pearson Correlation	.309**	.148**	.202**	.282**	.778**	1	.775**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	739	739	739	739	739	739	739
SEPCQ Subscale Mean – Dealing with Communicative Challenges	Pearson Correlation	.295**	.199**	.240**	.262**	.820**	.775**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	739	739	739	739	739	739	739

**. Correlation is significant at the 0.01 level (2-tailed).

Table A11: Pearson Correlation Coefficients – Predictor and outcome variables