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Peer Recovery Support Specialists: Role Clarification and Fit Within the Recovery Ecosystems of Central Appalachia

Angela Hagaman
East Tennessee State University

Peer Recovery Support Specialists:

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Angela Hagaman

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Robert Pack, PhD, MPH, Chair

Kelly Foster, PhD

Katie Baker, DrPH, MPH

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ABSTRACT

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The Peer Recovery Support Specialist (PRSS), a certified professional who self-identifies as being in recovery from a substance use disorder (SUD), mental illness, or co-occurring disorders, plays a key role in the ongoing transformation of SUD treatment from one of acute clinical service provision with documented short-term outcomes including symptom reduction, to a more holistic and comprehensive approach to long-term recovery. Empirical evidence specific to outcomes of PRSS working in the addiction treatment realm is sparse and equivocal, indicating the need for additional research and improved methods designed to explore the nature of the PRSS role and fit within the expanding models of a recovery eco-system. This sequential exploratory mixed-methods study surveyed PRSS in five states of Central Appalachia in order to better understand the nature of their work, personal recovery characteristics and their interactions within existing recovery ecosystems. The final sample included 565 PRSS. Results indicate that PRSS frequently provide emotional support to persons they work with and are overwhelmingly satisfied with their work but have few professional advancement opportunities and generally feel that others misunderstand their role. They have a strong voice and wish to be heard as evidenced by their responses to open text questions and interest in future work. This baseline survey can serve as the beginning of a framework for improved methods if driven by PRSS.

DEDICATION

This dissertation is dedicated to mentors in my life who knew what I could accomplish before I did. They include Mrs. Wallace, a 5th grade teacher who took me under her wing when my home life was in utter chaos, Dr. Bricca Sweet who insisted that I take the GRE and apply for graduate school when I was certain I did not have the capacity to go back to school, and Dr. Rob Pack, a brilliant scientist and supportive boss and friend who sets the bar high and helps you reach it every time. He shared this anonymous quote with me when I was having a particularly hard day, "Excellence can be attained if you risk more than other think is safe, care more than others think is wise, dream more than others think is practical and expect more than others think is possible."

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1. Introduction

"New service roles sprout from the soil of unmet need" (White, 2006). Peer recovery support specialists (PRSS) are a re-imagination of a well-understood component of recovery that emerged in the late 1990s (White, 2006) and may now play a significant role in positively affecting outcomes for persons with substance use disorder (SUD). As the SUD treatment field transforms from a less effective acute care model of service delivery and symptom reduction to a more comprehensive person-centered approach built upon chronic care models of disease, PRSS are uniquely poised to engage persons suffering with SUD and intervene across the service continuum (Barrenger et al., 2019; Blash et al., 2015; Daniels et al., 2012; White, 2006). Regrettably, the evidence for PRSS services is mixed in part due to methods that are ill-fitted to measure the impact in behavior across time and a complex service continuum. In addition, the lack of a uniform taxonomy of service roles, job-related activities, and work settings serve as barriers to understanding the impact of PRSS provider services (Ashford et al., 2018; Chisholm & Petrakis, 2020; Cronise et al., 2016; Johnson et al., 2014; White, 2009). Existing literature recommends incorporating feedback from treatment professionals and individuals in recovery to assist in designing recovery measurement tools (Ashford et al., 2018; Neale et al., 2016) and expanding research to incorporate the views of PRSS concerning the implementation of recovery-oriented systems of care (Chisholm & Petrakis, 2020). This study seeks to query certified PRSS currently employed in 5 Central Appalachian states in order to elucidate work roles and activities and better understand PRSS fit within the context of comprehensive recovery-oriented models.

Statement of the Problem

Epidemiological Data and Trends

Given the economic and social impact of substance use, there is an urgent need for service models that inform community leaders and policy makers on the benefits of a recovery informed approach to SUD treatment. There are currently 22 million people living with an SUD in the United States (Center for Behavioral Health Statistics and Quality, 2018). Unfortunately, fewer than 20% of these individuals receive any type of treatment and even fewer receive specialized treatment such as an inpatient hospital stay, inpatient or outpatient treatment received at a drug or alcohol rehabilitation facility, or treatment at a mental health center (Substance Abuse and Mental Health Services Administration, 2019). Many factors may contribute to the US treatment gap including stigma, cost, service availability, linkages to service, and an inadequate behavioral healthcare workforce (Hoge et al., 2013; Substance Abuse and Mental Health Services Administration, 2011). Frequent staff turnover, low compensation, minimal diversity, and limited competence in evidence-based treatment have all been cited as barriers to an adequate behavioral health workforce (Hoge et al., 2013). In addition, people living in rural areas and those with lower per capita incomes experience greater inequalities in access to treatment than their urban counterparts with higher incomes (Hoge et al., 2013; Konrad et al., 2009). Furthermore, health care reform may contribute to the treatment gap in that there is an increasing recognition of the value of behavioral health services, yet this contrasts starkly with the low reimbursement rates for these services (Konrad et al., 2009).

Overdose deaths, the inevitable sequelae of SUD, have grown exponentially in the US over a 38-year period (Jalal et al., 2018). Every day 174 people die from drug overdoses (Jalal et al., 2018). The opioid epidemic was declared a public health emergency in 2017 due to the

increasing number of deaths attributed to prescribed opioid pain relievers, heroin, and synthetic opioids (Jalal et al., 2018). Approximately 25% of US counties have a severe and persistent problem with opioid overdose mortality and 130 people die each day from an opioid overdose (Centers for Disease Control, 2018; Peters et al., 2020). A new wave of deaths connected to stimulants is also on the rise; thus, it is imperative to consider the full range of substance use disorders and drug specific sub-epidemics in order to appropriately intervene and engage those suffering in appropriate treatment (Jalal et al., 2018; Johnson, 2019). It is well understood that patient retention in treatment is essential for long-term recovery, however, an estimated one-half to two-thirds of people are discharged from treatment prior to successful completion (Davidson et al., 2010; Hymes, 2015).

In addition to lives lost, health care costs for persons with SUD are exorbitant. As of 2016, the total economic cost related to health care for substance misuse and SUD totaled over $64 billion with $27 billion related to alcohol use, $11 billion to illicit substance use, and $26 billion to prescription opioid use (Ashford et al., 2019; Birnbaum et al. 2011; Florence, 2016). It is also estimated that more than 20% of patients hospitalized for acute care on general medicine wards have SUD (Brown et al., 1998; Jack et al., 2018) and persons with SUD are 1.5 times more likely to be readmitted to the hospital (Billings & Mijanovich, 2007; Jack et al., 2018; Walley et al., 2012).

Criminal justice systems in the United States are overwhelmed by persons incarcerated for drug-related crimes. As early as 2004, more than 55% of the federal prison population was incarcerated for a drug-related crime and 83% of state prison populations and 79% of federal prison populations self-reported life-time drug use (Ashford et al., 2019; Mumola & Karberg, 2006). More recent statistics indicate that an estimated 65% of the US prison population has an

SUD with another 20% that do not meet official criteria for SUD but were under the influence of drugs or alcohol at the time of their crime (Center on Addiction, 2010; National Institute on Drug Abuse, 2020)

Recovery is the recommended outcome for individuals with SUD and is defined as "the process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential" (Substance Abuse and Mental Health Services Administration, 2011). Community-based recovery-oriented approaches familiarize stakeholders with the problem and connect agencies and services (Ashford et al., 2019). The high mortality rate for persons with SUD, retention rates, and the treatment gap have contributed to the movement towards recovery-oriented practice and integrated health care. "Recovery-oriented approaches involve a multi-system, person-centered continuum of care where a comprehensive menu of services and supports is tailored to individuals' recovery stage, needs and chosen recovery pathway" (Bassuk et al., 2016; Clark, 2007). Recovery-oriented services are increasing within health care systems throughout the US and internationally and there is growing evidence that PRSS may support the implementation of these services (Chisholm & Petrakis, 2020). The evidence also indicates that assertive linkages to medical, community, and social supports are critical components of successful recovery and that PRSS may play a central role in making these connections (Ashford et al., 2019).

Substance Misuse and Appalachia

Appalachia, in particular, shares a disproportionate burden of the consequences of substance use disorders and is often cited as ground zero for the opioid epidemic. In order to understand the impact specific to opioids in Appalachia, it is important to understand access and supply related to opioid pain relievers (OPR). Between the years 2006 and 2012, pharmaceutical

companies sold 76 billion oxycodone and hydrocodone pain pills in the US (Higham et al., 2019). Marketing for these products was highly effective in Appalachia due in part to high rates of chronic pain, inadequate regulatory oversight, and little public health education about the risks for misuse (Moody et al., 2017; Zhang, 2008). The top four states with the most prescription opioids per person in the nation from 2006-2012 were West Virginia, Kentucky, South Carolina, and Tennessee, all of which are located in Appalachia (Higham et al., 2019). Overdose death rates in these states were three times the national average during these years (Higham et al., 2019).

The substance misuse problem in Appalachia is multi-layered and encompasses more than opioids alone. A report commissioned by the Appalachian Regional Commission (ARC) entitled, *Appalachian Diseases of Despair: Final Report* discovered three major findings: 1) the combined mortality rate from diseases of despair (drug overdose, suicide, and alcohol-related liver mortality) is 37% higher in Appalachia than in the non-Appalachian US (Meit et al., 2017). The report also found that the high burden of diseases of despair in Appalachia is a contributor to the national decline in life expectancy and that inequities from diseases of despair were concentrated most in the economically distressed counties in Central and North Central Appalachia (Meit et al., 2017).

Extent to Which the Problem is Amenable to Change

"Promoting the long-term recovery of individuals suffering from SUD in the locations they live and work is critical" (Ashford et al., 2019). The current literature suggests that the potential for the PRSS to improve outcomes for persons with SUD is promising, however, studies almost unanimously indicate that the role of the PRSS is not well understood (Barrenger et al., 2019; Bassuk et al., 2016; Blash et al., 2015; Collins et al., 2018; Cronise et al., 2016;

Eddie et al., 2019a; Johnson et al., 2014; Lapidos et al., 2018; Pantridge et al., 2016; White, 2006). Furthermore, there is a call to identify the underlying mechanisms and ingredients of PRSS services in order to model and better understand the possible theoretical underpinnings involved and understand how the processes in these complex social interactions are linked to behavioral change (Barrenger et al., 2019; Chinman et al., 2014; Gillard et al., 2015) thereby expanding research models currently designed to demonstrate short-term clinical outcomes to include recovery-oriented outcomes such as empowerment, self-efficacy and hopefulness as they may serve as mediators to bridge the gap between intervention and clinical outcome.

Two prominent models for SUD treatment and recovery-oriented systems that incorporate PRSS services are the Recovery Oriented System of Care (ROSC) and the Recovery Ready Eco-System Model (RREM) (Ashford et al., 2019). The recovery-oriented system of care (ROSC) first came onto the recovery scene in 2005 after a National Summit on Recovery hosted by the SAMHSA (SAMHSA) and the Center for Substance Abuse Treatment (CSAT) (Kaplan, 2008). Through an iterative process, key stakeholders devised the guiding principles and key elements of recovery-oriented systems of care (ROSC) (Halvorson et al., 2013). “The ROSC leverages existing community resources and formal systems of care to provide wrap-around support to individuals initiating the recovery journey” (Ashford et al., 2019). PRSS services are considered a fundamental component of ROSC (Kaplan, 2008).

“The Recovery Ready Ecosystems Model (RREM) complements the ROSC and is based on socio-ecological systems theory identifying micro, mezzo, and macro elements that have been found to support recovery or that can act as a barrier to the recovery process” (Ashford et al., 2019). The RREM assesses recovery supports in any given community and identifies barriers to recovery thereby creating a useful framework for the dissemination and coordination of system

elements that enhance recovery success (Ashford et al., 2019). Ashford et al. (2019) further suggests that a coordinated system of service elements in itself is insufficient if individuals do not perceive these elements as being supportive.

PRSS can play a critical role within the ROSC and RREM, however, the existing literature does little to elucidate how PRSS align themselves along the recovery continuum and within proposed models (Chisholm & Petrakis, 2020; Pantridge et al., 2016). There is a dearth of empirical literature that considers the voices and lived experience of employed PRSS or their perspective on the implementation of recovery-oriented models of service delivery (Chisholm & Petrakis, 2020; Hymes, 2015). Davison et al. (2010) imports that further understanding of the PRSS role has great potential to influence care coordination and long-term recovery for persons with SUD (Hymes, 2015).

Potential Return on Investment

The 2016 U.S. Surgeon General's Report on Alcohol and Other Drug Use projected that behavioral health disorders cost the U.S. over $420 billion dollars annually (McLellan, 2017). PRSS may be one of the most cost-effective approaches to engaging persons suffering from SUD and connecting them to services across the continuum of care. PRSS services are less expensive than specialized clinical services and have been proven to keep people engaged in services, thus allowing healthcare and behavioral healthcare providers to focus on acute needs within their specific areas of expertise (White, 2004). Two rigorous systematic reviews examined the body of published research on the effectiveness of PRSS services and findings indicate that PRSS interventions can improve relationships with treatment providers (Andreas et al., 2010), increase treatment retention (Deering et al., 2011; Mangrum, 2008; Tracy et al., 2011), increase satisfaction with the overall treatment experience (Armitage et al., 2010), improve access to

social supports (Andreas et al., 2010; Boisvert et al., 2008), decrease justice system involvement (Mangrum, 2008; Rowe et al., 2007), reduce relapse rates (Boisvert et al., 2008), decrease emergency service utilization (Kamon & Turner, 2013), reduce re-hospitalization rates (Min et al., 2007), and reduce substance use (Armitage et al., 2010; Bernstein et al., 2005; Boyd et al., 2005; Kamon & Turner, 2013; Mangrum, 2008; Rowe et al., 2007). In addition, treatment that results in sustained recovery is likely to have effects resulting in less criminal activity (Chandler et al., 2009) and increases in wage earning (e.g. taxable income) (Hoge et al., 2013), though the measured impact of such outcomes is lacking (Ashford et al., 2019). Moreover, there is an increasing body of evidence about the cost-effectiveness of PRSS services to include a 24-47% decrease in overall healthcare utilization for persons using peer services (Hendry et al., 2014). See Appendix 1 for a matrix of evidence for PRSS services.

How Will Addressing This Problem Lead to a Population Health Impact?

Though substance use treatment programs provide services to over 3.8 million Americans aged 12 or older each year, these programs continue to face barriers related to funding, workforce development, administrative burden, and adoption of evidence-based practices (EBP) (McLellan et al., 2003). With the rise of drug poisoning deaths and economic burden in the U.S., it is paramount that systemic barriers within the SUD treatment industry be identified and resolved quickly. Seeking direct feedback from treatment professionals, including PRSS with lived experience, is an important place to start identifying current barriers and solutions to offset these barriers (Ashford et al., 2018b). Examining the role of PRSS in integrated health care and recovery-oriented systems of care can lead to long-term impacts in health care outcomes for persons with SUD. Additionally, as “in-fighting,” medication-assisted recovery versus abstinence-based recovery, continues to be a barrier to effective treatment, specifically for opioid

use disorder (OUD) (Ashford et al., 2018b), PRSS may serve a crucial role in bridging and translating service options across the continuum to both health care providers and persons with SUD. A recent qualitative study indicates that PRSS can contextualize patient experiences for health-care providers and influence system-level change (Collins et al., 2018). PRSS may also have potential to strengthen harm reduction programs and enhance existing efforts to curb the overall burden of SUD (Ashford et al., 2018a; Eddie et al., 2019a).

Long-Term Goals Centered on Addressing the Problem

This study will address a call in the existing literature to improve clarity related to the PRSS role, service activities and settings by engaging currently employed PRSS in Central Appalachia. PRSS will also respond to questions that elucidate ways in which their service activities fit within recovery-oriented models such as ROSC and RREM. These results are designed to guide future research methods that will lead to an improved conceptualization and framework to measure PRSS support. Future research will focus on developing theoretical models to identify change mechanisms embedded in PRSS services and link these mechanisms with patient outcomes in order to better demonstrate the effectiveness of PRSS in recovery-oriented systems of care.

Summary

SUD is a significant problem in the US with a great cost to society. Many people need treatment; however, most are not receiving it, and for those that are, the services may be ineffective at promoting long-term recovery. Recovery-oriented systems and models that incorporate trained PRSS with lived-experience across the disease continuum are promising and may hold the key to turning the tide on a leading cause of morbidity and mortality, particularly in Central Appalachia. While PRSS may provide effective person-centered service provision, there

are significant barriers to activating this workforce to include role confusion, fit within models such as ROSC and RREM, and ineffective methods for measuring patient outcomes.

Project Aims

Aim 1: Conduct focus groups with currently employed PRSS in Central Appalachia to inform the development of a cross-sectional quantitative survey instrument.

Aim 2: Disseminate the cross-sectional quantitative survey instrument informed by Aim 1 to an adequately powered sample of employed PRSS professionals in Central Appalachia.

Aim 3: Analyze and summarize findings from the quantitative survey instrument and disseminate results to stakeholders in the form of policy or informational briefs.

Foundational and Concentration Competencies and Integration in the ILE

- **Data and Analysis #2: Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.** The dissertation component of the ILE will consist of a mixed methods study to address substance misuse and substance use disorders in Central Appalachia.
- **Programs and Policies #16: Integrate scientific information, legal, and regulatory approaches, ethical frameworks and varied stakeholder interest in policy development and analysis.** The goal of this dissertation and corresponding products is to integrate scientific information related to the efficacy of PRSS service provision and the corresponding ethical approaches and regulatory guidelines to guide future PRSS studies and ultimately change the landscape and reimbursement of these services in the long-term.
- **Education and Workforce Development #18: Assess an audience's knowledge and learning needs.** The nature of the mixed methods approach described in

Chapter 3 is one that will examine PRSS knowledge of the ROSC and RREM models and explore assets and gaps in the state sponsored certification processes.

- **Leadership, Management and Governance #4: Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners**. SUDs continue to be a leading cause of death in the US, however, fewer than 20% of persons with SUD are receiving effective treatment and drug-related overdose deaths continue to rise (cite Center for Behavioral Health Statistics and Quality, 2018). The results of the study will be shared as a policy brief or other condensed and palatable medium to PRSS professional organizations, third party payors, and members of the ORCCA and STARS network to guide the future study and policy development related to treatment outcomes for persons with SUD.
- **Leadership, Management and Governance #10: Propose strategies to promote inclusion and equity within public health programs, policies and systems**. The literature demonstrates that PRSS voices and the lived experiences of employed PRSS professionals are lacking in empirical literature and thus, this study seeks to address that gap by including their perspective from the initial development of a quantitative survey instrument to dissemination of the final report to interested stakeholders.
- **Community and Behavioral Health Concentration Competency #5: Translate theories, conceptual paradigms and evidence to inform planning, implementation, evaluation and dissemination of innovative, tailored public**

health interventions. Aim 3 is designed to disseminate the results and evidence of the mixed methods study to PRSS stakeholders, elected officials, and other leaders who are poised to improve public health research and design tailored public health interventions.

- **Community and Behavioral Health Concentration Competency # 6: Facilitate the identification of health needs, interests, capacities and disparities of communities and special populations using principles and practices of community-based participatory research.** Aim 1 and 2 are designed to engage PRSS, a special population with lived experience with SUD and recovery, in the creation and dissemination of a survey instrument designed to measure their work roles and capacity to interact within recovery eco-systems. This type of mixed methods approach that engages the identified sample population is consistent with the practices of CBPR.
- **Community and Behavioral Health Concentration Competency #7: Conduct qualitative research using well-designed data collection and data analysis strategies.** Aim 1 is based on approved methods of qualitative data collection and analysis when used as a component of a mixed-methods study.

Chapter 2. Literature Review

The following review of the literature will summarize historical trends related to treatment for SUD in the US and the emergence of persons with lived experience serving as peers and recovery supporters. In addition to providing evidence for the effectiveness of PRSS interventions, this review will include challenges and tensions associated with the PRSS role, and how PRSS services are being utilized within Recovery Oriented Systems of Care (ROSC).

The Treatment Landscape in the U.S. Including Historical Trends

Treatment for SUD in the U.S. most often includes the following elements: withdrawal management, outpatient, and inpatient programs. "Treatment outcomes are frequently abstinence focused, although calls for the expansion of treatment supported with medication (i.e. pharmacotherapy) have become more frequent due to the opioid epidemic" (Clark, 2017). Success rates for treatment are largely considered in terms of periods of abstinence from drugs and alcohol with many studies suggesting that treatment is only successful 20–60% of the time (National Institute of Drug Abuse, 2012). The average treatment length of stay in the U.S. remains at less than 30 days while research suggests that a longer duration of in-patient stay is beneficial for some people (National Institute of Drug Abuse, 2012). Only a small portion of the U.S. population receives substance misuse treatment not only due to availability and capacity, but also due to the cost and stigma associated with SUD (Corrigan et al. 2017).

"SUD treatment has historically been thought of as an acute intervention, however, when it is combined with long-term recovery support, outcomes can improve dramatically" (Ashford et al., 2019; Simoneau et al. 2017). More recently, SUDs are being understood and conceptualized from a chronic disease model in which complete recovery may be an unrealistic outcome, especially if treated with historical treatment methods and abstinence-focused outcomes

(Boisvert et al., 2008; Hymes, 2015). Recent studies suggest that recovery occurs along many different pathways with unassisted, or "natural," recovery used by 46.1% of Americans and the remaining 53.9% using one or more assisted pathways such as mutual aid (e.g. Alcoholics Anonymous or Narcotics Anonymous) groups, medical treatment, recovery support services, or medication (Ashford et al., 2019; Kelly et al. 2017).

A 1959 report by the Joint Commission for Mental Health and Illness (JCMHI) spurred the paraprofessional peer movement by encouraging the engagement of local helpers to serve in paid service positions to support persons suffering from mental health and substance use disorders (Greene, 2014; White, 2010). The next milestone in the peer movement came with the passing of the Comprehensive Alcoholism and Prevention and Control Act (1970), also known as the Hughes Act (Greene, 2014). Harold Hughes, for whom the Hughes Act was named, was a recovering alcoholic who acquired support from other well-known recovering alcoholics, including Bill Wilson, the founder of Alcoholics Anonymous, and Marty Mann, cofounder and director of the National Council on Alcoholism (Greene, 2014; White, 2010). These legislative acts led to the development of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA) (Greene, 2014) and in turn, created a movement of persons in recovery serving in supportive roles to others suffering from SUD during the 1960's and 1970's. Ultimately, however, this movement necessitated credentialing standards that strained many paraprofessionals who were ultimately forced out of the profession (White, 2009).

In 1998, the Substance Abuse and Mental Health Services Administration (SAMHSA) launched the Recovery Community Services Program with a vision of engaging communities of recovery in public dialogue about addiction, treatment and recovery (Bassuk et al., 2016; Kaplan,

2008). In 2002, this same initiative completed a programmatic refocus designed to intentionally provide more social supports for recovery delivered by people with lived experience in recovery oriented systems of care (Kaplan et al., 2010). Three years later, SAMHSA and the Center for Substance Abuse Treatment (CSAT) hosted a National Summit on Recovery representing the first broad-based, national effort to reach a common understanding of guiding recovery principles, elements of recovery-oriented systems of care, and a universal definition of recovery (Halvorson et al., 2013). More recently, the Mental Health Parity and Addiction 3 Equity Act of 2008 and the Patient Protection and Affordable Care Act of 2010 have initiated a shift in the focus of SUD treatment from an acute care model to a more integrative and holistic approach due in part to perceived deficiencies in existing models (Hymes, 2015; White, 2004). In 2009, SAMHSA initiated the Recovery to Practice initiative in an effort to support the integration and adoption of recovery-based practices in substance abuse treatment (Hymes, 2015), which set the stage for a re-envisioning of the former paraprofessional peer movement of the 1960's and 70's. Healthcare reform also paved the way for a restructuring of the SAMHSA funded state block grants in order to incorporate recovery, wellness, and peer roles into substance abuse treatment services (Hymes, 2015; Substance Abuse and Mental Health Services Administration, 2012). PRSS thus emerged in part from a need to reconnect addiction treatment to the process of long-term recovery (Hymes, 2015; White, 2006) and as a result of the policy context described above (Laudet & Humphreys, 2013). This holistic and integrated approach inspired the shift from an acute care model for substance misuse treatment to a more community-based chronic care model of treatment. Thus, the current expansion and funding for PRSS in the US marks a formal return of people in recovery to the substance abuse treatment arena (Hymes, 2015; White & Evans, 2013).

Peer Recovery Support Specialists

Peer support services have grown exponentially in the past two decades and are now an integral part of mental health services both nationally and internationally (Cronise et al., 2016; Kaufman et al., 2016). PRSS are individuals in recovery from a SUD who are employed to assist and provide guidance to patients in various states of recovery (Jack et al., 2018; White, 2009). PRSS are known by a number of other monikers including but not limited to: recovery coach, recovery manager, recovery mentor, recovery support specialist, recovery guide, personal recovery assistant, recovery navigator, peer support specialist, and certified peer specialists (Jack et al., 2018; White, 2006). The lack of consensus around a formal nomenclature for PRSS complicates researchers' ability to demonstrate effects. To date, studies are not able to demonstrate whether different job titles can be used interchangeably (Cronise et al., 2016). For the purposes of this study, we will continue to use PRSS, peer recovery support specialist, to describe a position that brings the lived experience of recovery, combined with training and supervision, to assist others in initiating and maintaining recovery. PRSS work in a variety of settings including recovery community centers, recovery residences, collegiate recovery programs, drug courts and other justice system settings, hospital emergency departments, child welfare agencies, homeless shelters, and behavioral health and primary care settings (Ashford et al., 2018a). Recovery Support Services (RSS), frequently delivered by PRSS, are the process of giving and receiving non-clinical assistance to support long-term recovery from SUD (Substance Abuse and Mental Health Services Administration, 2011). RSS often fall into the domains of education, employment, housing, and social/peer support in an effort to improve the functioning and wellness of individuals (Ashford et al., 2019; Kaplan, 2008). SAMSHA delineates four primary types of PRSS support: 1) Emotional, 2) Informational, 3) Instrumental, 4) Affiliational

(Substance Abuse and Mental Health Services Administration, n.d.), however, the literature indicates a high level of variance in PRSS roles and activities across settings and geographical boundaries.

Emergence of the PRSS

Historically, there have been two distinct roles to support recovery from SUD, the professional addiction service provider and mutual-aid sponsors who frequently serve in Twelve-step recovery mutual-aid groups (Hymes, 2015). The original focus of the mutual-aid sponsor was to provide "personal guidance into and through the recovery process and nest each client within a larger community of individuals and families in recovery" (White, 2006). This role was somewhat diminished during a phase of professionalization for the addiction counselor, but has recently been revived as the SUD service system transforms to a recovery-oriented system of care following the Mental Health Parity and Addiction Equity Act of 2008 and the Patient Protection and Affordable Care Act of 2010 (White, 2006). In 2007, the Centers for Medicare and Medicaid Services (CMS) issued a letter to each state Medicaid director approving reimbursement for peer support services (Centers for State Medicare and Medicaid Services, 2007). Georgia was the first state to initiate reimbursement for the PRSS and now more than 40 states have followed suit (Myrick & Del Vecchio, 2016). A number of states also fund PRSS services through the State Targeted Response to the Opioid Crisis program and other funding mechanisms such as Temporary Assistance for Needy Families (TANF). To that end, the Joint Commission on Accreditation of Health Care Facilities and SAMHSA now provide standards and recommendations for peer-based recovery support services (White, 2006) and the Council on Accreditation of Peer Recovery Support Services (CAPRSS) accredits programs that deliver PRSS (Bassuk et al., 2016; Council on Accreditation of Peer Recovery Support Services, 2014).

While each state has a separate credentialing and training process, commonalities exist across states due to the aforementioned standards and accreditation process. There still, however, remains confusion regarding the PRSS role, job-related activities and highly variant work settings (Barrenger et al., 2019; Blash et al., 2015; Cronise et al., 2016). Equivocal evidence for the effectiveness of peer-delivered interventions may be attributed to this lack of understanding about the varied roles of the PRSS (Cronise et al., 2016).

PRSS Services Defined

The theoretical basis for peer support, in general, draws on literature in psychology and other related fields that highlight social support, empathy, and therapeutic relationships (Boisvert et al., 2008; Reif et al., 2014; Salzer et al., 2010; White, 2009). PRSS support services rely on a common set of core activities that predominantly involve education and coaching (Reif et al., 2014; Substance Abuse and Mental Health Services Administration Center for Substance Abuse Treatment, 2009; White, 2006; White, 2010). SAMHSA defines peer recovery support as a peer-based mentoring, education, and support service provided by individuals in recovery from substance use disorders to individuals with substance use disorders or co-occurring substance use and mental health disorders (Reif et al., 2014; Substance Abuse and Mental Health Services Administration, Financing Center of Excellence, 2011). As mentioned previously, PRSS services offer support in four general areas: emotional (mentoring and peer-led support groups), informational (parenting classes, job readiness training), instrumental (access to child care, transportation), and affiliational (recovery centers, sports leagues, and socialization opportunities) and include non-clinical, peer-based activities that engage, educate, and support individuals so that they can make life changes that are necessary to recover from SUD (Reif et al., 2014; Substance Abuse and Mental Health Services Administration, Financing Center of

Excellence, 2011). PRSS support occurs across the full continuum of recovery, from pre-treatment to maintenance (Reif et al., 2014). There are numerous definitions of PRSS roles and activities in addition to SAMHSA definitions.

Peer recovery support is distinctly different from professional counseling, formal treatment, or mutual-help sponsorship, although it is frequently accompanied with other peer recovery activities, groups and formal treatment protocols (Reif et al., 2014). PRSS have less formal education than professional service providers and are not involved in assessment, diagnosis, or treatment planning (Hymes, 2015; White, 2006). PRSS help consumers set recovery goals, develop a plan, and work toward and maintain recovery and serve as liaisons between specialty treatment services or social services and provide linkages to medical care, employment support, human services, and other systems of care (Reif et al., 2014). Furthermore, Salzer et al. (2010) noted social support as being a particularly important component of providing peer services. PRSS conduct outreach and act as role models (Faces & Voices of Recovery, 2019; Reif et al., 2014; Substance Abuse and Mental Health Services Administration Center for Substance Abuse Treatment, 2009; White, 2010) facilitating a variety of outcomes such as: self-empowerment, abstinence or decreased substance use, improved quality of life, improved self-esteem and sense of purpose, reduced social isolation and increased social connectedness, decreased criminal justice involvement, improved resources to achieve and maintain a life in recovery, and improved education, employment, housing, and relationships (Chinman et al., 2014; Reif et al., 2014; Substance Abuse and Mental Health Services Administration, Financing Center of Excellence, 2011; White, 2009). As evidenced by the multitude of job-related activities and wide-ranging outcomes, PRSS services can be difficult to

measure (Reif et al., 2014); measurement matters because what is measured influences activity, practice and reimbursement (Barrenger et al., 2019).

PRSS are well-poised to interact within recovery-oriented systems ensuring assertive person-centered linkages to people and services across the disease continuum. Empirical evidence posits that "individual development occurs when multiple ecologies are linked in ways that are perceived by the individual to be supportive of their growth" (Bronfenbrenner, 1979). "Assertive linkages that ensure transitions between ecologies allow for systems to respond to an individual's needs and concerns in person-centered ways thereby orienting the individual towards various organizations, individuals, and environments that are recovery-affirmative" (Ashford et al., 2019). While the ROSC and RREM models are designed to link systems from a socio-ecological perspective, assuring that agencies and systems are recovery-oriented, it is not yet known how PRSS perceive these systems or where their services are designed to fit (Chisholm & Petrakis, 2020; Pantridge et al., 2016). Moreover, a number of challenges have been cited related to PRSS integration within existing systems of care to include assimilating peers into organizations built around professionally credentialed staff, (Alberta et al., 2012), power imbalances, discrimination and dismissive attitudes (Chisholm & Petrakis, 2020), stigma from non-peer coworkers including licensed professionals, low financial compensation (Cronise et al., 2016) and misunderstanding about the use of self-disclosure (Englander et al., 2019).

While peer support is identified as a non-clinical service, overlap does sometimes occur between PRSS services and those of the addictions counselor. In his 2015 dissertation, Aaron Hymes delineates the ways in which the role of the PRSS differs from that of addictions counselors to include: service goals, education and training, use of self, service relationship, locus of delivery system, service philosophy, duration of contact, core competencies, service

delivery framework, service language, and non-possessiveness (Hymes, 2015; White, 2006). There are also clear differences between the addiction counselor and the PRSS in the use of self-disclosure, the overall service relationship, and the duration of contact (Hymes, 2015). Addictions counselors are discouraged from the use of self-disclosure within the counseling relationship, however the use of self is an important feature of PRSS services (Hymes, 2015; White, 2006). Furthermore, the duration of services provided by addictions counselors has a clear beginning point, middle, and ending point, often determined by a third party payer, however, PRSS face far fewer restrictions in regards to service duration (Hymes, 2015).

What do Treatment Professionals Feel is Needed?

Ashford et al. surveyed treatment professionals and asked, "If possible, what would be the one thing you would change in the SUD field?" Seven major themes emerged: 1) additional training, education, and use of evidence-based practices, 2) expansion of treatment services, 3) increased resources, 4) stigma reduction, 5) increased collaboration and leadership, 6) reductions in regulations, requirements, and incentives, and 7) expansion of recovery support services (2018). The dominant belief of professional providers and the recovery community is the need for a bridge between existing treatment services and the constant process of recovery (Hymes, 2015; White, 2012).

Peers are increasingly being employed in a range of clinical settings (Eddie et al., 2019a) and similar to the tensions between clinicians and PRSS summarized above, the recent growth in peer-based recovery support services has created heightened ambiguity about the differentiation of responsibilities across three primary roles: 1) voluntary service roles within communities of recovery, (e.g., the role of the sponsor in Twelve-Step programs), 2) the roles of clinically focused addiction treatment specialists (e.g., certified addiction counselors, psychiatrists,

psychologists, and social workers), and 3) the roles of paid and volunteer recovery support specialists (e.g., recovery coaches, personal recovery assistants) working within addiction treatment institutions and free-standing recovery advocacy/support organizations (White, 2006). Peer work often lacks the clarity of the professional treatment realm with its clear roles, work schedules, and expectations (Eddie et al., 2019a) but perhaps this flexibility to provide support across settings and the recovery continuum are part of what makes it work.

Finally, PRSS interact with clients within multiple systems of recovery and in a wide range of settings meeting clients where they are in the continuum of care (Hymes, 2015). They also serve as a logical link to the community and a natural bridge between treatment and recovery (Hymes, 2015).

Impact of Service Provision on PRSS

It is likely that the PRSS themselves receive benefit from serving in this capacity and this mutuality may be a key to successful outcomes (Johnson et al., 2014; Reif et al., 2014). However, there is limited empirical evidence to elucidate the true impact of service provision on existing and certified PRSS. As early as 1998 experts noted "the exploitation and relapse of recovering alcoholics and addicts" (Greene, 2014; White, 1998). "Due to the lack of formal credentials and the principle of service promoted by AA and NA, peers and sponsors often worked long hours, received low pay, and rarely received supervision" (White, 1998). More recent studies indicate that PRSS describe the greatest reward in working as a peer was helping others followed closely by helping with their own recovery, and while often not satisfied with their financial compensation, they report fairly high levels of overall job satisfaction (Cronise et al., 2016). A separate study indicates that PRSS report feeling somewhat or strongly satisfied with their physical safety at work, their work hours, and supervisor supportiveness, however,

fewer agreed that they have opportunities for professional advancement and report that non-peer staff are not adequately trained about their role (Lapidos et al., 2018).

In an expert panel meeting hosted by SAMSHA in 2012, PRSS expressed concern over a lack of supervision or supervision that did not fit their peer role (Substance Abuse and Mental Health Services Administration, 2012). This lack of peer-focused supervision contributes to role confusion, lack of clear job descriptions, low pay, lack of career advancement opportunities, and workplace culture being non-conducive to peer roles (Hymes, 2015; SAMHSA 2012). It is also important to note that the PRSS service model itself does include multiple potential vulnerabilities such as boundary violations, abuses of power, risk of client harm through incompetent care, and service organization liability due to illegal or unethical conduct of peer providers (Hymes, 2015; White, 2010). However, vulnerabilities are also present for PRSS themselves which include the risk of exploitation, isolation from the recovery community, and vulnerability to relapse (White, 2010).

Effectiveness for Peer Support

Peers have been utilized in mental health settings for a number of years to support persons with co-occurring and substance use disorders. Findings indicate that particularly in mental health settings, peers can be effective at reducing hospitalizations (Repper & Carter, 2011), activating patients (Chinman et al., 2014) improving symptoms, promoting engagement in social networks, and enhancing quality of life (Davidson et al., 1999). This paper however, focuses on the PRSS working in the substance use treatment field and thus the following empirical evidence will focus in that arena.

PRSS for Substance Use Disorder Treatment

A large focus of PRSS literature specific to SUD has focused on the creation of PRSS services within ROSC initiatives (Baird, 2012; Cotter 2009; Flaherty, 2009; Humphreys & Lembke, 2014; Hymes, 2015; Substance Abuse and Mental Health Services Administration, 2012; White, 2006; 2010) and the separation of the PRSS role from that of the 12-step sponsor and addictions counselor (Beckett, 2012; Reif et al., 2014; White, 2006).

Studies on the effectiveness of PRSS services across multiple domains is more limited (Bassuk et al., 2016). A 2014 review of the literature suggests that peer recovery support for individuals with SUDs meets the minimum criteria for a moderate level of evidence and has been linked with successful outcomes and other measures in a fairly small and diverse body of literature (Reif et al., 2014). This review identified two randomized-control trials (RCT) with solid methods, 4 quasi-experimental studies, 4 studies with pre-post service comparisons and 1 review that met inclusion criteria. Within the review, three studies, including 1 RCT, showed improved substance use outcomes related to the peer recovery support intervention (Armitage et al., 2010; Bernstein et al., 2005; Boisvert et al., 2008; Reif et al., 2014). Improvements in other outcomes were also found, including a decrease in rehospitalization rates (Min et al., 2007), drug use severity and medical severity (Bernstein et al., 2005), social support (Boisvert et al., 2008), self-efficacy (Andreas et al., 2010), and quality of life (Andreas et al., 2010). Additional findings in this particular review were increased engagement in or completion of treatment for substance use disorders (Deering et al., 2011; Mangrum, 2008; Tracy et al., 2011), consumer satisfaction (Sanders et al.,1998), readiness to change and control over substance use (Boyd et al., 2005), and the value of the peer recovery support service to the consumer (Armitage et al., 2010).

A 2016 systematic review by Bassuk et al. (2016) included 9 studies, 2 that were rated as methodologically strong, 2 moderate, and 5 described as methodologically weak. The studies examined a range of interventions across a wide variety of settings in which peer roles were also described as highly variant (Bassuk et al., 2016). Most of the studies that met inclusion criteria reported statistically significant findings demonstrating that participants showed improvements in substance use, a range of recovery outcomes or both. However, there was substantial inconsistency in the definitions of PRSS workers and most studies lacked a clear description of roles and responsibilities in the interventions (Bassuk et al., 2016). The authors concluded that more research is needed that expands upon the various domains of recovery to include outcomes related to housing, employment, education, quality of life, functioning, trauma exposure, mental health status and social support networks (Bassuk et al., 2016).

A more recent systematic review included 7 RCTs, 4 quasi-experiments, 8 single or multi group prospective or retrospective studies, and 2 cross-sectional investigations concluding that "while peer supports have potential across a number of clinical settings to include positive findings on measures including reduced substance use, reduced relapse, improved relationships with providers, better treatment retention and satisfaction, these findings must be viewed in light of many null findings and significant methodological limitations" (Eddie et al., 2019a). Furthermore, the authors describe role definitions for PRSS and the complexity of clinical boundaries for peers working in the field as implementation challenges. In conclusion, the authors call for more rigorous investigation to establish the efficacy, effectiveness, and cost benefits of PRSS (Eddie et al., 2019a) .

The evidence thus demonstrates some effectiveness for peer recovery support services, however, the wide range of service models, populations, and reported outcomes make it difficult to reach a cross-cutting conclusion about effectiveness (Reif et al., 2014).

Recovery Oriented Systems of Care (ROSC)

"To increase recovery opportunities for individuals with SUD and decrease the negative economic and societal impact in the U.S., it has been suggested that a comprehensive continuum of care model of addiction, versus an acute model of care, should be used as a practice standard" (Davidson & White, 2007; Kelly & White, 2010; Dennis & Scott, 2007; Humphreys & Tucker, 2002). Most individuals will engage with processes of recovery where they live, and thus supports should exist within that local community. To date, the most prominent continuum of care model, is the recovery-oriented system of care (ROSC) that "leverages existing community resources and formal systems of care to provide wrap-around support to individuals initiating the recovery journey" (Ashford et al., 2019). The ROSC model brings together existing resources and stakeholders with the primary goal of providing continuity of services and care, providing all stakeholders a voice, and building upon existing resources to further support individuals in recovery (Sheedy & Whitter, 2013).

The guiding principles of a ROSC are: (1) recovery looks different for different individuals; (2) matches should be made to where an individual is in their recovery process with appropriate interventions and resources; (3) recovery is a process along a continuum; and (4) peer support, family support and involvement, and spirituality are important components of any recovery process (Kaplan, 2008). The following key strategies, within the ROSC framework, can also facilitate successful recovery: (a) early identification and engagement; (b) use of role modeling; (c) increase motivation for change; (d) offer education; (e) provide effective

treatments and interventions; (f) provide opportunities for individuals to occupy valued roles; (g) connection between individuals and the larger recovery community; (h) provide post-treatment monitoring and recovery coaching; (i) offer meaningful recovery support services (e.g. supported housing, supported employment, supported education); and (j) offer legal advocacy (Ashford et al., 2019).

Recovery Ready Ecosystems Model

The ROSC model coordinates current services and resources in a given community, however, it does not provide a framework or model for identifying all of the components in a community that may improve individuals recovery process or the readiness of a community to promote successful recovery efforts (Ashford et al., 2019).

Robert Ashford and colleagues propose that it is incumbent upon communities to formulate and implement comprehensive readiness models to address the ongoing SUD crisis that has been intensified by the opioid epidemic in order to promote recovery success and assess gaps within these respective communities (Ashford et al., 2019).

The Recovery Ready Ecosystems Model (RREM) is based on socio-ecological systems theory and identifies micro, mezzo, and macro elements that have been found to support recovery or that can act as a barrier to the successful navigation of the recovery process. Similar models are already in use by various communities to prepare for major medical and/or disaster events (Acosta & Chandra, 2013; Ashford et al., 2019). The model assesses recovery supports and identifies barriers to recovery while also creating a framework for the distribution and orientation of system elements to further enhance recovery success (Ashford et al., 2019). The RREM considers that an individual's perception of support within their community must be considered along with the content and structure of services and supports in that community.

"Content and structure alone are insufficient without an individual perceiving such content and structure as being supportive" (Ashford et al., 2019, p. 3).

Ashford et al. (2019) posits that implementation of the RREM should be completed in conjunction with the implementation of a ROSC as it provides an underlying framework for linkage and collaboration of services in a way that emulates a recovery-informed chronic care approach thereby improving the chances that individuals will perceive benefit in receiving services and resources.

Summary

"Despite recent attempts at bringing top down solutions, SUDs continue to be a leading cause of death, a leading correlate in violent crime, and a leading cause of lost productivity in the workplace," (Ashford et al., 2019). PRSS have the potential to fill the treatment gap, reach persons with SUD where they are, and work across the recovery continuum to help others achieve long-term recovery (Chinman et al., 2014; Cronise et al., 2016). Unfortunately, most studies of PRSS services lack specificity about the nature and type of peer support and, in particular, the role, tasks, and work activities of the PRSS. Evidence for the effectiveness of PRSS services are mixed at best and policy makers and consumers need information about the effectiveness of PRSS support and its value as part of the substance use treatment continuum (Reif et al., 2014). Payors also need to assess the value of PRSS as a reimbursable service (Reif et al., 2014). Additionally, research is needed on matching individuals with the type of support that best fits with their stage of recovery and their personal goals (Bassuk et al., 2016). The current literature overwhelmingly suggests that new models and methods for assessing PRSS outcomes are needed (Barrenger et al., 2019; Chisholm & Petrakis, 2020; Cronise et al., 2016), but that in order to do this, the role and activities of the PRSS within existing recovery-oriented

systems of care must be clarified (Ashford et al., 2018b; Johnson et al., 2014; White, 2009). Studies also indicate that in order to inform the literature on the effectiveness of the PRSS role it is imperative to engage employed PRSS (Ashford et al., 2018b; Neale et al., 2016). Thus, this study is designed to examine PRSS perception of their role and service activities in comparison with national standards and competencies in addition to examining PRSS perception of fit within recovery-oriented systems of care model, the ROSC and RREM. The ultimate goal of this work is to guide the conceptualization of a framework for adequately measuring PRSS outcomes to better understand which components of the PRSS service continuum are most effective.

Chapter 3. Methods

Research Design Aim 1: Focus Groups

A sequential exploratory mixed-methods design (Pluye, 2014) was utilized to engage PRSS professionals in five states of Central Appalachia (KY, NC, TN, VA, WV) regarding their work role(s), service activities and engagement with the ROSC and RREM models. As noted previously, there is a scarcity of empirical literature that considers the voices and lived experience of employed PRSS or their perspective on the implementation of recovery-oriented models of service delivery (Chisholm & Petrakis, 2020; Hymes, 2015). Therefore, it was essential to engage PRSS in survey development through this mixed methods approach. In Aim 1, the qualitative component of this sequential study, a non-purposive snowball sample of Central Appalachian PRSS were recruited into two focus groups to inform the development of a quantitative survey instrument. An expedited thematic analysis was conducted on data collected in Aim 1. In Aim 2, an anonymous web-based self-administered survey was pilot-tested and thereafter disseminated to a convenience sample of PRSS by state certification bodies, accredited training agencies and state-wide associations in each of the five states. The full list of approved agency contacts can be found in Appendix C. Descriptive statistics, scale validation, and logistic and linear regression analyses were conducted on the sample of completed surveys. Survey results and analytic findings are presented in Chapter 4 and will be communicated externally in the form of policy or informational briefs to appropriate target audiences as a component of study Aim 3.

The ETSU Institutional Review Board (IRB) approved the study on January 7, 2021, prior to the initiation of all study aims. Below, methods for each aim are elaborated upon.

Participants. Ten certified employed PRSS from each of the five states in the identified sample area (KY, NC, TN, VA, or WV) participated in one of two 90-minute virtual focus groups conducted on January 29, 2021 and February 4, 2021. An additional notetaker, an employed PRSS within the ETSU Addiction Science Center (ASC), also attended each focus group and recorded notes and themes to supplement the analysis. Participants were compensated with a $25 Amazon gift card sent via email at the conclusion of each focus group.

Participant demographics are demonstrated in Table 1 below. Focus group two did not include a Tennessee participant due to loss to follow up, but a wait-listed Kentucky participant was able to attend.

Table 1

Focus Group Participant Demographics (N= 10)

Participant Demographics	**Focus Group 1**	**Focus Group 2**
Gender	Female: 4 Male: 1	Female: 3 Male: 2
Age	25-34: 1 35-44: 2 45-54: 1 55-64: 1	35-44: 1 45-54: 2 55-64- 2
Ethnicity	White: 4 Black: 2	White: 4 Black: 1
Years in recovery	*M= 9* years	*M*= 12 years
Education	High school: 2 Some college: 1 Bachelors: 1 Masters: 1	High school: 2 Bachelors: 2 Associate: 1
Work setting	Prevention: 1 Recovery Community Center: 1 Community Mental Health: 1 Non-profit: 1 Other: 1	Community mental health: 3 Private behavioral health: 1 Peer respite center: 1
Duration of time employed as PRSS	*M*= 4.5 years	*M*= 8 years
State Working	States represented: KY (1), NC (1), TN (1), VA (1), WV (1)	States represented: KY (2), NC (1), TN (0), VA (1), WV (1)

Materials. The semi-structured interview guide utilized in each focus group (Appendix B) was constructed based on topics elicited during the early stages of developing the quantitative instrument (Appendix E). These topics were informed by the literature review and included a number of existing qualitative and quantitative survey variables (Chisholm & Petrakis, 2020; Collins et al., 2018; Cronise et al., 2016; Johnson et al., 2019; Lapidos et al., 2018; Pantridge et al., 2016) and components of the RREM (Ashford et al., 2019) and ROSC models (Kaplan, 2008). Each 90-minute semi-structured focus group was hosted and recorded in the Zoom platform. As documented in the IRB, the ASC's Zoom subscription indicated that all recordings would be automatically stored as an MP4 and transcribed within the software settings of the Center account. However, within 3 days of recording the final focus group on February 4th, an ASC employee inadvertently deleted the recording of focus group one, and thus, both the transcription and audio file were not retrievable. After lengthy communication with Zoom, they determined that these files could not be recovered. At this time, the study investigator communicated with the university-approved dissertation committee regarding next steps. The committee determined through email communication that the detailed notes from the investigator and note-taker were sufficient for a basic analysis and could adequately supplement the audio and transcript from the second focus group.

Design. Focus groups were preferred over individual interviews in this sequential exploratory mixed methods study as interactions among participants in different states and work settings were expected to provide depth of content and stimulate discussion (Curry 2009). The focus groups were designed to serve four purposes: 1) to inform the development of the quantitative survey through item generation and item refinement (Nassar-McMillan & Borders, 2002); 2) to gather a more in-depth understanding of the importance of this research topic to the

study population (O'Brien, 1993); 3) to consult the study population about recruitment procedures for the eventual online survey; and 4) to build support for the survey among members of the study population (Nassar-McMillan & Borders, 2003). The methods for qualitative analysis were derived from a review of the text, "*Qualitative Methods in Public Health: A Field Guide for Applied Research*," (Tolley et al., 2016). They were also informed by the mixed-methods approach used in the Portland Men's Study whereby focus groups were used as a resource for the design of a quantitative survey of social relationships and health behavior (O'Brien,1993). These expedited methods were utilized to inform the development of the quantitative instrument (Aim 2).

An initial draft of the quantitative survey instrument served as the framework for the development of the qualitative interview guide, designed to cast a broad net answering the call in the literature for an overall better understanding of PRSS work roles and activities. By design, the focus group interview guide investigated global themes such as, what is the most important thing you do in your work as a PRSS? And, how did your training prepare you for this work? The process also included an overview of the ROSC and RREM models and existing language in the current literature to identify PRSS engagement with these terms and models. Finally, participants were asked to respond to some of the more sensitive questions in the quantitative instrument, such as financial fragility, to see if this question might be offensive to future participants.

Procedures. Employed PRSS professionals in the designated five-state Central Appalachian region were recruited via a snowball sampling method through affiliates of the East Tennessee State University (ETSU) Addiction Science Center (ASC), Opioid Research Consortium of Central Appalachia (ORCCA) or through state certification bodies in the 5-state

area. An introductory email describing the nature of the study was sent to ASC and ORCCA network partners throughout Central Appalachia and also to directors and staff of state certification bodies and accredited training agencies in November 2020. After this initial contact, several follow up emails and conversations clarified study aims and recruitment processes. IRB documentation was provided to all engaged partners and one director from North Carolina requested a Zoom meeting to better understand the study and recruitment request. Upon completion of this introductory phase, one identified "recruiter" from each state sent the IRB-approved introductory email to individual or groups of PRSS. Interested participants were then asked to confirm participation via email and were then sent a survey link containing the informed consent document (ICD) and relevant demographic information. All ICD's were reviewed and approved prior to sending the calendar invitation and Zoom link to participants.

At the beginning of each focus group, the facilitator summarized the contents of the ICD and confirmed that all still agreed to participate before starting the Zoom recording. The notetaker was introduced during both focus groups and then turned off their video keeping detailed notes throughout the duration of the focus group. The facilitator utilized the interview guide to lead the conversation asking each participant to provide feedback for each question while also allowing for interaction between participants. The facilitator also served as the time-keeper during both focus groups and moved the conversation forward as needed to ensure all questions were covered. Each group took one 5-minute break approximately forty-five minutes into the discussion. Amazon gift cards ($25) were sent to each participant via email on record at the conclusion of each focus group.

The following qualitative analytic procedures based on Tolley's qualitative methods text (Tolley et al., 2016) were conducted after the completion of each focus group to expedite the

dissemination of the quantitative instrument: 1) words, phrases or themes resulting from each survey prompt were grouped together on the basis of similarity; 2) additional global sub-themes, content, and tone were listed on the basis of similarity; 3) these lists were reviewed to inform the inclusion or exclusion of existing quantitative survey items and to generate new items in the final instrument as indicated. A summary of themes and relevant quotes can be found in Appendix D, Focus Group Analysis and in Chapter 4: Results.

The final step in Aim 1 was to prepare the final draft of the cross-sectional web-based survey to include new variables representing novel themes identified during the qualitative analysis. Several survey variables were derived directly from the literature, all of which are noted in Appendix E Quantitative Survey. For example, several questions were gleaned from components of the ROSC (Kaplan, 2008) or RREM (Ashford et al., 2019) models such as primary work setting (question 15 and 26) and key work activities (Question 27). Additionally, Lapidos survey of peer support specialists (Lapidos et al., 2018) served as a model for questions related to job satisfaction, self-rated skills, and financial well-being (question 20, 25, 61). Questions related to stigma were modeled after Smith's enacted stigma scale (Smith et al., 2016). The final draft of the quantitative instrument, Appendix E, also included demographic variables in the last section of the survey such as age, gender identity, ethnicity, level of education, cultural identity, political and religious affiliation, and religiosity. The final instrument grouped variables into the following categories to create an organized flow for survey respondents, 1) Work setting, and roles and activities within the recovery ecosystem, 2) Training, 3) and Demographics and personal recovery characteristics.

Of note, upon request by the IRB of record, questions in Section Four began with the following explanation: "The following questions are more personal in nature as they will ask for

information about your recovery process. Each question will have an option entitled "Prefer not to answer," so please feel free to choose this response for any question that you do not wish to answer."

The final draft of the survey was then pre-tested in paper form for accuracy and time by willing participants within the ASC, members of the dissertation committee, and other ETSU faculty and students. Approximately five people reviewed the draft survey and submitted feedback via handwritten notes or track changes on the survey draft and others sent feedback summarized in an email. All feedback was reviewed for inclusion or exclusion in the final survey draft based on alignment with study methods and aims and very few additional edits were needed. These edits included re-ordering sections of the survey to improve survey flow and others were specific to word changes that would reduce potentially confusing or theoretical terminology.

After this pre-test phase, the survey was programmed into the Qualtrics platform with assistance from the ETSU Applied Social Research Lab. Critical decisions about question type and ease of analysis were made at this time, however, no questions were substantially different from the paper version of the survey. Additional volunteers were recruited to test the instrument and link in the Qualtrics format, and new edits were made to improve survey process and flow. The final draft of the survey was approved by the IRB as a minor study modification on July 21, 2021.

DrPH Competencies Addressed.

- Data and Analysis Competency #2: Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.

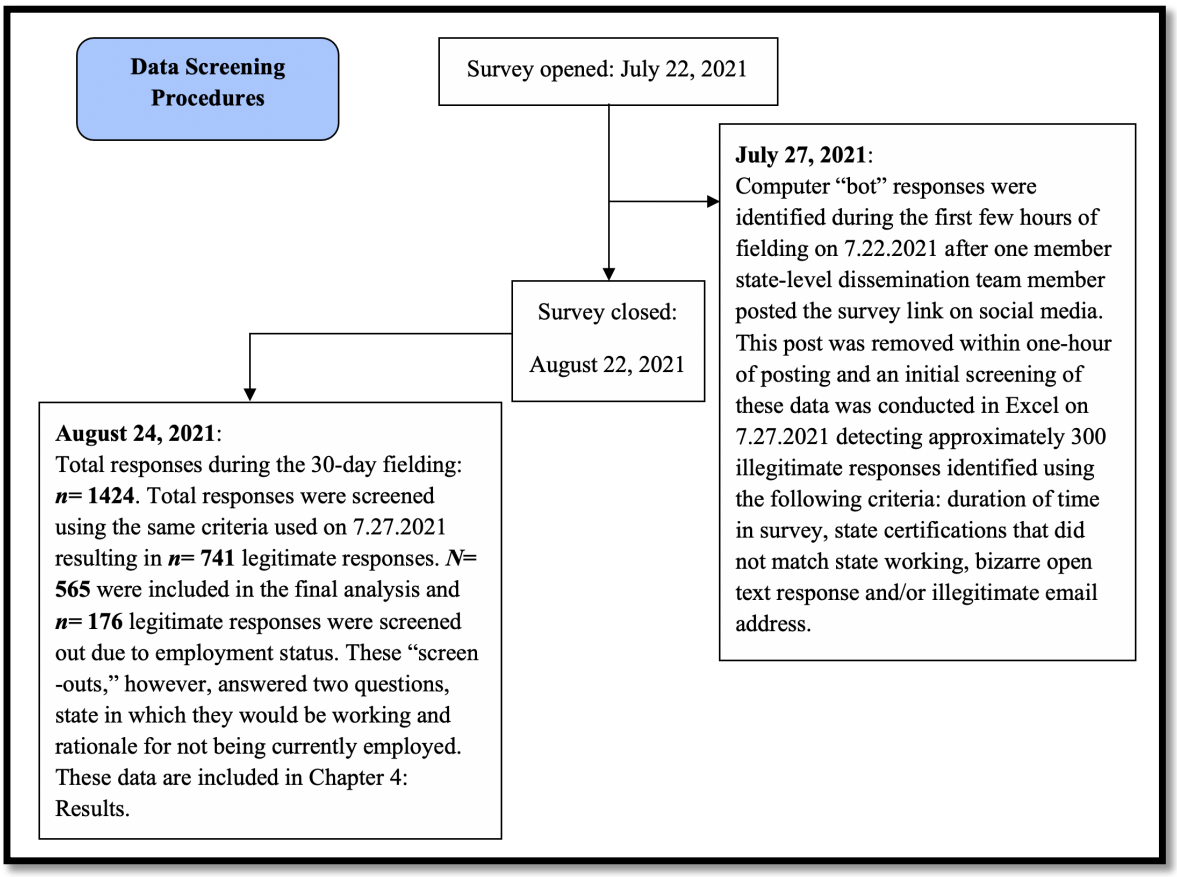
- Education and Workforce Development Competency #18: Assess an audience's knowledge and learning needs.
- Community and Behavioral Health Foundational Competencies # 6 and #7: Facilitate the identification of health needs, interests, capacities and disparities of communities and special populations using principles and practices of community-based participatory research, and conduct qualitative research using well-designed data collection and data analysis strategies.

Research Design Aim 2: Anonymous Web-based Survey

Participants. The sample population for the quantitative survey included state-certified PRSS in the identified 5-state region of Central Appalachia who were currently employed or previously employed for at least one-year and at least 18 years of age. The quantitative survey was fielded from July 22 to August 22, 2021, resulting in 1424 total responses. However, 647 of these responses were ultimately identified as computer "bot" responses. Figure 1 outlines the data screening process.

Figure 1

Data Screening Procedures



Materials. The anonymous web-based self-administered survey was programmed into Qualtrics via the ETSU Applied Social Research Lab (ASRL). Upon completion of the 30-day survey period. All initial data screening was conducted using Excel version 16.53 and then uploaded into SPSS 28.0 for final analysis.

Design. The primary goal of this study was to describe the roles and activities of PRSS within the context of the recovery ecosystems of Central Appalachia. Due to the exploratory nature of this study, a priori hypotheses were not specified. Variables in the quantitative survey were gleaned from constructs in the existing literature, specifically those that related directly to the ROSC (Kaplan, 2008) and RREM frameworks (Ashford et al., 2019), or developed following

the thematic analysis of focus groups in Aim 1. It is important to note that PRSS exist as both users and providers within the ROSC and RREM frameworks. The following table illustrates connections between quantitative survey variables and the theoretical models.

Table 2

Variables of Interest and Connection to Theoretical Models

Model	Intersection of Variables and Categories of Interest with Theoretical Models
Recovery Ready Ecosystem (RREM)	Individual and Intrapersonal: • Demographic • Personal recovery • Financial fragility • Rationale for working as a peer • Strength of skill in peer role Community level: • Peer service: -work setting -work roles Institutional Level: • Peer certification • Peer training • Professional advancement • Job Description • Supervision Requirements
Recovery-Oriented Systems Of Care (ROSC)	Menu of services: • Work settings • Professional activities Systems of Care: • Care coordination • WRAP • COVID response • Advocacy • Stigma (individual and institutional) Health, wellness and recovery • Perception of role as social connector • Relationship and mentoring • Meeting clients where they are on the continuum of care

Once constructed and pilot-tested, the survey was disseminated via an IRB-approved email and embedded Qualtrics hyperlink to a convenience sample of PRSS in the 5-state region.

Though a probability sample would have been preferred, certification bodies do not typically keep current lists and contact information for employed PRSS, and while many do keep contact information for persons who received certification, most are unable to share these publicly. In order to increase survey participation, respondents were provided an opportunity to enter a gift card lottery. Each of the first 100 participants were eligible for two entries for up to two $75 Amazon gift cards. Participants after the first 100 had an opportunity to enter one drawing for one $75 gift card. After the initial data screening, all legitimate surveys that met the inclusion criteria were assigned a random number for entry into the Amazon gift card lottery resulting in two separate winners who were emailed gift cards on September 3, 2021.

Procedures. The quantitative survey was programmed into Qualtrics, pilot-tested as described in Aim 1 and IRB approved by IRB in its final form on July 21, 2021. Appendix C Sampling Frame was amended to reflect new contacts and/or remove any contacts that were no longer able to disseminate the survey. The survey launched on July 22, 2021 via an email disseminated by the pre-approved sample frame. Each IRB-approved email summarized the study and provided information about the gift card lottery and contact information for the study investigator. A hyperlink to the web-based survey was embedded in this email and directed participants to the informed consent document (ICD) that included risks and benefits of survey participation. At this time, participants had the opportunity to consent to participate or decline at which time the survey ended. Upon completion of the survey, participants were given the opportunity to provide contact information in an external link for the gift card lottery. They were also able to request a copy of final survey results and/or provide contact information for participation in future research. Each agency in the approved sample frame shared the survey link on July 22nd and all but one agency also sent two reminders, one at 2-weeks post-release and

another one-week prior to the survey closing date of August 22. The study investigator confirmed with each agency that the follow up emails were disseminated. Table 3 includes the procedures for each analytic step conducted after the completion of the initial data screening in Excel and final data import into SPSS on August 24th.

Table 3

Analytical Plan for Quantitative and Qualitative Analysis of Survey Data

Step 1	Clean and code survey data. This process included proofreading scores in the data as compared to the response sets in the survey variables identifying inconsistencies across variables. Initial univariate screening of scores on categorical variables to identify outliers, normality of distribution and patterns of missing responses. Decisions were made during this time about how to handle and code missing data and outliers. Additionally, for survey questions 26-28 (Appendix 5) participants were asked to use a slider bar to estimate the percent of time they spent in recovery settings and PRSS activities within the RREM and ROSC models. These slider bars were set to not exceed one-hundred percent, however, this function did not work properly during survey fielding resulting in multiple responses that exceeded 100%. These responses (n= 164) were coded as missing thus removing them from the final analysis.
Step 2	Conduct and review descriptive statistics to include mean, standard deviation, frequency, and percent for each variable in the final data set. Where applicable, results were then placed in the context of the proposed theoretical models of the ROSC and RREM and compared to other constructs or variables presented in Chapter 2.
Step 3	Utilize findings of Step 2 to conduct a more thorough analysis for variables of interest, professional advancement, job satisfaction, and financial fragility. 1. **Professional advancement**: Initial descriptive analyses indicated that while respondents were satisfied with many features of their work, professional advancement opportunities were lacking for some (n=180). This finding was consistent with findings from previous work (Lapidos et al., 2018). Thus, a binary logistic regression model was designed to further explore this categorical dependent variable (DV) of interest. Independent variables (IV) were selected based on RREM and ROSC theory and existing literature in the content area. Initial screening for continuous variables included scatterplots to look for obvious outliers and unusual cases (Field, 2018). Additionally, a correlation matrix and bivariate analysis were performed between the DV and proposed IV's excluding IV's that were not correlated at a minimum threshold of p=.25. Additional correlation matrices and bivariate analyses were performed between each IV of interest to check for multi-collinearity. This process resulted in fewer predictor variables and an overall more parsimonious model.

Step 4	2. **Job Satisfaction**: The categorical job satisfaction variable, a second DV of interest, consisted of 8 items that were examined using exploratory factor analysis indicating a single factor with a resulting Cronbach's Alpha of .88, thereby informing the development of a continuous job satisfaction index creating a score for each response on the Likert scale (Very satisfied= 5, Satisfied= 4, Undecided= 3, Dissatisfied= 2, Very Dissatisfied= 1) with a total score of 40 for very satisfied or 1 for very dissatisfied. Next, a multiple linear regression was conducted, with this continuous variable as the DV. Predictors were determined based on the current literature and correspondence to theoretical models and further evaluated against the outcome via correlation matrices and bivariate analysis. Categorical variables of interest were recoded into dummy variables (0 or 1) compared to predetermined reference categories. Predictors were included in the model if the correlation to the outcome variable was less than p= 0.25. Potential for multi-collinearity among predictors was also evaluated a priori among the predictor variables with a threshold of 0.8 correlation coefficient for exclusion. 3. **Financial Fragility:** Existing literature also indicates that many PRSS in the US self-report financial fragility. In this sample, approximately 30% (*n=162)* reported that they would not or probably would not be able to come up with $2,000 in one month if needed for an emergency. The obvious connection between professional advancement opportunities, job satisfaction and the concept of financial fragility, informed the development of a final binary logistic regression model to explore potential predictors of financial fragility in this population. Similar screening procedures described in items 1 and 2 above were utilized for this categorical DV of interest prior to fitting the model. Initial a priori screening of predictors were conducted to exclude predictors that were not correlated with the outcome at a minimum threshold of p=.25. Additional correlation matrices and bivariate analyses were performed between each predictor of interest to check for multi-collinearity excluding items that were correlated more than the threshold of .08. Financial fragility was then recoded as a binary categorical response, yes=financially fragile (respondents who answered they "could not" or "probably could not" come up with $2,000) and no=not financially fragile for respondents who "certainly could" or "probably could" come up with these funds, prior to running the model. A thematic analysis was conducted on three open text questions: 1) What do you believe is the most important aspect of your work as a PRSS? 2) What in your opinion is the relationship like between PRSS and mental health counselors or therapists? 3) What if anything could have improved your training to better prepare you for work in the field?
Step 5	Results of descriptive statistics, measures of central tendency, and regression models were verified by the dissertation chair and committee members prior to summarizing results for dissemination.

DrPH Competencies Addressed.

- Data and Analysis #2: Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.
- Education and Workforce Development #18: Assess and audience's knowledge and learning needs.

Research Design Aim 3: Dissemination

There are two main study Aims, and a third Aim, focused on dissemination of the results to the participants and other stakeholders. This section describes the procedures used for dissemination.

Participants. Lay summaries of overall study results and state specific reports will be prepared and disseminated to survey participants who requested these results, members of state certification bodies and associations who disseminated the survey. Additional summaries will be provided to national certification bodies such as the National Association for Addiction Professionals (NAADAC), Mental Health America, and the International Certification and Reciprocity Consortium (IC&RC), in addition to third-party payors who provide reimbursement for PRSS services in the Central Appalachian region following introductory communications to summarize the work. Findings will also be presented at relevant state, regional and national conferences and formal manuscripts will be prepared for submission to pertinent peer-reviewed journals.

Materials. ETSU creative services will be utilized for the design of professional summaries or briefs of study results for lay audiences. In addition, ETSU instructional technology experts will be utilized to design web-based versions of each of document to be shared in multiple electronic formats.

Design. Each document will include ETSU ASC or ORCCA logos in order to bridge this study with ongoing recovery research within these entities. Furthermore, all attempts will be made to create accessible documents with non-academic language and appropriate literacy levels to ensure that a wide variety of audiences can interpret and utilize the findings.

Procedures. The first product, a summary of the overall results has been drafted as Appendix F and will be sent to PRSS credentialing bodies and statewide associations that assisted with participant recruitment and to each survey respondent that requested a copy of study results. Additional state specific reports will be prepared and disseminated to the same groups mentioned above and other interested parties. It may also be useful to create a summary of survey results for circulation in the regional press and on social media networks and webpages that advocate for improved treatment for persons with SUDs such as Shatterproof, Faces and Voice of Recovery, and the Harm Reduction Coalition. Furthermore, it is expected that scientific manuscripts will be prepared and submitted to appropriate peer-reviewed journals in addition to applications for external funding to extend the initial findings of this work.

DrPH Competencies Addressed.

- Leadership, Management and Governance #4: Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners
- Programs and Policies #16: Integrate scientific information, legal, and regulatory approaches, ethical frameworks and varied stakeholder interest in policy development and analysis
- Leadership, Management and Governance #10: Propose strategies to promote inclusion and equity within public health programs, policies and systems

- Community and Behavioral Health Concentration Competency #5: Translate theories, conceptual paradigms and evidence to inform planning, implementation, evaluation and dissemination of innovative, tailored public health interventions

Chapter 4. Results

Results Aim 1: Conduct focus groups with currently employed PRSS in Central Appalachia to inform the development of a cross-sectional quantitative survey instrument.

Saturation, the point at which no new ideas were generated, occurred at the conclusion of focus group two. Participants overwhelmingly approved of the survey content and design and only two new themes were identified during the thematic analysis of the focus group transcripts. A thematic analysis based on methods described in Chapter 3 was conducted from the detailed notes of Focus Group 1 and the notes and transcript resulting from Focus Group 2. The focus group interview guide (Appendix B) was utilized to elicit supplemental information around existing topics in the draft quantitative instrument and to ascertain PRSS familiarity with existing terminology from the peer-reviewed literature including theoretical models such as the ROSC and RREM. A full summary of emergent themes from this analysis can be found in Appendix D.

Data from the focus groups (N= 10) identified a disconnect between the RREM and ROSC frameworks and the work and training of the PRSS. No participant had ever heard of the RREM and only 20% (2 of 10) had ever heard of the ROSC. Many indicated that the model of choice for PRSS was WRAP (Wellness Recovery Action Planning); many had been trained in this model and were using it frequently. When asked about the most important thing they do in their work as PRSS, participants used words such as empower, advocate, connect and listen. One participant said, “This job is more to me than anything in this world. Don’t know what I would do if I couldn’t do this job anymore.” Furthermore, when asked if their state certification training prepared them for their work as a PRSS, participants indicated there was not enough training about medication assisted treatment (MAT), billing, note taking and self-care. Participants were also asked what kind of stigma they face in their work as a PRSS and many indicated this was a

serious problem both within their work settings and the community. Four participants indicated that they experience stigma, tension, and jealousy from other peers. One participant said, “When I became lead peer support, other peers tried to get me fired.” Another said, “I don’t always feel supported by other peers, especially if I am in the facilitator or training role.” Many also indicated they did not have career advancement opportunities and were not treated as equals. One participant stated:

> We are at a glass ceiling. I talked to somebody in human resources today about getting together and starting to have a conversation about career ladders for peers and internships because peers go through this training and do all this hard work, then have nowhere to get their hours and they are just floundering around and so when they get in these positions because clinicians don’t really know what we do and who we are so we are tasked with driving people around, things that peers were not meant to do. There’s this hierarchy that is very noticeable. It is not discreet.

Finally, when asked their thoughts about MAT, many indicated that it was not available for them when they were in early recovery. Many described initial misunderstanding about the use of MAT, however, once they were more informed about the efficacy and role of MAT in treatment, they were supportive. Several cited the concept of multiple pathways to recovery, a term frequently used in the literature (Ashford et al., 2019; Kelly et al. 2017).

Novel themes presented during the focus groups included worries about homelessness and human trafficking, spirituality, resource gaps and peer to peer and peer to counselor tensions. Two additional questions were added to the quantitative instrument to capture these themes and existing questions relating directly to the ROSC and RREM were eliminated from the survey

draft. Overall, results of the thematic analysis revealed that the questions in the draft quantitative survey sufficiently covered the breadth and depth of existing topic areas.

Results Aim 2: Disseminate the cross-sectional quantitative survey instrument informed by Aim 1 to an adequately powered sample of employed PRSS professionals in Central Appalachia.

Total valid responses to the quantitative survey instrument were *n*= 741. One-hundred and seventy-six (176) participants were screened out due to employment eligibility, leaving *n* = 565 complete surveys. Screened out participants were asked to respond to two questions, state in which they would work if they were working, and rationale for not being employed currently or previously for 12-months. Table 4 below summarizes these responses.

Table 4

Participants Screened Out Due to Employment Status (n=176)

Survey Variable and survey question number.	**Response Type (Count and Percent)**
Q5: What state do you work in?	Kentucky= 1 (1%) North Carolina= 110 (63%) Tennessee= 8 (5%) Virginia= 12 (7%) West Virginia= 10 (6%)
Q4: Main reason for not being employed (check all that apply).	Not able to fulfill role= 65 (37%) COVID-19= 13 (8%) Impacts disability benefits= 7 (4%) Unable to maintain recovery= 2 (1%) Co-workers did not treat me well= 2 (1%) Justice system involvement= 2 (1%) Fired= 2 (1%) Laid off/ job ended= 2 (1%) Temporary seasonal= 2 (1%) **Other (please describe) = 57 (32%)
**Other reason for not being employed (n= 57)	*Primary themes of text response and count*: Currently employed in a non-PRSS position= 36 Can't find a position= 24 Does not pay enough= 7 Newly certified= 5

Baseline demographics and Rationale for Working as PRSS

Table 5 presents demographic information for the total sample of complete surveys and for each state in the sample population. Some respondents work in multiple states and thus response totals across states do not add up to *N*= 565.

Table 5

PRSS of Central Appalachia Demographics Total and by State (N=565)

	Total *N*= 565	**KY *N*= 35**	**NC *N*= 295**	**TN *N*= 82**	**VA *N*= 92**	**WV *N*= 70**
	Frequency and Percent	**Frequency and Percent**	**Frequency and Percent**	**Frequency and Percent**	**Frequency and Percent**	**Frequency and Percent**
Gender						
Female	363 (67%)	22 (63%)	196 (69%)	60 (74%)	54 (62%)	37 (55%)
Male	178 (33%)	12 (34%)	85 (30%)	21 (26%)	33 (38%)	30 (45%)
Trans/ Gender Queer	15 (1%)		4 (1%)			
Ethnicity						
Hispanic	18 (3%)	4 (11%)	7 (2%)	2 (2%)	5 (5%)	2 (3%)
Black	139 (25%)	4 (11%)	107 (36%)	7 (9%)	21 (23%)	1 (1%)
White	384 (68%)	27 (77%)	167 (57%)	73 (89%)	60 (65%)	65 (93%)
Asian	1 (<1%)	0	0	0	1 (1%)	0
Native Amer. AK Native, Amer. Indian	18 (3%)	1 (3%)	14 (5%)	2 (2%)	1 (1%)	0
Other	10 (2%)	10 (29%)	4 (1%)	1 (1%)	4 (4%)	1 (1%)
Education						
High School Diploma or GED	187 (34%)	17 (49%)	77 (27%)	31 (38%)	27 (31%)	38 (56%)
Associate or Technical Certificate	139 (25%)	7 (20%)	74 (26%)	20 (25%)	26 (30%)	14 (20%)
Bachelor's Degree	140 (26%)	8 (26%)	79 (28%)	19 (24%)	24 (28%)	13 (19%)

Master's Degree	67 (12%)	2 (6%)	46 (16%)	11 (14%)	8 (9%)	1 (2%)
Doctoral degree	10 (2%)	1 (3%)	6 (2%)	0	1 (1%)	2 (3%)
Working in **Appalachian** vs. **Non-Appalachian** County	251 (44%) 314 (56%)	10 (29%) 25 (71%)	107 (36%) 188 (64%)	55 (67%) 27 (33%)	17 (18%) 75 (82%)	70 (100%) 0

Note: Percentages across demographic categories will not always add up to 100% due to respondent ability to check all that apply.

Table 6 presents additional information including respondents average age, years in recovery, and number of years working in the addictions field.

Table 6

PRSS of Central Appalachia-Average Age, Years in Recovery and Years Working in the Field

	Total Sample *N*= 565 **Mean, Minimum, Maximum and Standard Deviation (*SD*)**	**KY *N*= 35** **Mean, Minimum, Maximum and Standard Deviation (*SD*)**	**NC *N*= 295** **Mean, Minimum, Maximum and Standard Deviation (*SD*)**	**TN *N*= 82** **Mean, Minimum, Maximum and Standard Deviation (*SD*)**	**VA *N*= 92** **Mean, Minimum, Maximum and Standard Deviation (*SD*)**	**WV *N*= 70** **Mean, Minimum, Maximum and Standard Deviation (*SD*)**
Age *N*= 526	Mean: 46.37 Min:24 Max: 75 *SD*: 11.561	Mean: 46.42 Min: 24 Max: 72 *SD*: 12.57	Mean: 48.02 Min: 25 Max: 75 *SD*: 11.06	Mean: 44.53 Min: 24 Max: 74 *SD*: 11.74	Mean: 46.32 Min: 24 Max: 72 *SD*: 12.20	Mean: 41.16 Min: 26 Max: 70 *SD*: 10.14
Years in Recovery *N*= 253	Mean: 10.44 Min:1.17 Max: 40.58 *SD*:8.46	Mean: 9.77 Min:1.67 Max: 35.75 *SD*: 8.44	Mean: 10.94 Min:1.5 Max: 39.17 *SD*: 8.64	Mean: 10.85 Min: 2.42 Max: 24.83 *SD*: 5.95	Mean: 13.56 Min: 1.17 Max: 40.58 *SD*: 10.96	Mean: 6.72 Min: 2.17 Max: 30.75 *SD*: 5.75
Years Working in Field N= 493	Mean: 5.99 Min: .08 Max: 40 *SD*: 5.87	Mean: 4.86 Min: .50 Max: 21 *SD*: 3.98	Mean: 6.36 Min: .08 Max: 36 *SD*: 6.03	Mean: 6.47 Min: .25 Max: 40.00 *SD*: 6.47	Mean: 6.32 Min: .08 Max: 29.42 *SD*: 5.84	Mean: 3.80 Min: .50 Max: 23.17 *SD*: 3.67

Rationale for Working in Peer Support

Participants were asked to select the most important reason they became certified as a PRSS and the most important reason they work in peer support. Both questions were modeled after questions in the CPS Career Outcomes Study designed for mental health peers (Goessel et al., 2014). When asked about their rationale for certification, 32% (*n*= 181) selected "Other" reason and provided text responses some of which mirrored selections in the existing response categories. However, of these 181 responses, *n*= 129, answered that they want to help others, give back, and/or inspire hope in others. This "theme" of giving back and helping others was not an option in this question originating from the CPS Outcomes Study (Goessel et al., 2014), and thus it is important to note that it was the most frequently selected response for this question. Seven additional respondents (*n*= 7) indicated in the open-text response that they achieved the certification as it helped with their own recovery. In order, categorical responses to this question were, 28% (*n*= 157) selecting that it was a career and/or educational stepping stone, 27% (*n*= 152) were encouraged to apply by someone else, 5% (*n*= 29) were required by their employer, another 5% (*n*= 25) said they would be eligible for higher pay and/or career advancement, and 3% (n= 16) indicated they would receive professional recognition. Quotes from open text responses for these questions include, "I did not want to forget where I came from," and another, quite different but important quote, "My employer used my recovery as a means to write a contract proposal for PRSS services within the agency."

The next question, "What is the most important reason you work in peer support?" included the following ordered responses, 69% (*n*= 386) indicated they wanted to give back to others, 20% (*n*= 113) selected personal meaning, 2% (*n*= 11) responded that the training emphasized recovery language, another 2% (*n*= 9) selected that it would help them to feel valued

by others and 8% (*n*= 42) selected other, however, most of these responses mirrored the sentiment of giving back to others.

Additional results from the quantitative instrument are presented below in the following order: 1) Training preparation, work setting, and roles and activities within the recovery ecosystem, 3) Beliefs and perceptions about PRSS work, and 4) PRSS personal recovery characteristics.

Training and Preparation. PRSS survey respondents reported working as professionals in the addictions field for an average of 6 years (*M*= 5.99, *SD*= 5.88). A number of participants reported certification in multiple states and the range for years of certification was 21 years with the first year of certification noted as 2000, and the most recent certification dates in 2021. Nearly half of the PRSS respondents (*n*= 246) had national certifications in addition to their state level certification, such as NAADAC's National Certified Peer Recovery Support Specialist (NCPRSS), *n*= 117, Mental Health America's National Certified Peer Specialist (NCPS), *n*= 64, and/or the Peer Recovery Credential with the International Certification and Reciprocity Consortium (IC&RC) *n*= 104. When asked to what extent their PRSS certification training prepared them for the work they are doing as a PRSS 63% (n= 350) responded a "great deal", 31% (n= 170) responded that it prepared them "some," and only 7% (n= 36) responded "very little" or "not at all." Two training themes were identified during the thematic analysis conducted in study Aim 2, the need for Adverse Child Experience (ACE) or trauma-training in addition to the need for training to prepare them for working with persons who have been trafficked. Reponses to questions based on these themes in the quantitative instrument (Q 37-38) indicate that 56% (*n*= 311) of respondents had already been trained in ACES and 41% (*n*= 227) had received some training about human trafficking. Table 6 below provides themes from the

additional open text questions, “What if anything could have improved your training experience to better prepare you for work in the field?”

Table 7

Thematic Analysis for Improving the Training Experience (N= 336)

Themes for responses greater than or equal to 10 (*n* >= 10)	**Percent**
Expanded curriculum that is longer or includes specialized training (crisis, trauma, veteran, ethics, HIPAA, etc.).	29%
Real world application training provided by people working in the field or with guest speakers and role play. Also, to prepare for the stigma PRSS face in the field. Live face to face training was also requested in this theme in order to role play and practice real world application.	19%
Training on billing, documentation, note taking	4%
Provide a more supportive environment with mentoring, ongoing support groups and assistance with self-care.	3%

Peer Type and Work Characteristics

Survey respondents self-identified as the following peer “types”: substance use disorder (SUD) peer 20% (*n*= 115), mental health peer 10% (n= 55), both a mental health and SUD peer 60% (*n*= 333), or “other” peer 10% (n= 53). They have been working at their current employment sites for an average of 3.6 years (*SD* 3.78). Ninety percent (*n*= 509) reporting having an established job description and 81% (*n*= 455) were required to receive supervision as a component of their job or certification guidelines. Clinical staff (67%, *n*= 304), other peers (13%, *n*= 59), or others such as managers or directors (20%, *n*= 91) provide this supervision. Hourly wage was reported as: less than $10 per hour (1.2%, n=7), $10-$15 per hour (47%, n=264), $16-20 per hour (33%, n=183), greater than $20 per hour (19%, n=108).

Work Setting and Percent of Time Spent in Settings

PRSS answered two questions related to their work settings. One categorical question asked them to select their primary work setting based on SAMHSA identified settings in which PRSS typically work. Separately, respondents were asked to use a slider bar to estimate the percent of time they spent in each of a number of work settings described in the RREM (Ashford et al., 2019). Results are provided in Table 8 and 9 below.

Table 8

Primary Work Setting (SAMHSA)

What is Your Primary Work Setting (SAMHSA)? Select one. (*N*= 558)	**Valid Percent and count**
Community mental health	26%, *n*= 144
Recovery community center	12%, *n*= 68
Recovery residence	7%, *n*= 37
In-patient treatment	5%, *n*= 30
Medication-assisted treatment (MAT) clinic	5%, *n*= 27
Social services organization	4%, *n*= 24
Homeless shelter	3%, *n*= 19
Justice system	3%, *n*= 18
Drug Court	2%, *n*= 9
Hospital ED	1%, *n*= 8
Church or faith-based organization	1%, *n*= 5
Primary Care	1%, *n*= 5
Collegiate recovery program	1%, *n*= 4
Child welfare agency	.2%, *n*= 1
Other: in the community, prevention, public health or community service board, EMS, Veteran's facility, Faith community, non-profit, harm reduction	29%, *n= 159*

Table 9

Average Amount of Time Spent in RREM Work Settings

What is the Average Amount of Time You Spend in Each of the Following Settings (RREM)? (Total should add to 100%)	Mean and Standard Deviation (SD)
Peer recovery services	*M= 42%, SD= 32.5*
Recovery residence	*M= 22%, SD= 27.2*
Recovery community center	*M= 21%, SD= 23.5*
Recovery informed institutional services	*M= 20%, SD= 24.2*
Recovery community organizations	*M= 18%, SD= 20.9*
Medical treatment services	*M=18%, SD= 21.5*
Harm reduction organizations	*M= 15%, SD= 16.8*
Recovery/drug courts	*M= 14%, SD= 16.3*
Prevention organizations	*M= 12%, SD= 10.7*
Advocacy Organizations	*M=11%, SD= 10.4*
Re-entry services organizations	*M= 11%, SD= 19.5*
Collegiate recovery programs	*M= 11%, SD= 15.7*
Recovery high schools	*M=11%, SD= 17.3*
Mutual-aid organizations	*M= 9%, SD= 7.0*
Other: (Examples: behavioral health/mental health, health department, homeless shelter, county jail, client's homes, overdose response team)	*M= 55%, SD= 39.9*

Work Roles and Activities

PRSS were asked about the percent of time they spend engaging in a number of work roles and activities based on the RREM model and SAMHSA defined categories of peer support. SAMHSA classifies peer support in four distinct categories. PRSS were asked to use as slider bar to illustrate percent of time spent in each of four following categories, 1) emotional (mentoring

and peer-led support groups), 2) affiliational (recovery centers, sports leagues, and socialization opportunities), 3) instrumental (access to child care, transportation), 4) informational (parenting classes, job readiness training). Respondents indicate that they spend a majority of their time providing emotional support. Results indicating respondents work roles are in Table 10 below.

Table 10

Percent of Time Engaging in SAMHSA-defined Peer Support Types

	Mean	*SD*
Emotional	52%	28.5
Affiliational	28%	19.6
Instrumental	23%	14.6
Informational	23%	12.6

Furthermore, Ashford proposes the following "10 Key Strategies" used by PRSS within their various recovery ecosystems (Ashford et al., 2019). Respondents utilized a slider bar designed to add up to 100% to quantify total percent of time engaged in the following strategies. Of note, one respondent mentioned in the "other, please describe," text box that these "questions are not worded in a way to properly project percent of tasks/duties. All tasks are done in my work environment in flux as needed." Table 11 below describes the average percent of time PRSS report spending in each of the RREM proposed key peer strategies.

Table 11

Mean Percent of Time Engaged in PRSS Strategies (RREM)

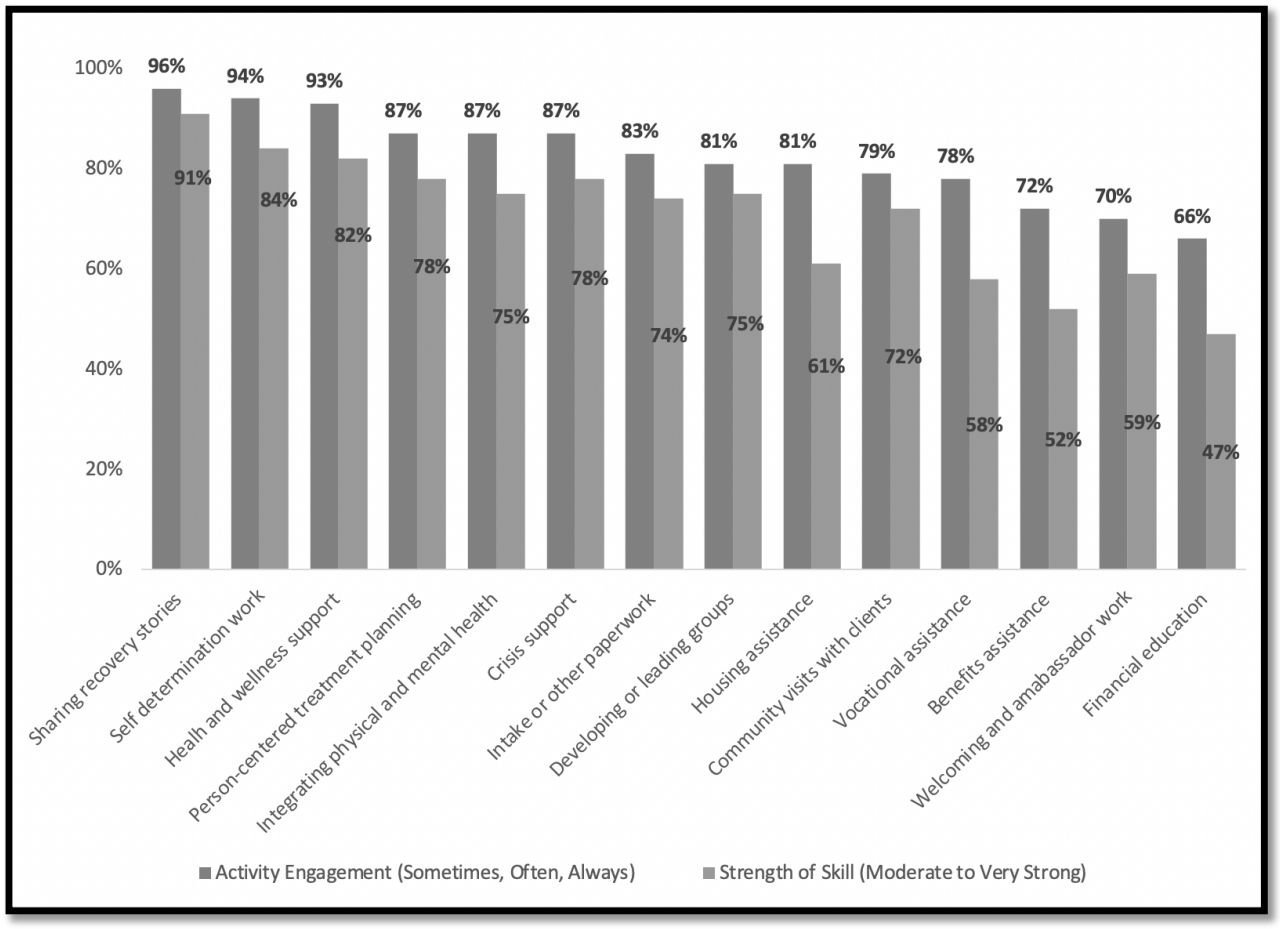
	Mean	SD
Offering legal advocacy	10%	8.5
Providing opportunities for individuals to occupy valued roles	11%	8.1
Early identification and engagement	14%	10.4
Offering education	15%	22.9
Providing post-treatment monitoring and recovery coaching	16%	12.5
Providing effective treatments and interventions	16%	14.1

Connecting between individuals in recovery and the larger recovery community	16%	12.9
Increasing motivation for change	19%	14.5
Use of role modeling	20%	17.1
Offering meaningful recovery support service (housing, employment, education)	21%	16.5
Other text that does not correspond to choices above: case management, clinical notes, transportation, crisis intervention, group facilitation, online peer support, re-entry in justice settings and harm reduction	28%	26.7

The final question related to work activity was modeled after a 2018 study of PRSS that asked respondents to indicate frequency of time spent in a given activity using a 5- point Likert scale (never, rarely, sometimes, often, always), followed by a strength of skill question as it related to the specific activity. For example, when respondents reported that they engaged in the activity at least "sometimes," strength of that particular skill was measured by self-report using a 4-point Likert scale (not at all strong, slightly strong, moderately strong, very strong) (Lapidos et al., 2018). Figure 2 bar graph below demonstrates the percent of respondents who engage in each activity at least "sometimes." The second bar demonstrates the percent of respondents who feel that their skill is "moderately strong" or "very strong" for that particular activity. The scale of difference between frequency of engagement and strength of skill is greatest for housing assistance, benefits assistance, vocational assistance and financial education.

Figure 2

Activity Frequency and Strength of Skill (N=565)



Beliefs and Perceptions about PRSS Work

What do you believe is the most important aspect of your work as a PRSS?

Respondents were asked to complete an open-text question describing what they believe to be the most important aspect of their work. Qualitative analysis uncovered the following themes presented in Table 12 below.

Table 12

Thematic Analysis of Open-text Response to Most Important Aspect of PRSS Work

Theme for counts >= 10	Count
Helping others: other key words, support, motivation, assistance, growth, and hope	256
Relationship: other key words- meeting people where they are, understanding, relating, listening and showing empathy	117
Lived experience: other key words- role modeling, being an example, sharing recovery stories	92
Serving as a bridge between resources and other providers: other key words- networking, connecting to resources, navigating systems	15
Advocating: other key words- stigma, systems change, social justice, building the PRSS field	13
Personal meaning: other key words- helps my career or my personal recovery	10

Stigma

PRSS respondents were asked to answer a question related to perceived stigma in the workplace due to their drug use or mental health history (Smith et al., 2016). Respondents indicating that they were in recovery from a) alcohol or drug use, b) mental health disorders were asked stigma-related questions based on this selection. Respondents that answered "both" responded to this question twice, once for each historical disorder from which they are now in recovery. Table 13 below illustrates these results.

Table 13

PRSS Responses to Smith Enacted Stigma Scale

		Never	Rarely	Sometimes	Often	Always
Co-workers have thought that I cannot be trusted	Mental Health	70%	14%	11%	3%	1%
	Alcohol or Drug Use	8%	16%	11%	3%	1%
Co-workers have looked down on me	Mental Health	2%	18%	14%	6%	1%
	Alcohol or Drug Use	0%	17%	18%	5%	1%

Co-workers have treated me differently	Mental Health	8%	16%	18%	6%	2%
	Alcohol or Drug Use	6%	17%	18%	7%	1%
Co-workers have not listened to my concerns	Mental Health	7%	18%	16%	7%	2%
	Alcohol or Drug Use	5%	18%	17%	9%	2%

Counselor Peer Relationship

Respondents were asked in open text format the following question, "What in your opinion is the relationship like between PRSS and mental health counselors/therapists?" The thematic analysis generated the following themes and response counts (Total *N*= 496):

1. Positive (*n*= 253, 51%): These respondents indicated that the relationship was very positive, welcoming, collaborative, even wonderful and extremely beneficial for clients. "Great, they value my input and opinions and I value there's. They are very respectful of my role in treatment."
2. Negative (*n*= 73, 15%): These respondents indicate extremely negative, contentious and competitive relationships that were potentially harmful to the work environment and the client. Representative quotes include: "There is a strong atmosphere of miseducation between the two roles. There has been no definite training, conferences or informal settings where this has been identified and or discussed," and, "There is a consensus among peers that clinicians feel that the participants owe an allegiance to them for the services they provide. This is not a Recovery Oriented system of Care. I am hopeful that this will change once the state begins to implement these practices across the regions."
3. Neutral or mixed (*n*= 129, 26%): These respondents described that the experience was either just "ok," that it was evolving, or that it was very dependent on the setting

or person with whom they were working. Many cited role-confusion and a need for training for clinical and mental health therapists about the PRSS role. “For a while there was confusion, misguided expectations, failure to include peers, lack of respect in what peers could offer. Over the last 6 months, there has been some movement to gain a broader perspective of how peers can assist and be of value to the counselors and that has greatly improved workplace satisfaction and fulfillment by the peers. Communication and understanding were lacking but, in an effort, to enhance services and group participation, peers have developed a more concrete role. A peer supervisor has been a great addition to being a liaison between clients and counselors and understanding the peer role.”

Jealousy and Competition Among Peers

PRSS were also asked the extent to which jealousy and competition were a problem among peers in their work settings. This question was created in response to a theme generated from the focus groups in Aim 2. Responses to this question indicate that 6% (n= 32) believe it is “a big problem,” 14% (n= 78) believe it is “a moderate problem,” 20% (n= 113) believe it is “a small problem,” and the majority, fully 60% (n= 340) believe it is “not a problem at all.”

PRSS Personal Recovery Characteristics

The third section of the survey requested that respondents answer questions about their recovery process. The average time in recovery for the sample population was 10 years (M= 10.44). Despite the sensitive nature of these questions, more than N= 400 respondents answered each question in this section. When asked the specific type of disorder for which they were in recovery, 25% (n= 137) indicated they were in recovery from a substance use disorder (SUD), 20% (n= 106) indicated they were in recovery from a mental health disorder, and 51% (n= 279)

indicated they were in recovery from both, a substance use and mental health disorder. Five percent (*n*= 27) selected that they "prefer not to answer." For those who indicated that they were in recovery from a substance use disorder, they were also asked specifically what chemical dependence led to their recovery journey (check all that apply). Table 14 includes these results.

Table 14

What chemical addiction brought you into recovery? (N=416)

Chemical	Percent
Alcohol	55%
Opiate/Opioids	50%
Cocaine	42%
Amphetamine/methamphetamine	29%
Marijuana	26%
Benzodiazepines	20%
Hallucinogens	9%
Other	6%
Inhalants	2%
Prefer not to answer	2%

Note: Percentages will not add to 100% due to the "check all that apply" option.

The following question asked whether or not they used prescribed medications to support their recovery and if "yes," which medications were utilized (check all that apply). Thirty-three percent (*n*= 179) of respondents used medication to support their recovery. Table 15 presents the type of medications used by frequency.

Table 15

Medications Used for Recovery (N= 178)

Type of medication	Percent
SSRI for depression or anxiety (examples provided)	46%
Buprenorphine combination or monoproduct (Suboxone or Subutex)	34%
Buproprion (Welbutrin)	25%
SNRI for depression or anxiety (examples provided)	19%
Benzodiazepines (examples provided)	15%

Anti-psychotics (examples provided)	15%
Medications for ADD/ADHD (examples provided)	13%
Mood Stabilizer (Lithium)	12%
Naltrexone	9%
Methadone	9%
Antabuse	3%
Other	3%
Prefer not to answer	2%

Respondents were also asked to what extent they used illicit (not prescribed to them) medications for opioid recovery (methadone, buprenorphine, etc.) to support their recovery, and most (75%, *n*= 426) "never" used these illicitly obtained medications, 3% (*n*= 19) used them "very rarely", 2% (*n*= 12) used them "rarely", 6% (*n*= 35) "occasionally", and 9% (*n*=49) "very frequently."

Justice System Involvement

PRSS respondents were asked if they had ever been incarcerated, the charge for which they were incarcerated and the total years, months and days they were incarcerated. Nearly 50% (*M*= 49.3) of respondents had been incarcerated for an average of 695 days (*M*= 695, *SD*= 1019.31) or 1.9 years. The maximum length of stay was 30 years for one respondent. This outlier was removed from the descriptive analysis in order for the mean to be more representative of the overall data set. Text responses for type of offense varied greatly from felony trafficking to simple possession and DUI (*n*= 249).

Support For the Use of Medications for Opioid Use Disorder (MOUD)

Respondents were then asked if they supported the use of prescribed medications (such as Antabuse, Naltrexone, Buprenorphine, and Methadone) to assist persons in recovery from SUD. Sixty-six (66%, *n*= 366*)* answered "yes," 16% (*n*= 89) answered "no," and 14% (*n*= 75) responded "other, please describe." Many indicated that these medications were frequently

abused, should only be used as a last resort option, or only used on a short-term basis, not for maintenance. One respondent said, “Absolutely YES!!! Suboxone saved my life!!!!” Another entered the following:

> I am very concerned about the amount these drugs are prescribed. I think they can be helpful, I believe they have a use in harm reduction, but the true extent of the physical dependence and the nearly insurmountable withdrawal is down played by the profession that describes these drugs. Methadone and Suboxone withdrawal rival that of heroin, this is not talked about. I see plenty that use MAT in unmanageable ways. So, professionally I support it, in my personal recovery, I have a negative opinion of it.

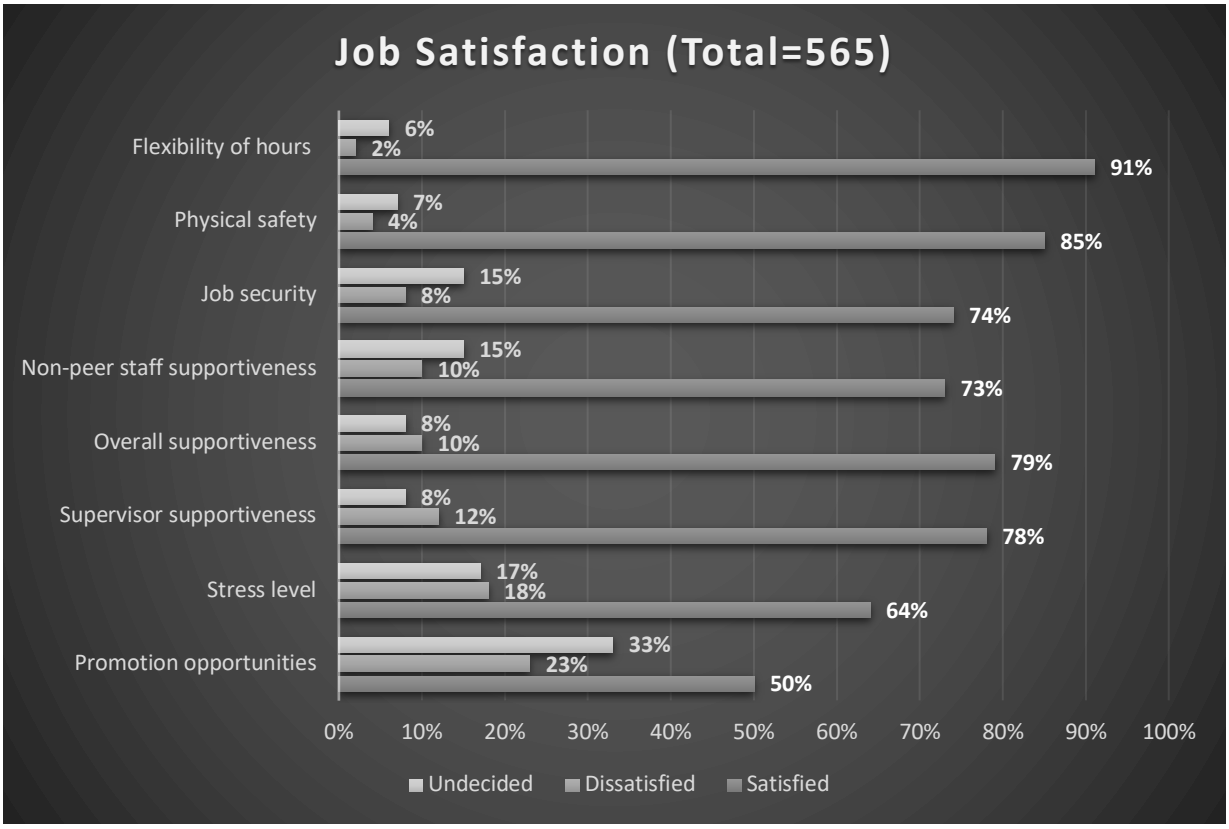
Dependent Variables of Interest

Job Satisfaction

Respondents were asked to rate their job satisfaction based on variables modeled after Lapidos survey of peer support specialists (Lapidos et al., 2018). Results from the 8-item categorical variable are displayed in Figure 3 below.

Figure 3

Job Satisfaction



An exploratory factor analysis was performed for this 8-item response set, indicating that the items loaded onto one main factor with an internal consistency reliability (Cronbach's Alpha) score of .88. As a result of this analysis and as a tool for better understanding overall job satisfaction, an index was designed to create a score for each response on the Likert scale with a total score of 40 for very satisfied or 1 for very dissatisfied. Mean satisfaction for this new variable was 32 (M= 31.52, SD= 6.51) indicating that PRSS are generally satisfied with their work. Next, a multiple linear regression was conducted, with this continuous variable as the dependent variable.

As shown in Table 16, the outcome job satisfaction is significantly negatively associated with an Associate degree or technical certificate in Model 1 (B= -2.55, p= 0.04). Meaning that persons with an Associate degree or technical certificate score 2.6 points lower on the overall job satisfaction score than their counterparts who have only a high school diploma or equivalent controlling for the impact of other variables. After controlling for selected demographics, and entering predictors in Model 2, hourly wage is a significant predictor of job satisfaction. As compared to those who earn an hourly wage of less than $15 per hour, those who earn more than $20 per hour are expected to score nearly 3.5 points higher on the job satisfaction scale (B= 3.46, p= 0.01). Furthermore, total years in recovery is significantly associated with a slight decrease in job satisfaction (B= -0.25, p= .002).

Table 16

Outcome: Job Satisfaction

	Unstandardized Beta	**Standard Error**	**t**	**Significance**
Gender -Male (gender reference is female)	0.98	1.06	0.93	0.36
Gender- Other	5.60	6.75	0.83	0.41
Associate degree or technical certificate (education reference is High School diploma or equivalent)	-2.55	1.25	-2.03	0.04*
Bachelor's degree	0.64	1.40	0.46	0.65
Master's degree	-0.86	1.96	-0.44	0.66
Doctorate degree	-4.38	6.78	-0.65	0.52
Appalachian County vs. Non-Appalachian County	1.96	1.09	1.79	.08
North Carolina vs. all other	-.499	1.08	-0.46	0.65
Race -white vs. non-white	0.32	1.26	0.26	0.80
Model 1 Demographics	**Adjusted r^2= *.019***			

Hourly wage $16-$20 (reference for wage is < $15)	2.21	1.18	1.89	0.06
Hourly wage >$20	3.46	1.35	2.57	0.01*
Extra certification	-0.39	1.01	-0.39	0.70
Supervision requirement	-0.56	1.36	-0.41	0.68
Recovery reason-SUD (reference category both)	1.07	1.10	0.98	0.33
Recovery reason-MH	-0.51	3.06	-0.17	0.87
Total years in Recovery	-0.25	0.08	-3.21	.002**
Total days incarcerated	-.001	0.00	-1.56	0.12
Model 2 Demographics, Work Setting and Personal Recovery Characteristics	**Adjusted $r^2 = .102$**			

*$p < .05$, **$p < .01$

Professional Advancement Opportunity

Separately, PRSS respondents were asked to rate the extent to which professional advancement opportunities were available in their current work setting using a 5-point Likert scale ranging from "never" to "always." About 8% (*n*= 43) indicate these opportunities are never available, 25% (*n*= 137) indicate they are rarely available, 36% (n= 200) indicate they are only sometimes available, 19% (n= 104) indicate they are available very often, and 13% (*n*= 75) responded that professional advancement opportunities were always available. In order to better understand the potential correlation between these advancement opportunities and potential predictors in the data set, a logistic regression was performed on a set of baseline demographic variables and predictors that were selected based on RREM and ROSC theory and existing literature in the content area.

Table 17 below outlines regression results for each model. Model 1 includes demographic predictors, and Model 2 includes the demographic predictors from Model 1 and adds training, work setting and personal recovery characteristics. Results for Model 1 indicate that professional advancement opportunities are significantly negatively associated with an associate degree (*B*= -1.04*, AOR*= 0.35 *p*= .013) with a 95% CI (0.16, 0.80). Meaning that the odds of the respondent perceiving that they have opportunities for professional advancement are 65% lower if the PRSS respondent has an Associate degree or technical certificate that if they have a high school diploma or equivalent. When, holding all demographic variables constant, Model 2 indicates that the use of medication for recovery is also significantly negatively associated with the outcome of professional advancement (*B*= -0.89, *AOR= 0.41, p= 0.03)* and a 95% CI (0.18, 0.92). Thus, the odds of perceived likelihood of professional advancement are 59% lower for persons who use medication as compared to persons who do not use medication.

Table 17

Outcome: Professional Advancement Opportunity

Predictor	**Beta**	**Standard Error**	**Significance**	**Exp (B)**
Age (continuous)	-0.01	0.02	0.62	0.99
Gender male (female is reference category)	0.43	0.37	0.24	1.53
Associate degree (reference is high school)	-1.04	0.42	0.01*	0.35
Bachelor's degree	-0.37	0.47	0.42	0.69
Master's degree	0.01	0.73	0.99	1.01
State worked is NC (all other states are reference)	0.60	0.37	0.11	1.82
Hosmer and Lemeshow: Model 1 *p*= 0.63				
Chi-square and significance:				
Block *p*= 0.06				
Model 1 *p*= 0.06				

Hourly wage $16-$20 ($15-$20 is reference)	0.80	0.45	0.08	2.23
Hourly wage >$20	0.47	0.51	0.36	1.60
Hours worked per week (continuous)	-0.02	0.02	0.45	0.98
Extra certification	0.32	0.38	0.39	1.38
Reason for recovery-SUD (Both: SUD and Mental Health is reference)	0.26	0.42	0.53	1.30
Reason for recovery- Mental Health	-0.61	1.10	0.58	0.54
Use of Medication for Recovery	-0.89	0.41	0.03*	0.41
Total years in recovery (continuous)	-0.06	0.04	0.12	0.95
Total days incarcerated (continuous)	0.00	0.00	0.66	1.00
Hosmer Lemeshow: **Model 2 *p*= 0.06**				
Chi-square and significance:				
Block *p*= .071				
Model *p*= .022				

*$p < .05$.

Financial Fragility

An additional validated question from the literature concerned financial fragility (Lapidos et al., 2018); specifically, we asked a question about respondents' ability to come up with $2,000 in one month if the need arose. Previous literature on PRSS indicate that many were financial fragile. In this sample, *n=498* responded, 42% (*n*= 210) that they could come up with these funds, 25% (*n*= 126) probably could, 18% (*n*= 88) probably could not, and 15% (*n*= 74) indicated they certainly could not come up with this much money. Combined, 33% (n=162) respondents endorsed either of the latter two categories. To better understand the perceived financial fragility, a logistic regression was performed on a set of baseline demographic variables and predictors that were selected based existing theory and literature in the content area.

Table 18 below outlines regression results for each model. Model 1 includes demographic predictors, and Model 2 includes training, work setting and personal recovery characteristics. Model 1 results indicate that financial fragility is significantly associated with gender male (*B*= -1.23*, AOR*= 0.29 *p*= .01) with a 95% CI (0.12, 0.72) also stated as males have 71% lower odds of financial fragility as compared to females, the reference category. Also in Model 1, an Associate degree or technical certificate is significantly negatively associated with financial fragility (*B*= -1.10*, AOR*= 0.33, *p*= .04) with a 95% CI (0.12, 0.94). Thus, the odds of a PRSS with an an Associate degree or technical certificate having financial fragility is 67% lower than respondents with a high school diploma or equivalent. Finally, in Model 2, when holding all demographic predictors constant, SUD as the primary reason for recovery is significantly negatively associated with financial fragility (*B*= -2.32*, AOR*= 0.10, *p*< .001) with a 95% CI (0.03, 0.30). Thus, the odds of a person in recovery for SUD only having financial fragility is 90% lower than the reference category of persons who are in recovery from both mental health and SUD.

Table 18

Outcome: Financial Fragility

Predictor	Beta	Standard Error	Significance	Exp (B)
Age (continuous)	-0.01	0.02	0.70	1.00
Gender male (female is reference category)	-1.23	0.46	0.01*	0.29
Associate degree (reference is high school)	-1.10	0.53	0.04*	0.33
Bachelor's degree	-0.38	0.50	0.45	0.68
Master's degree	-1.81	1.12	0.10	0.16
State worked is NC (all other states are reference)	-0.18	0.42	0.68	0.84
Appalachian vs. Non-Appalachian	-0.55	0.42	0.20	0.58
Block / Model 1 **Hosmer Lemeshow= .025**				

Chi-square and significance: **Block *p*= .006** **Model *p*= .006**				
Hourly wage $16-$20 ($15-$20 is reference)	-0.02	0.50	0.98	0.99
Hourly wage >$20	-1.30	0.76	0.09	0.27
Hours worked per week (continuous)	0.01	0.03	0.66	1.01
Reason for recovery-SUD (Both: SUD and Mental Health is reference)	-2.32	0.57	<.001**	0.10
Reason for recovery- Mental Health	-0.68	1.31	0.61	0.51
Use of Medication for Recovery	-0.07	0.50	0.90	0.94
Total years in recovery (continuous)	-0.06	0.05	0.20	0.94
Total days incarcerated (continuous)	0.00	0.00	0.17	1.00
Block / Model 2 **Hosmer Lemeshow *p*= 0.84**				
Chi-square and significance: **Block *p*= <. 001** **Model *p*= < .001**				

*$p < .05$, **$p < .01$

Summary

Results of the expedited qualitative data analysis conducted in study Aim 1 produced supplementary themes that were used to inform a final draft of the anonymous web-based survey instrument disseminated as study Aim 2. Results from the quantitative survey (n= 565) indicate that PRSS frequently provide emotional support to persons they work with in a variety of settings in their respective recovery ecosystems. PRSS in this sample are overwhelmingly satisfied with their work but have few professional advancement opportunities. A summary of Chapter 4 results in the context of prior work in this area is included in Chapter 5.

Chapter 5. Discussion

Chapter 5 includes a summary and discussion of Chapter 4 results followed by study strengths and limitations. The chapter will conclude with an examination of potential implications for practice and policy and recommendations for future research.

Summary of Results

This sequential exploratory mixed-methods study utilized an anonymous self-report web-based survey to query a cross-section of peer recovery support specialists (PRSS) in five states of Central Appalachia to better understand their roles and service activities in the various recovery ecosystems in which they live and work. The study builds upon previous surveys of mental health and SUD peers and addresses a universal call in the literature to improve clarity related to the PRSS role, service activities and settings (Barrenger et al., 2019; Blash et al., 2015; Cronise et al., 2016; Lapidos et al., 2018) and to identify the underlying mechanisms and ingredients of PRSS service in order to model the possible theoretical underpinnings and how these complex social interactions are linked to behavioral change (Barrenger et al., 2019; Chinman et al., 2014; Gillard et al., 2015). There is a scarcity of empirical literature that considers the voices and lived experience of employed PRSS and their perspective on the implementation of recovery-oriented models of service delivery (Chisholm & Petrakis, 2020; Hymes, 2015).

Peer Work: Personal Meaning and Job Characteristics

Consistent with previous PRSS studies (Cronise et al., 2016; Lapidos et al., 2018), when asked the most important reason they do this work, PRSS overwhelmingly state that they want to "give back" to others and their community (69%), followed by personal meaning (20%). As evidenced by responses in this survey, when the option of "giving back to others" is not included in a survey question, PRSS respondents use a text box or "other" selection to make certain this

answer is communicated. Respondents in this sample are also willing to seek out and complete additional training and certification. Nearly half have acquired additional national certifications (44%) in addition to their state level certifications, and when asked what could make their state sponsored certification training better, they indicated that it should be longer and/or expanded to include specialized training (29%) or be more applicable to the real world of PRSS work (19%).

While somewhat unexpected, this sample of PRSS who work in a region disproportionately burdened by diseases of despair (Meit et al., 2017) are overwhelmingly satisfied with their work with a few limited exceptions related to promotion opportunities and stress level (Figure 2). This finding is consistent with previous results (Cronise et al., 2016; Lapidos et al., 2018; Salzer et al., 2010). They score an average of 32 points on the 40-point job satisfaction index generated in this study from an existing 8-item categorical scale (Lapidos et al., 2018). They are also paid competitive wages as compared to the national average of $15.42 per hour (Daniels et al., 2016) and the Michigan sample who earn an average of $14.90 per hour (Lapidos et al., 2018). Forty-seven percent of this sample earns between $10-$15 per hour and 52% earn more than $16 per hour. Only 8% of the Michigan peers cited in Lapidos et al (2018) study earned more than $20 per hour while 19% of participants in this study reported this hourly rate. Similarly, this sample reported less financial fragility, with only 33% reporting that they could not or probably could not come up with $2,000 in one month if the need arose. This compares with a 66% fragility rate in the study of Michigan peers (Lapidos et al., 2018)

While existing data from PRSS who have taken the Smith enacted stigma scale was not found in the published literature (Smith et al., 2016) this sample reports lower than expected levels of stigma with fewer than 30% reporting that they sometimes, often or always (Table 13) feel stigmatized in their work setting as compared to mental health peers asked similar questions,

64% of whom reported seeing or feeling stigma or discrimination from non-peer co-workers (Cronise et al., 2016).

It is currently not well-known how PRSS perceive or navigate recovery ecosystems or where their services are designed to fit (Chisholm & Petrakis, 2020; Pantridge et al., 2016). Thus, a primary focus of this study was to better understand how PRSS interact within the two most prominent socio-ecological system models, the ROSC and RREM. While focus group participants (Aim 1) were not familiar with the terminology of the ROSC and RREM, the quantitative survey (Aim 2) included items about work setting and work activity based on these models (Ashford et al., 2019; Kaplan, 2008; Substance Abuse and Mental Health Services Administration Center for Substance Abuse Treatment, 2009). As responses relate to SAMHSA-defined peer work settings, respondents indicate that they work primarily in community mental health, recovery community centers (RCC) and recovery residences (45%). However, 29% answered this question using the "other" selection offering a text response instead of choosing an existing response category. Many of these 159 text responses do relate to existing categories, such as, "behavioral health" or "jails," however, a small number of new settings such as prevention, public health, EMS and harm reduction were entered (Table 8). Table 9 describes a more variable pattern of responses as PRSS were asked to use a slider bar to represent the percent of time they spend in work settings presented in the Ashford et al (2019) RREM paper. Similar to findings in previous studies, PRSS spend time in settings across the treatment continuum from pre-treatment to maintenance, a factor that could be connected to positive recovery outcomes for their clients but proves difficult to measure (Reif et al., 2014). While PRSS in this sample spend a great deal of time on average in peer recovery service settings (*M*= 42%), recovery residences (*M*= 22%), recovery community centers (*M*= 21%), recovery

informed institutional services (*M*= 20%), and recovery community organizations (*M*= 18%), a nearly equal amount of time is spent in medical treatment (*M*=18%), harm reduction (*M*= 15%) and a number of other settings where PRSS spent 9%-14% of their time.

In addition to typical peer work settings, SAMHSA defines four distinct types of PRSS support: emotional, affiliational, instrumental and informational. PRSS in this sample overwhelmingly define their work as emotional support (52%) with almost an equal distribution of support across the three other areas (Table 10). Emotional support in general is a finding consistent across previous studies as peers indicate that most of their time is spent sharing recovery stories, providing hope through role modeling, meeting people where they are, and developing trusting relationships that help others to recover.

PRSS were also asked to use a slider bar to demonstrate how much time they spend engaging in the key work strategies proposed by Ashford et al. (2019) which are more granular than the general SAMHSA-defined peer support types. Table 11 demonstrates that the "other" item is selected most frequently (28%), with case management, clinical notes, transportation, re-entry and harm reduction cited commonly. The "other" selection was followed closely by "offering meaningful recovery support" (21%), "use of role modeling" (20%), and "increasing motivation for change" (19%). Each of these items would be considered emotional support in the SAMHSA-defined categories. The seven remaining selections in this variable range from an average time of 10%-16%, reiterating previous results regarding the challenges in narrowing down PRSS activities into a concise list (Cronise et al., 2016).

The pattern of selecting the "other" option in this study sample is worth additional consideration. It is selected as the most frequent response in four of the primary questions related to work setting and activity. Furthermore, when given an opportunity to provide text as a

component of an "other" response, many PRSS will choose "other" even if it is only to provide more detail about a selection that already exists in the variable response set. In many ways, this desire to add to detail to the survey is a central theme in this data. It is almost as if they are trying to say that no survey question captures the true nature of their work.

The final question related to work setting and activities was taken directly from the Lapidos et al. study (2018) and included a two-part question about frequency of time spent in an activity and strength of skill for each activity for which a PRSS responded that they engage at least "sometimes." Results in Figure 1 show that PRSS frequently engage in a at least fourteen activities and, for the most part, they feel very strong in their skills related to these activities. In comparison to the Michigan peers (Lapidos et al., 2018) this sample of PRSS engages much more frequently in self-determination counseling work, treatment planning and integrated care, and feel confident in their skills with these activities. Michigan peers engage more frequently in health and wellness activities and community visits reporting a noteworthy lack of confidence in their proficiency with integrated care models as compared to this Central Appalachia sample. Both groups report sharing recovery stories as the most frequent activity and the one they feel most confident conducting. Finally, both groups report low levels of confidence providing housing and benefits assistance and financial education (Lapidos et al., 2018), however, it is unclear if this is due to lack of resources within the recovery ecosystem or actual training to engage in these activities.

Tension in the Workplace

A number of existing studies cite the tension between PRSS and their clinical co-workers and challenges related to PRSS integration within existing systems of care to include power imbalances and dismissive attitudes (Chisholm & Petrakis, 2020), stigma from non-peer

coworkers including licensed professionals (Cronise et al., 2016) and misunderstanding about the use of self-disclosure (Englander et al., 2019). In addition to the Smith enacted stigma scale (Smith et al., 2016) an open text question was utilized to examine this perception of clinician/peer tension further. Respondents were asked to describe their opinion of the relationship between PRSS and mental health counselors/therapists. The thematic analysis of the 496 responses concluded that 51% felt that the relationship between PRSS and licensed clinicians was overwhelmingly positive, 26% were neutral or felt it was highly dependent on the people or settings, and only 15% indicated that this relationship was very negative. Overall, this sample of PRSS appear to experience lower levels of tension with licensed clinicians than those in previous studies. Although, among those who reported negative experiences they seem to feel strongly about these tensions. One respondent said that it was, “Disrespectful.....I get reminded all the time I didn't get a degree to do my job. Not everyone but it hurts. The clients have a rapport with peers that therapist want but are judgmental and can’t see what we do.”

A separate but emergent theme related to tension in the workplace arose from the qualitative analysis in Aim 1 whereby a number of participants mentioned jealousy, competition and tension with fellow peers. Cronise et al. (2016) also noted this peer-to-peer tension as 22% of the 597 respondents reported seeing or feeling stigma from peers they support. Thus, a categorical question was designed for this survey to query the extent of the problem among respondents. Results indicate that this problem is consistent with Cronise et al. (2016) results as 20% indicate that jealousy and competition among PRSS is a big or moderate problem.

Personal Recovery Characteristics

Past recovery characteristics of PRSS are rarely noted in the literature, however, one would expect that an individual’s personal recovery journey would impact their work with others

who are in recovery or who are actively using. Thus, this survey instrument included variables designed to explore PRSS respondents' past recovery journey. Half of the participants reported that they were in recovery from both mental health and substance use disorders (51%) as opposed to SUD (25%) or mental health disorders (20%) alone, and for those that indicated they were recovering from an SUD, 55% indicated that the chemical that brought them into recovery was alcohol, followed by opioids (50%), cocaine (42%), amphetamines (29%), marijuana (26%), and benzodiazepines (20%). Only 33% of respondents used medication to support their recovery, nonetheless, 52% reported use of medications specific to the treatment of opioid disorder (OUD) such as buprenorphine, methadone or naltrexone for detox or maintenance. Furthermore, most PRSS in this sample (66%) indicate that they support the use of MOUD in general but reported some ambivalence about nefarious prescribing practices and long-term maintenance on these medications in open text response. Overwhelmingly, PRSS said that they understand that there are "multiple pathways to recovery" and that they are there to support individuals on whatever path they choose, medication-assisted treatment (MAT) or other.

The rate of OUD and the use and misuse of MOUD in this sample population is of particular interest as this region of the country shares a disproportionate burden of the consequences related to the opioid epidemic. The top four states with the most prescription opioids per person in the nation from 2006-2012 include three states in this sample, West Virginia, Kentucky and Tennessee with overdose death rates in these states three times higher than the national average during these years (Higham et al., 2019). The Central Appalachian region continues to suffer from the impact of this problem, and stigma around the use of medication continues to be a barrier to treatment access for many.

Justice System Involvement

Justice system involvement is infrequently cited in the PRSS literature however this factor can make a dramatic difference in employment opportunities and perceived and enacted stigma. Half of respondents in this survey reported that they had been incarcerated at some point during their lifetime with an average length of stay of approximately 2 years (M= 695 days, SD= 1019.31) and 248 respondents provided text to describe the types of offenses that led to their incarceration. Offense types varied greatly whereby many reported "drug charges" generally, several others reported simple possession, probation violations, and multiple DUI or DWI charges. More serious charges included trafficking charges, grand larceny, attempted murder, and felony assaults. It is important to note that some stated that "catching a charge" brought them into recovery via drug court. Future studies examining type of offense and duration of incarceration to personal recovery characteristics and PRSS outcomes could be beneficial in understanding the underlying mechanisms of success for those who have been incarcerated vs. those who have not.

Additional Findings

Additional analyses were conducted on three outcomes of interest, job satisfaction, professional advancement opportunity, and financial fragility. Due to the sequential and exploratory nature of this study, there were no a priori hypotheses to inform these models, however, predictors were selected based on existing literature and the study team's familiarity with the content area.

The linear regression designed to investigate job satisfaction indicated an hourly wage of greater than $20 per hour ($B$= 3.46, p= 0.01) is significantly and positively associated with a nearly 3.5-point increase on the job satisfaction scale. However, having an Associate degree or

technical certificate as opposed to a high school diploma or equivalent is significantly negatively associated with job satisfaction rating (*B*= -2.55, *p*= .044) and when controlling for these demographic variables, total years in recovery is also associated with a decrease on the job satisfaction index (*B= -0.25, p= .002)*.

The Associate degree or technical certificate is also significantly correlated with professional advancement decreasing the likelihood of professional advancement (*B*= -1.04*, AOR*= 0.35 *p*= .013). Additionally, the use of medication for recovery also decreases the outcome of professional advancement (*B*= -0.89*, AOR*= 0.41, *p*= 0.03). The underlying factors contributing to these associations is unclear; however, the Associate degree being negatively correlated with job satisfaction and professional advancement warrants future investigation. Moreover, the significant association between utilization of medications for recovery is also of interest as only 33% of this sample used medication, but for those that did, more than half were medications for OUD which are highly stigmatized in this region of the U.S.

The final regression was performed on the financial fragility variable whereby a combined 33% of respondents reported that they could not or probably could not come up with $2,000 in one month if the need arose. Results of this logistic regression indicate that males are less likely than females to suffer from financial hardship or fragility (*B*= -1.23*, AOR*= 0.29, *p*= 0.01). The Associate degree or technical certificate as opposed to a high school degree serves as a protective factor in this model and was significantly negatively associated with the outcome of financial fragility (*B*= -1.10*, AOR*= 0.33, *p*= .04). Finally, when holding all demographic variables constant, persons with a recovery reason for SUD alone are more likely to be financially fragile than persons who are in recovery from both a mental health and SUD (*B*= -2.32*, AOR*= 0.10, *p*< .001). The significant association between having an Associate degree or

technical certificate as compared to a high school diploma or equivalent in all three outcomes of interest warrants future study. These models indicate that persons with an Associate degree/technical certificate are less satisfied and perceive themselves to have fewer opportunities for advancement, however, also appear to be less financially fragile.

Study Strengths

This study extends the current body of evidence by expanding upon existing surveys of mental health and other peers (Cronise et al., 2016; Johnson et al., 2014; Lapidos et al., 2018; Salzer et al., 2010; Goessel et al., 2014) adding a region of the country that has yet to be studied. The universal call in the empirical literature is for methods that are not only able to demonstrate the usual short-term clinical outcomes for persons working with PRSS, but also methods that will provide an understanding of the complex interaction of outcomes such as empowerment, self-efficacy and hopefulness and how they may serve as mediators bridging the gap between intervention and successful recovery (Barrenger et al., 2019). Findings from this study extend the existing evidence concluding that emotional support, including providing hope and sharing recovery stories are the most frequently utilized strategies of employed PRSS.

Furthermore, previous studies tend to be singularly focused on client outcomes (Andreas et al., 2010), PRSS outcomes (Johnson et al., 2014; Reif et al., 2014) or system-level outcomes (Hendry et al., 2014; Ashford et al., 2019). This sequential exploratory study sought to engage PRSS in the design of an instrument that would cast a "broad net" in order to both capture an aggregate of themes in the existing empirical literature while also supplementing these themes with variables designed to better understand the potential connection between PRSS past recovery characteristics and the work they do. Moreover, results of this study indicate that PRSS in this five state region of the country are remarkably more satisfied, less stigmatized and better

paid than other peer populations considering that they live in an area of greater risk for diseases of despair (Meit et al., 2017), and half have been incarcerated at some point in their lives and all are in recovery from significant mental health disorders.

Moreover, the frequency of the selection of "other" as a response option can be listed as a study limitation; however within these "other" response options, PRSS repeatedly offered rich content in the offered text boxes. This commitment to providing supplemental text coupled with the overwhelming response rate of more than 700 certified PRSS in less than 30 days, must be cited as a study strength. Previous studies of this type in the peer-reviewed literature have fewer than 600 respondents with most having fewer than 400 (Cronise et al., 2016; Johnson et al., 2014; Lapidos et al., 2018; Salzer et al., 2010). Additionally, at the end of the survey, PRSS were offered an opportunity to not only leave their contract information to be entered in the gift card lottery but to receive study results, participate in future research, and offer suggestions for future research. As a result, 423 respondents provided contact information to participate in a future PRSS registry and to receive study results, while another 309 listed their ideas for future research to include topics such as forest therapy, trauma, domestic violence, employment and stigma.

Perhaps of greater importance is the story behind the data. There now exists strong relationships between members of the dissemination team (Appendix C) in each of the five states and the study investigator. All are awaiting study results and most are interested in future partnership. Furthermore, a portion of the PRSS sample population engaged with the study team separate from the survey response. As soon as the survey began fielding, the investigator's email inbox and office phone line buzzed with activity. Multiple phone calls and emails occurred during each business day and on the weekends while the survey fielded, especially on dates when survey reminders were disseminated. Some PRSS were frustrated when they were screened out,

some wanted to give more information than the survey requested, and at least three scheduled one-on-one virtual meetings with the investigator to share extensive thoughts and research ideas related to PRSS work. Several indicated that they were disappointed that the survey did not capture or reflect all that they do and they hoped the investigator would improve the design for future studies.

Study Limitations

Survey responses were acquired using non-probability sampling methods suggesting that caution must be exercised with respect to generalizability of the findings. This study was only disseminated in one geographical area of the country thereby limiting any opportunity for inferences about PRSS work in other regions. This sequential exploratory study was constructed to poll PRSS in one geographic region and collect data on a wide variety of topics. The survey included only one validated survey item, Smith's enacted stigma scale (Smith et al., 2016), thus, there may be limitations due to the nature of these varied survey items. Notably, three central questions designed to explore PRSS work settings and activities contained slider bars that did not work properly allowing respondents to exceed the threshold of 100% for time spent in work settings and engaging in PRSS activities thereby eliminating nearly half of the responses to these questions.

In hindsight, due to the high level of respondents choosing "other" options and some who state plainly that the survey did not capture their work, it may have been worthwhile to add additional focus groups in Aim 1 or improve the focus group interview guide in order to prevent the frustration PRSS experienced when the quantitative survey did not adequately capture or reflect their work. Finally, the wide array of variables cross-cutting multiple outcomes and variables of interest did not allow for in-depth exploration of any one area of PRSS work, thus

these results provide only a high-level overview and summary of PRSS work in one geographic region.

Study Implications

This study supports results in the current literature suggesting that the potential for the PRSS to improve outcomes for persons with SUD is promising. The PRSS workforce is actively engaged, willing to participate in additional training and working in multiple settings across existing recovery ecosystems. The study also corroborates findings that while it is difficult to capture the multiple settings and activities in which PRSS engage, they most frequently engage in emotional support and one of the activities they most frequently and confidently engage in is sharing their own recovery story. Furthermore, the work in and engage most frequently in peer recovery settings such as recovery community centers, recovery community organizations, recovery residences and also community mental health.

Moreover, the results of this research build on existing evidence calling for expanded methods to capture additional settings and activities that are not included in the current empirical literature. This PRSS sample provided ideas for future research and also noted multiple settings that were not included in current surveys such as EMS, prevention coalitions and others. They have a strong voice and they wish to be heard. They use every opportunity to say, “you don’t quite have it right yet” or “let me tell you what is actually happening out there.”

Furthermore, this study provides a clearer understanding about past recovery characteristics that previous studies do not provide, thus laying the foundation for future inquiry. The majority of this sample was in recovery from alcohol and opioid use disorder (OUD) and many used medications to support their recovery. These recovery characteristics may look different in other regions of the country and are worth exploring as they relate to PRSS work.

Finally, the job satisfaction index created in this study may provide a new opportunity to examine PRSS job satisfaction in regions across the U.S.

Future Research

While this study expands previous findings demonstrating work settings and activities in which PRSS most frequently engage, the flexibility to work across settings and activities may be part of what makes PRSS work effective (Eddie et al., 2019). Thus, in addition to extending the existing literature examining outcomes from the provision of emotional support provided in the most common PRSS work settings, it would also be worthwhile to engage new disciplines in order to capture the expansiveness of the work and the underlying mechanisms of success. For example, a job analysis study informed by the human resources literature, social network analysis, and/or the theory of representative bureaucracy from the public administration literature could all be used to inform future studies that might capture the breadth and depth of the PRSS role. Furthermore, PRSS themselves should lead future research aims and appear to be eager to do this; thus, it would be meaningful to have multiple PRSS review these results and provide feedback to inform future surveys of PRSS in other regions of the U.S.

Conclusion

"New service roles sprout from the soil of unmet need" (White, 2006). There are currently 22 million people living with an SUD in the United States (Center for Behavioral Health Statistics and Quality, 2018) and fewer than 20% receive any type of treatment (Substance Abuse and Mental Health Services Administration, 2019). There are also 25 million people that purport that they "used to have a problem with drugs or alcohol, but no longer do," and only half (53.9%) utilized an assisted path, most commonly, mutual-help groups (e.g., AA, NA) (Kelly et al., 2017). The COVID-19 pandemic has led to increased overdose rates in the

U.S. by more than 30% (Ahmad et al., 2021), with increases in each of the states represented in this study of more than 40%. Current studies indicate that linkages to medical, community, and social supports are critical components of successful recovery and that PRSS may play a central role in making these connections (Granfield & Cloud, 2001; Hibbert & Best, 2011; Jason et al. 2006; Sheedy & Whitter, 2009). The ultimate goal of this study was to guide the conceptualization of a framework for adequately measuring PRSS outcomes by first creating a foundation for understanding their roles and activities within existing recovery ecosystems. Results expand the existing literature providing information about PRSS training, remuneration, job satisfaction and work roles and activities within the context of existing recovery ecosystems. The study also provides new data regarding the historical recovery experience of PRSS and their interest in future research.

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APPENDICES

Appendix A: Evidence Matrix

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
(Waye et al., 2019)	2019	**Program evaluation**	Patients in Anchor ED a RI community-based peer recovery program that deploy PRSS to emergency departments with high rates of accidental overdose.	N=1392	-88.7% received naloxone training -86.8% agreed to continued outreach with a PRSS after ED contact and training.	Potential impact on engaging high-risk populations in treatment, overdose prevention, and other harm reduction activities. Additional research needed to evaluate the reach of implementation efforts and services uptake.
(Eddie et al., 2019)	2019	**Systematic Review**	Search terms on PubMed, EMBASE, CINAHL and PsychInfo: recovery coaching, peer recovery support, peer-based recovery support services, individual peer support	N=24 reports of 6,544 participants 7 RCTs, 4 quasi-experiments, 8 single or multi group prospective of prospective or retrospective studies, and 2 cross-sectional investigations.	Positive findings on measures including reduced substance use and relapse, improved relationships with treatment providers and social supports, increased treatment retention, and greater treatment satisfaction.	The systematic review speaks to the potential of peer supports across SUD treatment settings, however, there is a great amount of work needed to establish efficacy and effectiveness. PRSS work **lacks the clarity of professional treatment realm with clear roles, work schedules, and expectation** and marked differentiation between paid professional staff and clients.
(Bassuk, Hanson, Greene, Richard, & Laudet, 2016)	2016	**Systematic review**	Search terms on PubMed, PsychInfo and Web of Science: peer involvement,	9 studies; 4 RCT, 3 quasi-experimental, 1 comparison group and 1 program evaluation	Salutary effects on participants despite significant methodological	Additional research necessary to determine the effectiveness of

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
			alcohol or drug addiction, known types of peer led recovery interventions, the outcome of revcovery.	with no comparison group	limitations. Most studies reported statistically significant findings showing improvements substance use, a range of recovery outcomes or both.	different approaches and types of peer support services. Significant **inconsistency in the definitions of peer workers and recovery coaches among the studies.** Most lacked a clear description of PRSS roles and responsibilities in the interventions.
(Reif et al., 2014)	2014	**Review of the literature**	Search on PubMed, PsychINFO, Applied Social Sciences Index and Abstracts, Sociological Abstracts for outcome studies of peer recovery support services from 1995-2012.	2 RCT, 4 quasi-experimental, 4 with pre post service design and 1 review.	Met minimum criteria for moderate level of evidence demonstrating reduced relapse rates, increased treatment retention, improved relationships with treatment providers and social supports, and increased satisfaction with the overall treatment experience.	Methodological concerns included **inability to distinguish the effects of peer recovery support from other support activities**, small samples and heterogeneous populations, lack of consistent or definitive outceoms, and lack of any or appropriate comparison groups.
(K. Tracy & Wallace, 2016)	2016	**Review of the literature**	Search on PubMed and MedLINE	10 studies including RCT, pre/post data studies all published 1999 or later	Studies demonstrated associated benefits in the following areas: 1) substance use, 2) treatment engagement, 3) human immunodeficiency virus/hepatitis C virus risk behaviors, and 4)	Peer support groups included in addiction treatment shows much promise; however, the limited data relevant to this topic diminish the ability to draw definitive conclusions. More

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
					secondary substance-related behaviors such as craving and self-efficacy.	rigorous research is needed in this area to further expand on this important line of research.
(Bernstein et al., 2005; K. Tracy & Wallace, 2016)	2005	**Randomized Control Trial**	Outpatient users of cocaine or heroin (past 30 days) from Boston walk-in clinics	N=1175	At 6 months, the intervention group had more cocaine and heroin abstinence and more drug-free participants. On the ASI drug subscale there was a trend toward greater improvement for the intervention group (49% reduction vs. 46%, p = 0.06).	Contact with the peere ducators, who themselves were role models of successful recovery may have served as a powerful motivating example for both groups. It is important to note that among participants who reported at follow-up that they had cut back or quit, a similar percentage of the control and intervention groups reported on follow-up that interacting with project link staff helped them to reduce their drug use.
(Andreas, Ja, & Wilson, 2010)	2010	**Quasi-experimental** study to evaluate the impact of PROSPER (Peers Reaching Out Support Peers to Embrace Recovery); used GPRA and SAMHSA datasets as this was a CSAT and RCSP grantee	Adults facing recovery and reentry challenges in Los Angeles County and attending PROSPER, a recovery community governed and operated by peers.	N=72	Housing stability increased from 21% at baseline to 63% at 12 months; residential treatment decreased from 24% to 7%; and probation/parole status decreased from 82% to 32%.	Weak study design as cited by Bassuk.
(Kamon & Turner, 2013)	2013	**Program evaluation** with time series design	Adults seeking help from one of Vermont's Recovery Network Recovery Centers.	N=52	Increase in reported days of abstinence from an average of 118 days abstinent	Weak study design as cited by Bassuk

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
					(SD = 217) at baseline and to 123 days abstinent (SD = 164) at four month follow up. Participants had more primary care visits, fewer hospital/ER/ detoxification admissions, and significant increases on domains of recovery capital, (services, housing, health, family, alcohol & other drugs, mental health, legal (p b .05); and social (p b .01).	
(Mangrum, 2008)	2008	**Quasi-experimental** study evaluating ATR program outcomes.	Adults in a Texas criminal justice population with sufficient substance abuse to warrant treatment, enrolled in access to recovery (ATR).	N=4420	ATR clients were significantly more likely to be abstinent 30 days before discharge (85%) compared to non-ATR criminal justice clients (77%; p b .0001) and non-criminal justice clients (67%; p = .0001). Clients in ATR were more likely to complete treatment (60%) than those in non-ATR treatment 56%; p b .0001), and had better outcomes	Weak study design as cited by Bassuk.

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
					if drug court or probation was involved.	
(Min, Whitecraft, Rothbard, & Salzer, 2007)	2007	**A 3-year comparison group study** of FC and treatment as usual (TAU) outcomes. A survival analysis.	Adults with co-occurring disorders (COD) in Philadelphia. Control group were adults participating in the group Friends Connection (FC) program.	N=484 and comparison group n=106	Significantly fewer people in the FC group were re-hospitalized over a 3-year period than the comparison group (62% vs. 73%, respectively0. Survival analysis suggest that FC participants had longer community tenure than TAU (Log-Rank X2 = 5.780, Wilcoxon X2 = 7.395, df = 1).	Friends Connection may facilitate community tenure and prevent rehospitalizations for a group that is at high-risk for rehospitalizations. The findings lend additional support of the potential effectiveness of peer support programs as part of a service delivery system that facilitates recovery of individuals with co-occurring disorders.
(O'Connell, Flanagan, Delphin-Rittmon, & Davidson, 2020)	2020	**Randomized Control Trial**	Adults with co-occurring psychosis and substance use disorder	N=137	At three months: skills training was effective in reducing alcohol use and symptoms, with the addition of peer-led support resulting in higher levels of relatedness, self-criticism, and out patient service use. At nine months: skills training was effective at decreasing symptoms and inpatient readmissions and increasing functioning, with the addition of peer	Adding peer-led support may increase engagement in care over the short-term and reduce substance use over the longer-term for adults with co-occurring disorders.

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
					support resulting in reduced alcohol use.	
(Rowe et al., 2007)	2007	**Randomized Control Trial**	Adults with co-occurring mental illness, criminal justice histories, and alcohol and drug use disorders.	N=114	Significantly lower levels of alcohol use in the experimental group at 6 and 12 months (p b .005). Experimental group From baseline to 12 months, the intervention group's ASI mean score dropped from 0.09 to 0.04 while the control group dropped from 0.05 to 0.04.	Only alcohol decreased significantly as a result of the experimental intervention which may indicate that peer and community oriented group support and learning may decrease alcohol use over time. Limitation: design did not allow for differentiation of the relative importance of peer mentor, class, and valued role components.
(Sanders, Trinh, Sherman, & Banks, 1998)	1998	**Quasi-experimental design**	Women in recovery from crack cocaine addiction; comparison group was nonequivalent number of participants who were pregnant vs. non-pregnant. Peers were women in recovery for greater than 1 year.	N=94	The intervention group reported higher satisfaction with specific services (p,.05), reported the counselor as the most helpful component (p,.05), and reported counselors as empathic and caring (significance level not reported). More participants in the comparison group reported that the counselor had knowledge of substance use disorders	Unknown whether peer counseling was provided individually or in group settings or both.

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
					(significance level not reported).	
(Smelson et al., 2013)	2013	**Quasi-experimental design**	Unemployed homeless veterans with co-occurring SUD and mental health issues excluding schizophrenia, schizoaffective disorder, bipolar 1 and serious suicidality.	N=333	The intervention group was less likely to drink to intoxication at 12 months, reducing the odds by 2.9% (OR = 0.29, 95% CI [0.10, 0.83], p = .02). The intervention group experienced less serious anxiety and tension (OR = .53, 95% CI [0.29, 0.97], p = .04) at 12 months.	The intervention appears to be a helpful wraparound intervention to augment usual care, but future research might also evaluate whether it increases housing stabilization and improves satisfaction with housing placement.
(Kathlene Tracy, Burton, Nich, & Rounsaville, 2011)	2011	**Randomized Control Trial**	Veterans recruited from inpatient programs for substance use or for psychiatric treatment; participants received treatment as usual versus treatment as usual plus DRT plus MAPEngage versus treatment as usual plus MAP-Engage.	N=96	Compared with treatment as usual only, treatment as usual plus MAP-Engage alone, and treatment as usual plus DRT plus MAP-Engage were associated with increased adherence to post discharge outpatient appointments for substance use treatment, general medical, and mental health services (p,.05 for substance use treatment and p,.05 for all appointments combined).	MAP-Engage offers an alternative approach to address lack of attendance to outpatient treatment appointments post discharge that is relatively low in staff reliance. Peer counseling linked to formal treatment may be particularly applicable to VA settings because of the recent mandate to place peer coordinators throughout the system.

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
(Deering et al., 2011)	2010	**Program evaluation?**	Female street-based sex workers who used drugs	N=242	Over 18 months, 42.2% (202) reports of peer-led mobile outreach program use were made. Women who used the peer-led mobile outreach were more likely to use inpatient addiction treatment (AOR: 4.2, 95%CIs: 2.1–8.1), even after adjusting for drug use, environmental–structural factors, and outpatient drug treatment.	FSWs at higher risk for sexually transmitted infections and violence are more likely to access this peer-led mobile outreach program and suggest that the program plays a critical role in facilitating utilization of detoxification and residential drug treatment.
(Boisvert, Martin, Grosek, & Clarie, 2008)	2008	**Mixed-methods**	Adults in recovery from addiction in a permanent supported housing program	N=18	Significant positive pre-post treatment changes were noted for social support (p,.05). Relapse was reduced (24% versus 7%, significance not reported) in the year after intervention, and qualitative findings of support and appreciation of the intervention and goals were reported.	A peer-supported community program focused on self-determination can have a significant positive impact on recovery from substance addictions and homelessness. Limitations include a small sample size and lack of a randomized control group.
(Boyd et al., 2005)	2005	**Program evaluation**	Rural women with SUD and HIV	N=13	The intervention was associated with increased recognition of substance use as a problem (20% to 40% increase), beginning to change	Although limited by sample size, results suggest that this intervention was effective in helping women to acknowledge problems with their

Lead Author, Article Title, Citation	*Year*	*Study Design*	*Study Pop.*	*Sample Size*	*Results*	*Conclusions and Implications*
					substance use (25% to 42%), fewer substance use consequences (varied by subscale), and slightly increased control of substance use (varied by subscale). Significance levels were not reported.	alcohol and drug abuse and to begin taking steps to achieve sobriety.
(Andreas et al., 2010)	2010	**Program evaluation**	Adults in Los Angeles in recovery from addiction who had been incarcerated	N=509	One-year "significant and positive changes" from baseline were reported (no data were shown) for self-efficacy, social support, quality of life, and perceived stress.	Peer and staff accessibility were valued. Staff size, hours of operation, and distance from home or work were viewed as negative aspects of the program
(Armitage, Lyons, & Moore, 2010)	2010	**Program evaluation**	People in recovery from addiction and their families	N=152	At 6 months, 86% of participants indicated no use of alcohol or drugs in the past 30 days, and another 4% indicated reduced use (pretreatment data were not reported). A total of 95% reported strong willingness to recommend the program to others, 89% found services helpful, and 92% found materials helpful.	A total of 95% reported strong willingness to recommend the program to others, 89% found services helpful, and 92% found materials helpful.

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Appendix B: Semi-structured Interview Guide

**Collect the following participant demographics via email prior to beginning of focus group.

1. Are you a Certified Peer Recovery Support Specialist? o Yes o No
2. In which state(s) are you certified?
3. What additional peer certifications do you hold?
4. Are you currently employed as a PRSS? o Yes o No
5. In what state are you employed?
6. What is the highest educational degree you have completed?
   o GED
   o High-school diploma
   o Associate degree (specify major)_____
   o BA or BS degree (specify major)_____
   o Masters degree (specify discipline)_____
   o PhD, PsyD, or equivalent doctoral degree (specify discipline)_____
   o MD
   o None (if none, how many years of school did you complete?_____
7. What type of setting do you work in?
   a. Recovery community center
   b. Recovery residence
   c. Collegiate recovery program
   d. Drug court
   e. Justice system
   f. Child welfare agency
   g. Community mental health
   h. Primary care
   i. Hospital (ED) Emergency Department
   j. In patient treatment
   k. Homeless Shelter
   l. Medication Assisted Treatment (MAT) clinic
   m. HIV/AIDS health centers
   n. Church or faith-based entity
   o. Social services organization
   p. Other? _____ (please specify)
8. How long have you been employed at this site?
9. How long have you been in recovery?
10. Please indicate your gender? o Male o Female o Transgender o Other (please explain)_____
11. What is your ethnic identification? o African American o Asian o Caucasian o Latino or Hispanic o Native American or Alaskan Native o Other (please explain)_____
12. What was your age on your last birthday? _____
13. In what state do you reside?

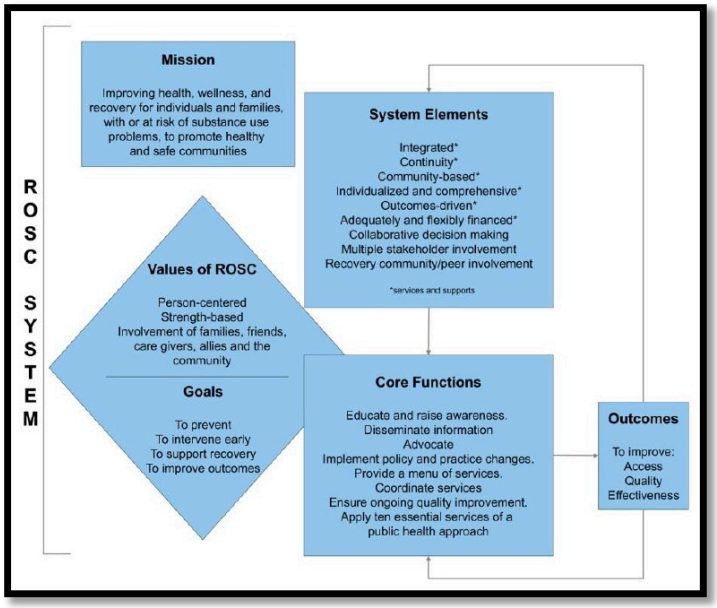
Focus Group Content:

Begin with the following introduction. *I am a Doctorate of Public Health (DrPH) student at East Tennessee State University completing dissertation research as a requirement of my final Integrative Learning Experience (ILE). I am interested in better understanding the professional roles and activities of peer recovery support specialists (PRSS) and how they fit in larger recovery eco-systems. My goal is to use your feedback today to develop a survey that will be sent to PRSS in five states located in Central Appalachia (KY,NC,TN,VA,WV). You will have an opportunity to review and provide feedback on that survey instrument prior to dissemination if you are interested. My goal is to share the results of the survey findings with PRSS certification and organizing bodies, third party payors, elected officials and other leaders to improve clarity and understanding about the PRSS role which may also inform future research studies that could ultimately lead to better reimbursement for your work and further professionalization of the role. I understand that each state may use different titles and terminology to describe your position, however, for the purposes of this interview we will use PRSS in each of the questions below. Keep in mind there are no right or wrong answers and each of you will have different thoughts and ideas about the discussion prompts below. Do you have any questions? Let's begin."*

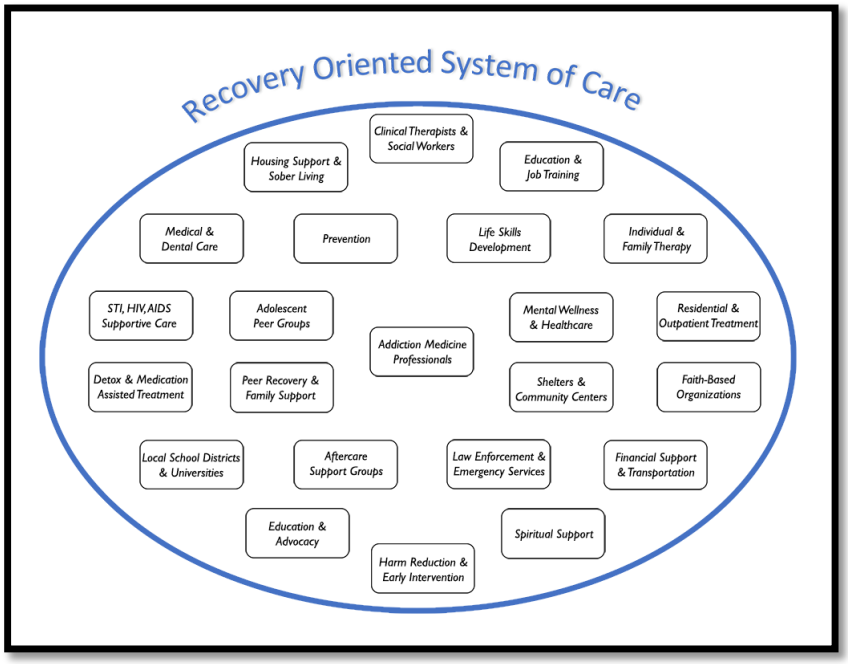
Semi-structured interview questions:

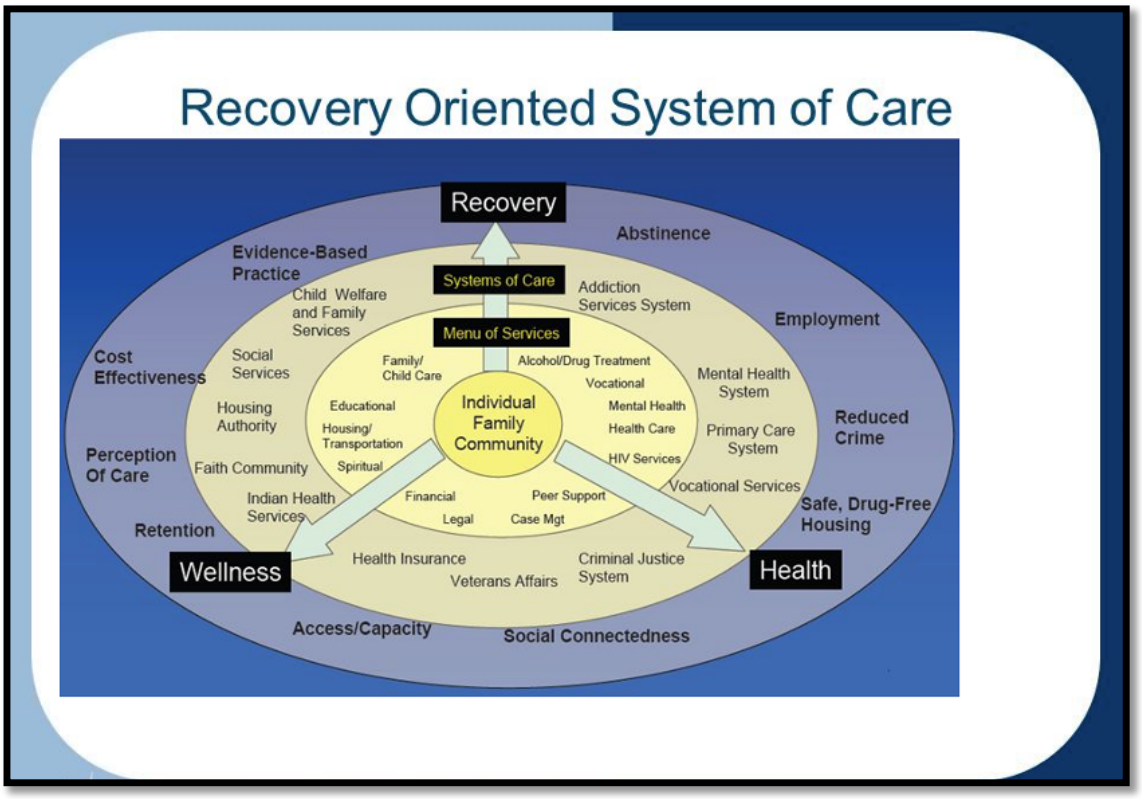
1. What is the most important thing you do in your role as a PRSS? How do you know if you have been successful?
2. Tell me a little about your peer training experience. What roles and activities were you trained to conduct? Were you provided a list of activities, roles, or guidelines to use in your work as a peer?
3. How did your training and corresponding guidelines prepare you for the work you are doing? Do the roles and activities you were trained to do align with your current job description and work setting?
4. In what ways do your culture and upbringing assist or detract from your work? Is it important for you to be an Appalachian if you are working in Appalachia?
5. *Next I am going to share two prominent models of systems for recovery support that I hope to include in the survey but I am not quite sure how. I really need your feedback here not only on the content but how this might be presented in survey form. I am hoping to get an idea of how you feel these models are useful or not useful and/or how they connect to the work you do*.
    a. *The most prominent model in the US is the Recovery-oriented System of Care Model (ROSC). This model came into existence around 2005 after a National Summit on Recovery hosted by the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Center for Substance Abuse Treatment (CSAT) hosted lengthy deliberations about the guiding principles and key elements of*

recovery-oriented systems of care. Appropriately named, the final ROSC model is a process that brings together existing resources and stakeholders with the primary goal of providing continuity of services and care, providing all stakeholders a voice, and building upon existing resources to further support individuals in recovery. The guiding principles of a ROSC process are: (1) recovery looks different for different individuals; (2) matches should be made to where an individual is in their recovery process with appropriate interventions and resources; (3) recovery is a process along a continuum; and (4) peer support, family support and involvement, and spirituality are important components of any recovery process. This first image is a description of the ROSC process and the next two are illustrations of a final ROSC in two different locations.



i. After viewing these images, I want to know how you respond to them. For example, have you seen this before? How does it connect with your work? Does it have benefits or limitations? What about where peers are placed in the model? Any ideas for how I might ask others about these models in an on-line survey?


Recovery Oriented System of Care
Clinical Therapists & Social Workers
Housing Support & Sober Living
Education & Job Training
Medical & Dental Care
Prevention
Life Skills Development
Individual & Family Therapy
STI, HIV, AIDS Supportive Care
Adolescent Peer Groups
Addiction Medicine Professionals
Mental Wellness & Healthcare
Residential & Outpatient Treatment
Detox & Medication Assisted Treatment
Peer Recovery & Family Support
Shelters & Community Centers
Faith-Based Organizations
Local School Districts & Universities
Aftercare Support Groups
Law Enforcement & Emergency Services
Financial Support & Transportation
Education & Advocacy
Harm Reduction & Early Intervention
Spiritual Support


Recovery Oriented System of Care
Recovery
Abstinence
Evidence-Based Practice
Systems of Care
Addiction Services System
Child Welfare and Family Services
Employment
Menu of Services
Cost Effectiveness
Social Services
Family/ Child Care
Alcohol/Drug Treatment
Vocational
Mental Health System
Housing Authority
Educational
Individual Family Community
Mental Health
Health Care
Primary Care System
Reduced Crime
Housing/ Transportation
Perception Of Care
Faith Community
Spiritual
HIV Services
Vocational Services
Indian Health Services
Financial
Peer Support
Legal
Case Mgt
Safe, Drug-Free Housing
Retention
Wellness
Health Insurance
Criminal Justice System
Health
Veterans Affairs
Access/Capacity
Social Connectedness

b. *Another model the Recovery Ready Ecosystems Model (RREM) presented in the peer-reviewed literature for the first time in 2019, builds on the ROSC concepts. The authors of this model state that "the ROSC model coordinates current services and resources in a given community, however, it does not provide a framework or model for identifying all of the components in a community that may improve individuals recovery process or the readiness of a community to promote successful recovery efforts." They feel that it is important for communities to formulate and implement comprehensive readiness models to address the substance misuse crisis similar to models that already exist to prepare for other events such as natural disasters. The RREM considers that an individual's perception of support within their community must be considered along with structure of services, and thus, the RREM should be completed in conjunction with ROSC implementation in any given community because it provides an underlying framework for linking services in a recovery-informed way improving the chances that individuals will perceive benefit from the services and resources.*

    i. After viewing the RREM model below for a few minutes, I would like to know again your thoughts about the RREM model, how it aligns with your work and role, and any perceived benefits or limitations. What are you thoughts about the different levels? What are your thoughts about where peer services are displayed in this model? And how should it be presented in an online survey?

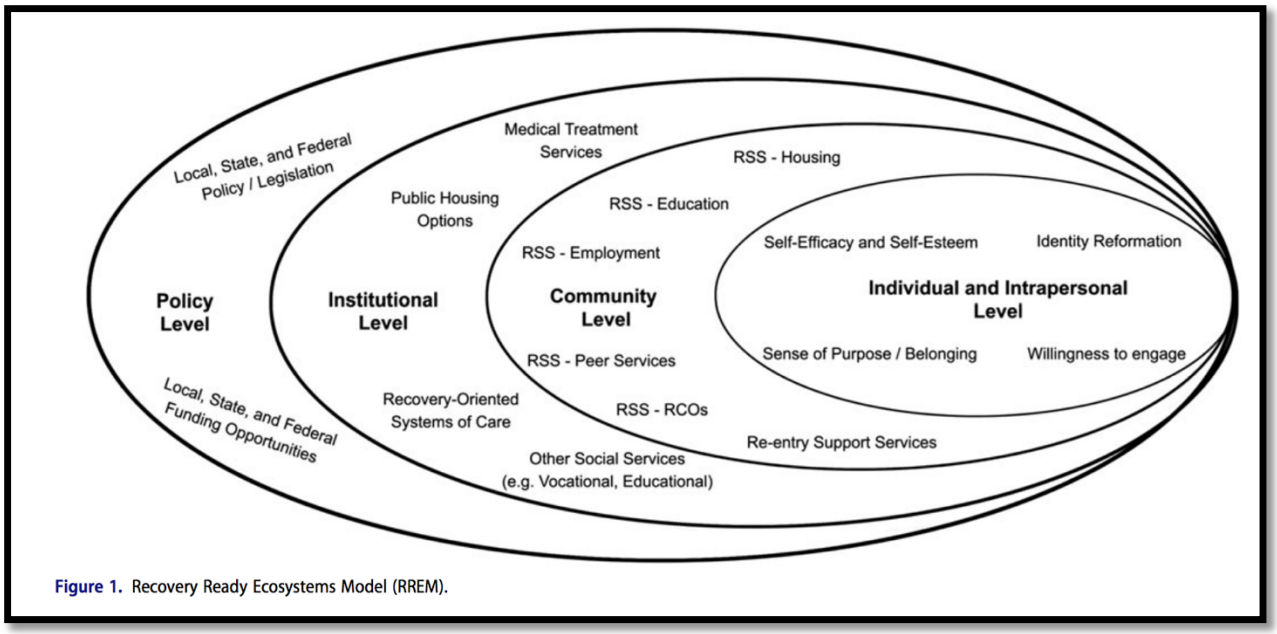


Figure 1. Recovery Ready Ecosystems Model (RREM).

6. Next I am going to ask you to tell me a little bit about people you work with and how your role and job activities interact with theirs? Follow up if needed: Are there times when others confuse your role or when the boundaries between work activities are unclear?
7. Do you ever feel stigmatized in your professional role as a PRSS? If so, please provide an example.
8. What is your perception of medications used for the treatment of substance use disorder such as suboxone, naltrexone, or Antabuse for alcohol use disorders?
9. Do you think your work is cost-effective or saves the government or others money?
10. As we finish, I am going to show you a few questions that I have already drafted and am planning to include in the final survey. Please let me know what you think and if they should be included or not.
    a. How confident are you that you could come up with $2,000 if the need arose within the next month?
    b. SAMHSA defines four primary types of PRSS support list below. I am hoping to ask PRSS what percentage of time they spend engaged in each of the activity types. What do you think? Are there better ways to ask this? Should it add up to 100%?
        - Emotional (mentoring and peer-led support groups)
        - Informational (parenting classes, job readiness training)
        - Instrumental (access to child care, transportation)
        - Affiliational (recovery centers, sports leagues, and social opportunities)
    c. I plan to use this question as an open text response. “What role, if any, do you have in building the self-efficacy or self-esteem of people you serve?” What do you think?
11. Finally, I would like to know how you think I should disseminate this survey? Would you be willing to take it and refer friends? Do you have ideas about where I can send the link in emails, or websites or other social media platforms?
12. Thank you so very much! Are there any last thoughts or anything that I didn’t ask that I should have?
    a. Please let me know by replying only to me in the chat box and providing your contact information if you are interested in review the survey draft and providing feedback before I send it out? Your contact information will not be associated with your answers or the demographic survey you completed at the beginning of our discussion.

Appendix C: Sampling Frame

State	Agency Type	Agency Name	Contact Name and Information	Approval Status
Kentucky	Certification Board	Dept. of Behavioral Health, Developmental and Intellectual Disabilities, Division of Program Integrity	Laura Cunningham	Denied due to advertisement of gift card per Kentucky state policy.
Kentucky	Accredited Training Agency	KYStars for Mental Health	David Riggsby	Approved but did not send survey.
Kentucky	Accredited Training Agency	Bridgehaven	Susan Turner	Approved and disseminated the survey and two reminders.
North Carolina	State Certification Body	Division of Mental Health, Developmental Disabilities, and Substance Abuse Services	Bernice Adjabeng	Approved and disseminated the survey and two reminders.
Tennessee	State Certification Body	TN Department of Mental Health and Substances Abuse Services	Michelle Webster	Approved and disseminated the survey and two reminders.
Virginia	State Certification Body	Office of Recovery Services	Mark Blackwell 804-786-2008	Approved and disseminated the survey and two reminders.
West Virginia	State Certification Body	WV Certification Board for Addiction and Prevention Professionals	Dave Sanders	Approved but only had access to social media so was not able to disseminate.
West Virginia	Marshall University	West Virginia Collegiate Recovery Network (WVCRN) and WV Association of Alcoholism and Drug Abuse Counselors (WVAADC)	Susie Mullens	Approved and disseminated with only one reminder.

Appendix D: Focus Group Analysis

Interview Prompt	Focus Group 1 (Themes emboldened)	Focus Group 2 (Themes emboldened)
1. What is the most important thing you do in your work as a PRSS?	Serve others to **empower** themselves. **Advocate** to show others they are not alone. My job is to do my best to reduce stigma, reduce harm, **promote** any recovery resources. It is ugly at times. **Listen** to people suffering with co-occurring conditions and **connect** with them and point them in the direction they need to go. Ability to **connect** because we have been there. I can **advocate**. I go into the room and advocate with doctors and people who don't understand. When they want to put them in jail, I can say what's needed and I can offer different sanctions than just jail. We know when to **share.** It is intuitive. "This is the hardest job I have ever had to describe."	**Listen**, role model, make a safe place for individuals to find their path to recovery, give hope, hope, **uplifting** people and letting them know they are important. "This job is more to me than anything in this world. Don't know what I would do if I couldn't do this job anymore."
2. How did your training prepare you (or did not prepare you for your work as a PRSS?	-Not enough information about MAT -Not enough information about billing and note-taking -Did not learn about the notes and how peer services should be billed. I also did not learn how to advocate for myself. -I did not learn what words to use only that I should stay away from therapist lingo. I also wasn't	<u>Did not prepare me for:</u> the inequities in the lopsided pay structure; peers are the best kept secret. The young PRSS workforce, I have to stay tuned in to the national leaders to keep me buoyed. **-Human trafficking. (new theme).** I have been in awkward and scary situations. We are supposed to meet them where they are at and run out and meet them by ourselves, but this just isn't going to work anymore. Maybe we have to go out in pairs or meet people on our own turf instead of their.

	taught about how to deal with the deaths of clients. Also needed more information about **billing**. Training was great in TN. We are still a tight-nit group. Learned about the role of a PRSS, how it differs from a therapist and how to share lived experience It taught be to be a **coach** but did not teach me how to be a coach for a provider, or supervisors, or for billing and insurance. I learned a lot in training in 2009. The curriculum is good and covers almost everything. I received peer to peer support during my training and I am continually learning in the field.	Didn't prepare me for all of the **gaps in service**, especially housing and health insurance. People don't have what they need to just survive. Prepared me to be an all-inclusive person and engage people from wherever they are coming from, meet them where they are, open to other's opinions, life experiences, beliefs and values. Allowed me to grow in a new direction. Wellness Recovery Action Planning (WRAP) keeps me focused and I try to stay close to those. Helped me to see things as a **professional**, not as an addict. Helped me see the medical side and how to help people with the stigma taken away. Areas I could personally focus on to really be able to share my story. Helped to build my self-esteem. I have something to offer. It's a college semester in 5 days. "We are trained and get paid to help others."
3. Do you identify as an Appalachian? Follow up prompt: is it helpful to work in a community you know well?	Did not ask this question in the first focus group due to time constraints.	Two yes out of 5 participants You know where the resources are, Appalachian and rural areas have **fewer services,** no transportation, no Medicaid. Yes, because people in Appalachia have **trust iss**ues and don't talk to people they don't know. I was born and raised here and they don't care to talk to me. Also, if you go get training near your home community people will think we got above our raising. The Appalachian area doesn't have the needed **resources** other areas do.
4. What kind of stigma do you experience in the workplace, for example, from other colleagues?	Initially there was an "**us and them**" and there still is in some places but things are changing and clinical support is improving. The connection between the community and peers is still distanced. There is still an underlying	We are often **not invited** to team meetings that discuss complex and homeless clients. This didn't make any sense to me as I am working with the peers that work with this population. I asked to be on the meeting and got that done. I would let people know when they were saying something inappropriate like calling people "frequent flyers." If they were going to say something, they would say, before I say this… and I would say, then why are

	suspicion and **stigma** due to alcohol and addiction that isn't going anywhere. There is a political and social **division**. I get shamed when clients don't succeed. There is a pressure if we don't succeed. Also, other peers are j**ealous** of our success. Work related **stigm**a: "Therapist looked at me like I was the one that needed help… was accused of splitting the team due to disclosure from client that (they) didn't disclose to doctors or therapists." Don't always feel supported by other peers especially if I am in the facilitator or training role. Therapists are seen on a higher or better level than PRSS. Do they see us as a **threa**t? They don't treat us the same. "we are just addicts." Treated as a person who needs services. Also, when I became lead peer support, other peers tried to get me fired. There is **stigma** from other peers. Our opinions don't matter in a lot of situations. People could ask us first about issues and problems, instead we are usually the 5th to know. When peers are forced on "them" other colleagues it is worse than when they are a part of the decision.	you going to say it if you need to apologize to me, because it is probably just not right to say. SO, I was able to carve a niche for myself on that team. When this whole peer movement came around clinicians thought it was a **competitiv**e process. They would say, we went to school all these years and here these people are coming along, most of them don't have any kind of education. And you want us to work with them, but clients listen to what peers have to say. They just don't understand it is a marriage, you take all that book knowledge, and we live it. So it's a marriage and a lot of theme don't look at it that way. They are like, ok you deal with it your way, Peer, and I am gonna deal with it my way. So there's a lot of **confusion**. We get to tell our story and they are told not to tell their story. The **stigma** is all the way from the top to the bottom. I go to meetings and I am the only peer there, most of the time, the only African American there. A lot of times, decisions are made when peers are not at the table, you know, they find out through an email. Places say, "nothing about us without us, but it happens more times than I can count on two hands. We are at a **glass ceiling**. I talked to somebody in human resources today about getting together and starting to have a conversation about career ladders for peers and internships because peers go through this training and do all this hard work, then have nowhere to get their hours and they are just floundering around and so when they get in these positions because clinicians don't really know what we do and who we are so we are tasked with driving people around, things that peers were not meant to do. There's this **hierarchy** that is very noticeable. It is not discreet. Clinicians make a much much much much higher **salary**. I value clinicians but I think peer support should be paid much higher. We can keep people out of the emergency room. The clinician can provide IOP but sometimes they end up right back in the ER and peers are going there to meet them and going to NA meetings. Peers are able to make much more impact on their lives because we're walking with them. We are holding their hand, many times. If they don't want to go to a meeting by themselves, I go with them, if they don't want to do something by themselves, I'll go with them. Te peer knows a lot more than the clinician knows. It's called like walk and talk

		therapy and during that time people feel safe and they just feel comfortable. I mean the rapport is there. And they tell me, "I never shared this with a clinician because with the clinician it is going to be documented and there could be some repercussion. Working with a peer, they are a lot more open, they are a lot more candid and I they are a lot more, I think, receptive to getting healed. And the cost savings, I mean just think, a clinician can do a little bit in a room, in the therapy room, but imagine how much money you all are (clinicians) and peers keep people out of ER. It's lopsided There are **inequities** involved with being a peer. We should compare the clinical outcomes between peers and clinicians and see what is more effective. Others filter what they say when a peer is in the room. Many clinicians have **lived experience** but they are trained not to self-identify in this way.
5. Thoughts on MAT. If you work with folks or if you used it in your own recovery.	MAT was **not available** when I was in recovery. MAT was **not available** when I was in recovery, only methadone. **Not available** when I was in recovery. I was against it at first, and my program said it was wrong. As I worked and watched how badly MAT folks were treated in 12-step programs I witnessed that ***multiple pathways*** can work, especially for moms. **Faith based organizations** are often biased. The recovery community where I am is all **faith-based** and MAT is outcast.	-Before I judge that I need to think about how it affects me and how important these things (medications) are to me with **co-occurring** and **co-morbid**ity issues. All these things have required me to get outside of the box and see myself in a different perspective. -A close friend of mine, I watched him never get sober without that (MAT). Definitely identify with ***multiple pathways***. -I'm a strong **advocate** and everyone should have a ***pathway***, their own choices and who am I to say. -Once we talk about using other avenues that end up in death, and that becomes more frequent, I think more and more people will be more open…that we can at least keep someone around for a while to make up their own minds.

	More in **rural** communities with no meetings being open to MAT folks. I **advocate** for people using ***multiple pathways*** and work with a lot of people on MAT or MAR. They see a doctor but don't reach out in fear of being **shamed** by 12-steps etc. 12-step programs say you are not clean on MAT, but now people on MAT can become a CPRS.	-If it didn't work, people wouldn't be buying it out in the street. So, it allows people to start addressing their issues of addiction and it's a way to titrate down and I work with people who come in to the ER who are really wanting to get off that methadone or suboxone or whatever it may be on their own. It is a way for them to get control back over their lives. So, I am very **supportive** of MAT. -There a lot of money out there for the opioid epidemic
6. **Participants respond to Recovery Oriented Systems of Care (ROSC) image and description.**	No one has heard of this	-Our team in REDACTED, VA started working with a group in FL who are implementing ROSC so we plan to do this here. The idea came up in what we call a PRS stakeholders roundtable meeting. It still needs to go up the chain of leadership. We are taking it very seriously to make sure that "we don't just come up with something and throw it together. We want it to work, you know, come up with something that works for our state." -County health departments and federally qualified health centers (FQHC) are not represented on this diagram. -NOTE: Only one participant was familiar with the ROSC.
7. **Participants respond to the Recovery Ready Eco-System Model (RREM) image and description.**	No one has heard of this but one peer prefers it to the other model.	NOTE: No participant had ever seen or heard about the RREM. -"I think this guy is on to something because, when you are looking at the ROSC, that's very individualized, what is going on and who your resources are and that's us, a walk and talk peer support person knowing where each store and how to get them. That is, more of a follow the money and follow the policy model (ROSC). This is very helpful, I know that there's been times that I've tried to create programs and turn around and get squashed because I didn't go through the proper channels. That's embarrassing and frustrating, and you lose a little bit of public faith you know…if you're to come up with some sort of concept, you need to kind of run it up the ladder.

		This really represents that, and I think he's onto something, I think a broader perspective that can help us without taking two steps back.
8. What could we do to heal our communities? If we could fix this problem of SUD, what would we do? (Entered in Chat box)		-Economic opportunity, equality, inclusion; people having the ability to report overdose without criminal charges and having someplace to immediately go once they have decided to try treatment; education, program funding; letting them know there is hope, help and a way; outreach programs, more peers to go out and support others where the problem lies; more crisis type centers that will take in people quickly and show we care and want to help. -"Include the individual who has not had the opportunity to be heard before, individuals currently using. The personal we're not hearing is the individual industry.

Themes Discussed Not Included in the Interview Guide	**Quotes of Interest from Both Focus Groups**	**Focus Group 1, 2 (notes or transcript)**
Homelessness	"I worry all the time about my people, because if they get kicked out over there at least their home or their place where they're staying you know I know that they're going to be sleeping outside". "I was homeless, you know, I was living in my car. And because i've been working in the system for such a long time, I was able to you know navigate a lot of the resources and so. For me, you know being homeless and then having to navigate the system here i'm readily able to you know help others assist and navigating the system because it's really difficult, whether you know the system or not it's still difficult um so."	Focus Group 2 transcript
Gaps in Service in Rural Appalachia Areas	"It's extremely frustrating yeah because I mean we don't even have like a soup kitchen or nothing here and we have a lot of hungry people."	Focus Group 2 transcript Gaps in services are a bitter pill.
God / Spirituality	"And God told me, yes, you will do that and you'll do it, happily, and there was a reason, you know	Focus Group 2 transcript

	that I had to go through that so um I was volunteering at a Center."	
Multiple Pathways to Recovery	Instead of ROSC and RREM the WRAP (Wellness Recovery Action Planning) is the model from which they work.	Note: A lot of mention of this in both focus groups.
Peer to peer tension and jealousy (new theme not covered in existing survey)	This came up connected to the tension between peers and therapists. Some respondents indicated and gave examples of peer-to-peer competition and jealousy and stories of peers excluding one another or trying to get others fired after they were promoted.	Focus Group 1 notes and Focus Group 2 transcript
Tension between peers and therapists/clinicians	When this whole peer movement came around clinicians thought it was a **competitiv**e process. They would say, we went to school all these years and here these people are coming along, most of them don't have any kind of education. And you want us to work with them, but clients listen to what peers have to say. They just don't understand it is a marriage, you take all that book knowledge, and we live it. So it's a marriage and a lot of theme don't look at it that way. They are like, ok you deal with it your way, Peer, and I am gonna deal with it my way. So there's a lot of confusion. We get to tell our story and they are told not to tell their story. Many clinicians have lived experience but they are trained not to self-identify in this way.	Focus Group 2 transcript

Appendix E: Quantitative Survey

Opening statement: (Include attractive background for survey if possible)
"*Thank you for taking the time to complete this survey. My name is Angela Hagaman, and I am a doctoral student at East Tennessee State University. I am working to complete a dissertation that is a requirement of my public health field of study. The name of this dissertation is, "Peer Recovery Support Specialists (PRSS): Role Clarification and Fit Within the Recovery Eco-Systems of Central Appalachia." The purpose is to create a framework for understanding the work roles of PRSS in Central Appalachia and to also understand which work activities are most effective. It is critical that any research about PRSS must include the voices and feedback of PRSS. So, thank you for your willingness to participate in this survey. Please review the following information about the potential risks and benefits of completing this survey. At the end of you will need to sign your name to consent to participate before taking the rest of the survey.* " (Insert ICD for participants to view and consent).

1. Peer recovery support specialists (PRSS) are also known as recovery coaches, recovery navigators, peer support specialists, certified peer recovery specialists, and other titles. For the purposes of this study, a PRSS is someone who has been trained and certified by a state certification body, the National Association for Addiction Professionals (NAADAC) or other national certification body to work as peer support for persons with mental health or substance use disorders.
    a. By that definition, are you a certified peer recovery support specialist (PRSS)? o Yes o No (If answer is "No", skip to, "*thank you for your time, this survey is designed for certified PRSS*."
2. Are you currently employed as a PRSS? o Yes o No (if yes, skip to question 5; if no, continue to question 3.)
3. Have you previously been employed as a PRSS? o Yes o No (if No, skip to 4; if yes, answer the following)
    a. For how long were you previously employed as a PRSS? (If answer is greater than one year, continue 5 and the rest of the survey. If answer is less than one year (i.) continue to question 4 then end of survey.)
        i. Less than one year
        ii. 1-2 years
        iii. 3-5 years
        iv. 5-10 years
        v. More than 10 years
4. What are the main reasons you are not employed as a PRSS? Check all that apply. (Skip to end of survey after answering question 5) "*Thank you for your time. This survey is intended for PRSS who are currently employed as a PRSS or have been previously employed as a PRSS for at least one year*."
    a. Not able to fulfill that role (please explain)_____
    b. Impacts my disability benefits
    c. Unable to maintain recovery
    d. Co-workers did not treat me well or had a negative attitude towards me
    e. Justice system involvement
    f. Fired
    g. Laid off/job ended
    h. Temporary/seasonal
    i. Due to COVID-19
    j. Other reason (please describe)

5. What state(s) do you work in? Check all that apply (If answer is other, skip to end of survey "*Thank you for your time. This survey is intended only for PRSS who work in the 5 states of Central Appalachia*."
    a. Kentucky
    b. North Carolina
    c. Tennessee
    d. Virginia
    e. West Virgnia
    f. Other
6. What county or counties do you work in? <u>All counties in each of the 5 states</u>.
7. What state do you reside in? (Drop down list of 5 states.)
8. In what state(s) did you receive your certification? (Drop down list of 50 states and check all that apply.)
9. In what year did you receive your certification(s)? (Drop down text entry date for each state checked)
10. What other national or international peer certifications do you have? (Add matrix with yes or no options for each choice.)
    a. NAADAC's National Certified Peer Recovery Support Specialist (NCPRSS)
    b. Mental Health America's National Certified Peer Specialist (NCPS)
    c. Peer Recovery (PR) credential with the International Certification and Reciprocity Consortium (IC&RC)
    d. Other? Please describe: _____
11. About how long have you been working as a professional in the addictions field? o Years____ Months___
12. What was the **most** important reason you became certified PRSS? (from CPS career outcomes survey at peerspecialist.net)
    a. I was encouraged to apply by someone
    b. It was a career and/or educational stepping stone
    c. It was required by my employer
    d. I would receive professional recognition
    e. I would be eligible for higher pay and/or career advancement
    f. Other (please describe) _____
13. What is the most important reason you work in peer support? (CPS Peer Outcomes Study)
    a. Personal meaning
    b. Feeling valued by others
    c. Giving back to others
    d. Training emphasized recovery language
    e. Other (please describe)
14. What do you believe is the most important aspect of your work as a PRSS? (Free text) _____

<u>Work setting and professional activities</u> : *"The following section will ask questions about your current work setting and clients. If you are no longer employed as a PRSS, please answer questions as they relate to your previous employment as a PRSS."*

15. Are you or were you employed as a:
    a. SUD (substance use disorder) peer
    b. Mental health disorder peer
    c. Both a mental health and SUD peer
    d. Other (please describe) _____

16. What is your **primary** work setting? If you are no longer employed as a PRSS, please select the work setting you were previously employed at. (SAMHSA)
    a. Recovery community center
    b. Recovery residence
    c. Collegiate recovery program
    d. Drug court
    e. Justice system
    f. Child welfare agency
    g. Community mental health
    h. Primary care
    i. Hospital (ED) Emergency Department
    j. In patient treatment
    k. Homeless Shelter
    l. Medication Assisted Treatment (MAT) clinic
    m. HIV/AIDS health centers
    n. Church or faith-based entity
    o. Social services organization
    p. Other? _____ (please specify)
17. How long have you been employed at this site? If you are not currently employed as PRSS, please select how long you were employed at the site selected. Years____ months___
18. On average how many hours per week do you work? If you are not currently employed as PRSS, please indicate average hours per week you previously worked. _____
19. I am satisfied with the following features of my job? (1-Satisfied, 2-Very satisfied, 3-dissatisfied, 4-very dissatisfied) (Lapidos 2018)
    - flexibility of hours
    - physical safety
    - promotion opportunities
    - job security
    - stress level
    - supervisor supportiveness
    - non peer staff supportiveness
    - overall supportiveness
20. To what extent are there professional advancement opportunities available to you in your work setting?
    a. Always
    b. Very Often
    c. Sometimes
    d. Rarely
    e. Never
21. Do you have an established job description for your position? Yes or No
22. Are you required to receive supervision as a component of your job or certification guidelines? If no, proceed to question 23. If yes, answer the following.
    a. Who provides your supervision?
        i. Clinical staff
        ii. Other peers
        iii. Other (please describe):
23. What is your current hourly wage? If you are not currently employed, please indicate the hourly wage you received at previous PRSS job:
    a. Less than $10 per hour
    b. $10-15 per hour

c. $16-20 per hour
d. $20 + per hour

24. In your role as a PRSS, have you worked with persons who have been trafficked? Yes or No
25. How often do you engage in each of these professional activities? (Never, Rarely, Sometimes, Often, Always). If participant answers at least "sometimes" to an item, they will then be asked to measure the strength of their skill (not at all strong, slightly strong, moderately strong, very strong) (Lapidos 2018 derived from Michigan Medicaid provider manual)
    - Benefits assistance (health insurance, disability or social security benefits, child care assistance benefit)
    - Community visits with clients
    - Crisis support
    - Developing or leading groups
    - Financial Education
    - Health and wellness support
    - Housing assistance
    - Intake or other paperwork (notes, billing, etc.)
    - Integrating physical and mental health care
    - Person-centered treatment planning
    - Self-determination work
    - Sharing recovery stories
    - Vocational assistance
    - Welcoming and ambassador work
    - Other (please describe) _____
26. How much of your time do you spend in each of the following work settings. Note: Total should equal 100%. (Slider bar. Total cannot exceed 100%) (Ashford RREM model)
    - recovery informed institutional services;
    - prevention organizations;
    - harm reduction organizations;
    - reentry services organizations;
    - recovery community centers;
    - collegiate recovery programs;
    - recovery/drug courts;
    - mutual-aid organizations;
    - recovery community organizations;
    - peer recovery services;
    - recovery high schools;
    - advocacy organizations;
    - medical treatment services
    - recovery residences.
    - Other: _____ please describe.
27. How much of your time do you spend doing the following? Total time must not exceed 100 %. Note: Total should equal 100%. (slider bar to 100%) (Ashford 10 key strategies)
    (a) early identification and engagement;
    (b) use of role modeling;
    (c) increase motivation for change;
    (d) offer education;
    (e) provide effective treatments and interventions;
    (f) provide opportunities for individuals to occupy valued roles;

(g) connection between individuals and the larger recovery community; (h) provide post-treatment monitoring and recovery coaching;
(i) offer meaningful recovery support services (e.g. supported housing, supported employment, supported education);
(j) offer legal advocacy
(k) Other: _____ please describe.

28. How much of your time do you spend engaging in the following types of PRSS support identified by the Substance Abuse and Mental Health Services Administration (SAMHSA)? Note: Total should equal 100%. (slider bar cannot exceed 100%)
    - Emotional (mentoring and peer-led support groups)
    - Informational (parenting classes, job readiness training)
    - Instrumental (access to child care, transportation)
    - Affiliational (recovery centers, sports leagues, and socialization opportunities)
29. How often have co-workers treated you this way in the past because of your alcohol and/or drug use history? Matrix may be helpful here. (modified from Smith enacted stigma sub-scale)
    a. Co-workers have thought that I cannot be trusted. (Never, not often, somewhat often, often, very often)
    b. Co-workers have looked down on me. (Never, not often, somewhat often, often, very often)
    c. Co-workers have treated me differently. (Never, not often, somewhat often, often, very often)
    d. Co-workers have not listened to my concerns. (Never, not often, somewhat often, often, very often)

30. To what extent is jealousy and competition among PRSS a problem in your work setting?
    a. To a great extent
    b. Somewhat
    c. Very little
    d. Not at all
31. What in your opinion is the relationship like between PRSS and mental health counselors/therapists? (open-ended) _____
32. Since COVID-19 emergency orders began, what alternative methods have you used to provide services to individuals affected by substance use disorder? (Check all that apply)
    a. I was not employed as a PRSS during the COVID-19 pandemic
    b. One-on-one online meeting platforms (Zoom, WebEx, etc.)
    c. Group online meeting platforms
    d. Telehealth audio platforms
    e. Telehealth audio-video platforms
    f. App-based self-help programs
    g. Text messaging
    h. Social media
    i. Purchased minutes or track phones for client phone calls
    j. Supplemental mailed-to-home information
    k. Supplemental information posted on websites
    l. Alternative vendors/supply chain
    m. Additional/flexible work hours
    n. Additional or reassignment of volunteers
    o. New client screening methods
    p. Hot-line or call center

q. Other (please specify): _____
r. None

33. Of these alternatives you used so far, which of these had not been used prior to COVID-19?
    a. One-on-one online meeting platforms (Zoom, WebEx, etc.)
    b. Group online meeting platforms
    c. Telehealth audio platforms
    d. Telehealth audio-video platforms
    e. App-based self-help programs
    f. Text messaging
    g. Social media
    h. Purchased minutes or track phones for client phone calls
    i. Supplemental mailed-to-home information
    j. Supplemental information posted on websites
    k. Alternative vendors/supply chain
    l. Additional/flexible work hours
    m. Additional or reassignment of volunteers
    n. New client screening methods
    o. Hot-line or call center
    p. Other (please specify): _____
    q. None
34. During the COVID-19 pandemic, have you identified any emerging trends or new issues that you had not previously experienced with the people you serve? Yes or No; if Yes, please describe: _____

PRSS Training : *The following section will ask you a few questions about your PRSS training experience.*

35. To what extent did your PRSS certification training prepare you for the work you are doing?
    a. A great deal
    b. Some
    c. Very little
    d. Not at all
36. What, if anything, could have improved your training experience to better prepare you for work in the field? _____
37. Have you received training about adverse child experiences (ACEs)? (Yes, No)
38. Have you received training about human trafficking? (Yes, No)

Recovery Questions: *The following questions are more personal in nature as they will ask for information about your recovery process. Each question will have an option entitled "Prefer not to answer," so please feel free to choose this response for any question that you do not wish to answer.*

39. Are you in recovery from a mental health disorder, substance use disorder, or both? (if yes to SUD or both proceed to 40. If MH only proceed to #41)
    a. Substance use disorder (SUD)
    b. Mental health disorder
    c. Both
    d. I prefer not to answer
40. What chemical addiction ('drug of choice') brought you into recovery?
    a. Check all that apply.

i. Alcohol
ii. Cocaine
iii. Opiates/opioids
iv. Marijuana
v. Hallucinogens
vi. Benzodiazepines
vii. Amphetamine/methamphetamine
viii. Inhalants
ix. Other substance (specify)_____
x. Prefer not to answer

41. Were you ever incarcerated? Yes, No, Prefer not to answer. (If yes continue to next question. If no, skip to question 45.
42. How long were you incarcerated? Years____ months____ days____ or Prefer not to answer
43. Why were you incarcerated? Please describe or name the charges that led to the incarceration: _____ or Prefer not to answer
44. Do you support the use of prescribed medication (such as Antabuse, Naltrexone, Buprenorphine, and Methadone) to assist persons in recovery form substance use disorder?
    a. Yes
    b. No
    c. Other (please describe) _____
    d. Prefer not to answer
45. Did you use prescribed medications to support your recovery? If yes, what medications did you use? (check all that apply) If no, skip to #46. Do we need to use the trademark "R" for brand names?
    a. Antabuse (disulfiram)
    b. Naltrexone
    c. Buprenorphine mono-product (Subutex) for detox
    d. Buprenorphine combination product (Suboxone) for detox
    e. Buprenorphine mono-product (Subutex) for maintenance
    f. Buprenorphine combination product (Suboxone) for maintenance
    g. Methadone for detox
    h. Methadone for maintenance
    i. SSRI for depression or anxiety (such as name brands like Celexa, Lexapro, Prozac, Luvox, Paxil and Zoloft)
    j. SNRI for depression or anxiety (such as name brands like: Khedezla, Pristiq, Cymbalta, Fetzima, and Effexor)
    k. Benzodiazepines (such as brand names like Xanax, Librium, Klonopin, Valium, and Ativan)
    l. Anti-psychotics (such as brand names like Clozaril, Abilify, Risperdal, Seroquel, Zyprexa, and Geodon)
    m. Bupropion (Wellbutrin)
    n. Mood stabilizer (Lithium)
    o. Medications for ADD or ADHD (such as Adderall, Mydayis, Focalin and Vyvanse)
    p. Other? _____
    q. Prefer not to answer
46. To what extent did you used illicit (not prescribed to you) medications for opioid use disorder (methadone, buprenorphine, etc.) to support your recovery?
    a. Very Frequently

b. Frequently
c. Occasionally
d. Rarely
e. Very Rarely
f. Never
g. Prefer not to answer

47. How long have you been in recovery? Years_____Months___ Prefer not to answer

Demographic and Personal Information: *The following questions will ask basic demographic questions and also a few personal questions about your cultural, spiritual and political identities and economic status. Each question will have an option entitled "Prefer not to answer," so please feel free to choose this response for any question that you do not wish to answer.*

48. Please indicate your gender.
    a. Female
    b. Male
    c. Transgender male/trans man
    d. Transgender female/trans woman
    e. Do not identify as female, male, or transgender
    f. Genderqueer/gender non-conforming
    g. Prefer to self-describe: _____
    h. Prefer not to answer
49. Are you of Hispanic, Latina, or Spanish origin? Yes or No or Prefer not to answer
50. Which one or more of the following would you say is your race?
    a. Black or African American
    b. White
    c. Asian or Asian American
    d. Native American, Alaska Native, or American Indian
    e. Native Hawaiian or Pacific Islander
    f. Other
    g. Prefer not to answer
51. What was your age on your last birthday? _____
52. In politics today, do you consider yourself a Republican, Democrat, or Independent? (should this go before or after the religiosity question below?)
    a. Republican
    b. Lean towards Republican
    c. Independent
    d. Lean towards Democrat
    e. Democrat
    f. Don't know
53. What is your religious affiliation?
    a. Catholic
    b. Other Christian Religion (Lutheran, Methodist, Baptist, Non-Denominational, Presbyterian, etc.)
    c. Other World Religion (Buddhist, Islam, Judaism, Sikh, etc.)
    d. I do not have a religious affiliation
    e. Prefer not to answer
54. Which of these statements comes closest to describing your feelings about the sacred texts of your tradition?
    a. The sacred text is the actual word of God and is to be taken literally, word for word on all subjects.

b. The sacred text is the inspired word of God, but not everything should be taken literally, word for word.
c. The sacred is an ancient book of fables, legends, history and moral precepts recorded by man.
d. Prefer not to answer.

55. Do you identify as Appalachian? Yes, No, Prefer not to answer (if yes, proceed to next question, if no proceed to question 48)
56. In general, being Appalachian is an important part of my self-image.
    a. Strongly Disagree
    b. Disagree
    c. Somewhat Disagree
    d. Neither Agree or Disagree
    e. Somewhat Agree
    f. Agree
    g. Strongly Agree
    h. Prefer not to answer
57. I have a strong attachment to other Appalachian people.
    a. Strongly Disagree
    b. Disagree
    c. Somewhat Disagree
    d. Neither Agree or Disagree
    e. Somewhat Agree
    f. Agree
    g. Strongly Agree
    h. Prefer not to answer
58. My destiny is tied to the destiny of other Appalachian people.
    a. Strongly Disagree
    b. Disagree
    c. Somewhat Disagree
    d. Neither Agree or Disagree
    e. Somewhat Agree
    f. Agree
    g. Strongly Agree
    h. Prefer not to answer
59. Being Appalachian is an important reflection of who I am.
    a. Strongly Disagree
    b. Disagree
    c. Somewhat Disagree
    d. Neither Agree or Disagree
    e. Somewhat Agree
    f. Agree
    g. Strongly Agree
    h. Prefer not to answer
60. What is the highest educational degree you have completed?
    o GED
    o High-school diploma
    o Associate degree (specify major)_____
    o BA or BS degree (specify major)_____
    o Masters degree (specify discipline)_____
    o PhD, PsyD, or equivalent doctoral degree (specify discipline)_____
    o MD

o None (if none, how many years of school did you complete?
0 Prefer not to answer

61. How confident are you that you could come up with $2,000 if the need arose within the next month? (Lusardi, Schneider, and Tufano Financial fragility 2011)
    a. I am certain I could come up with the full $2,000
    b. I could probably come up with the full $2,000
    c. I could probably not come up with the $2,000
    d. I am certain I could not come up with $2,000
    e. Prefer not to answer

Research Interest: *Finally, the following questions are to gauge your interest in future research efforts related to your work as a PRSS and your personal recovery journey.*

62. Would you be interested in participating in future research studies examining PRSS work? If yes, continue to next question. If no, skip to question 64.
63. What research topics would be of most interest to you? _____
64. Would you be willing to participate in a research registry (a website that collects information about a group of individuals) to provide information about your work as a PRSS and your recovery journey? If yes, continue to the end of the survey. If no, please describe in more detail _____

Thank you for taking the time to complete this survey. Can you confirm which of the following you are interested in? (Check all that apply).

- Participating in future research studies examining PRSS work.
- Participating in a research registry (a website that collects information about a group of individuals) to provide information about your work as a PRSS and your recovery journey.
- Receiving a report of the survey results.
- Being entered into the gift card lottery.

Please enter the following contact information. This information will only be saved for the items you selected above. If you wish to be entered into the gift card lottery, we must have this information for university record keeping and to email you the gift card. This information will not be connected in any way to your survey responses.

Thank you for providing your contact information. Have a great day!

VITA

ANGELA M. HAGAMAN

Education:

East Tennessee State University, Doctor of Public Health
Area of Study: Community and Behavioral Health, 2021

East Tennessee State University, Non-Degree
Area of Study: TN Counseling Credentials, 2014

Appalachian State University, M.A.
Major Area: School Counseling, 2007

Appalachian State University, B.S.
Major Areas: English, Secondary Education

Professional Experience:

Director of Operations
Addiction Science Center
College of Public Health
East Tennessee State University, 2013-Present

Program Director
NIDA, R24 Studies to Advance Recovery Supports (STARS)
Addiction Science Center
College of Public Health
East Tennessee State University, 2020-Present

Program Manager
HRSA FORHP Rural Health Equity Research Center
Addiction Science Center
College of Public Health
East Tennessee State University, 2020-Present

Principal Investigator
SAMHSA/TDMHSAS TN Opioid SBIRT Project
Addiction Science Center
College of Public Health
East Tennessee State University, 2019-Present

Program Director and Interim Director of Operations
NIDA, R24 Drug Abuse Research Grant (DIDARP)
Center for Prescription Drug Abuse Prevention and Treatment
College of Public Health
East Tennessee State University, 2013-2016

PRN Therapist
In-patient crisis and alcohol and drug treatment
Crisis Stabilization Unit, Magnolia Ridge, and Willow Ridge
Frontier Health, Johnson City, TN, 2014-2016

Director of Prevention Services and SOS/YRC Program Director
Federal Drug Free Communities, JCPC and NC State Block Grant
Western Youth Network
Boone, NC, 2002-2013

Program Coordinator
Mountaineer Millennium Seven County Consortium
Federal 21st Century Community Learning Center Grant
Watauga County Schools
Boone, NC, 2001-2002

Publications:

Hagaman A, Brooks B, Mathis SM, Moore K, Pack RP. Chapter 9: The Opioid Crisis in Appalachia. In: Scutchfield, FD, Wykoff, R, eds. *Appalachian Health*. 1st ed. (In press).

Mathis SM, **Hagaman A**, Hagemeier N, Baker K, Pack RP. Provider–patient communication about prescription drug abuse: A qualitative analysis of the perspective of prescribers. *Substance abuse.* 2019:1-11.

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Awards:

Mason Whittington Distinguished Service Award, 2007