Drug and Alcohol Dependence Reports 12 (2024) 100263

Contents lists available at ScienceDirect

Drug and Alcohol Dependence Reports

journal homepage: www.elsevier.com/locate/dadr

Quality of participants' relationships to peer recovery support specialists as a function of perceived similarities: An exploratory analysis

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HIGHLIGHTS

- Participants rated relationships with peer recovery support specialists (PRSS).
- Shared recovery pathways relate to good-quality PRSS-participant relationships.
- No difference in relationship quality for matched PRSS-participant gender or race.
- Participants related better to PRSS with similar ages and relationships with family.
- Shared specific lived experiences may matter less for PRSS work in general contexts.

ARTICLE INFO

Keywords:
Peer recovery support specialist
Recovery coach
Lived experience
Recovery community center
Recovery support services

ABSTRACT

Background: A growing evidence base supports the value of peer recovery support specialists (PRSS), particularly due to shared lived experience with participants (recipients of PRSS services). However, little research has examined whether congruence on certain aspects of "peerness" (e.g., demographics, experiences) matters for PRSS-participant relationships.
Methods: Through a pilot study under the NIDA-funded Initiative for Justice and Emerging Adult Populations (JEAP), adults who had recently received PRSS services (N=100) were interviewed. Participants completed a modified version of the Scales for Participant Alliance with Recovery Coach (SPARC), a measure of PRSS-participant relationship quality, and rated themselves as different/similar to their PRSS in several domains using a six-point scale.
Results: Participants had met with their PRSS for a median of 10 sessions over two months. SPARC scores were unrelated to participant demographics or lived experiences. However, better-quality relationships were reported by participants who believed their PRSS was similar to them in relationships with family (p=.004), spirituality/religion (p=.001), age (p<.001), and overall recovery pathway (p<.001). Total SPARC scores were not significantly correlated with perceived PRSS-participant similarities on gender, race/ethnicity, substances of choice, and history of incarceration or substance use treatment.
Discussion: Results from this pilot study suggest that PRSS-participant alignment on past experiences (e.g., prior incarceration, choice of drugs) may not be needed to establish good-quality working relationships. However, similarities on factors related to current life stage (e.g., age, family relationships) and/or recovery process (e.g., overall pathway, spirituality) may be more important. Future research should employ mixed-methods approaches to elucidate these unique findings.

1. Introduction

Peer recovery support specialists (PRSS) are individuals with lived experience related to substance use and formal training who are employed to help others on their pathway to substance use recovery (SAMHSA, 2015). PRSS are believed to be especially helpful for participants (recipients of PRSS services) due to their history of navigating similar systems, (e.g., substance use treatment, criminal legal system

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https://doi.org/10.1016/j.dadr.2024.100263
Received 2 July 2024; Accepted 16 July 2024
Available online 18 July 2024
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[CLS] involvement), as well as providing empathy and genuine care (Reif et al., 2014; Sarabia, 2023). PRSS may serve as a recovery coach, linkage facilitator, harm reductionist, or advocate, filling many roles at the various institutions that employ them. PRSS have been increasingly legitimized as substance use disorder (SUD) professionals: to date, all 50 states in the U.S. have PRSS training and certification programs (Chapman et al., 2018; PRCE, 2024) and 37 states permit Medicaid billing of PRSS services as of 2018 (U.S. GAO, 2020).

PRSS can operate in any space where individuals who use substances and/or are seeking recovery are present, including treatment centers, recovery residences, jails, prisons, hospitals, and harm reduction programs (Bassuk et al., 2016; Chapman et al., 2018; Tillson et al., 2022). However, PRSS services and skills are often contextual based on employer and work placement. For example, PRSS in emergency departments must have knowledge of the healthcare system (Kirk et al., 2023), which may be less directly relevant in a recovery residence setting. Context also determines the roles of PRSS and the goals of their participants, which can include recovery facilitation for those working in treatment centers or harm reduction in the case of PRSS working in syringe exchange programs (Ashford et al., 2018). Other organizations such as recovery community centers (RCCs) may have PRSS providing linkage facilitation or assisting participants to access relevant services in the community (Hogue et al., 2024).

In spite of this variation, a common set of core characteristics have been identified for PRSS workers, including lived experience, bridging gaps between service recipient and service provider, using strength-focused social and practical support, and role-modeling for participants (Gillard et al., 2014; Watson, 2019). The evidence base supporting the efficacy of PRSS is nascent, but promising: PRSS services have been associated with reductions in substance use; increases to employment, education, and engagement with medical services; and positive outcomes related to SUD treatment and recovery support services, such as improved relationships with providers, better treatment retention, and higher satisfaction with treatment (Ashford et al., 2019; Bassuk et al., 2016; Cos et al., 2020; Eddie et al., 2019; Reif et al., 2014; Stack et al., 2022).

Nonetheless, much remains unknown regarding the unique relationship between PRSS and their participants. Little research has been done to uncover the mechanisms behind the value of lived experience, particularly related to congruence of demographic characteristics and identity, and whether PRSS services are more effective when certain characteristics or specific lived experiences (i.e., beyond substance use and recovery generally) are shared. A substantial research base has examined concordance of similar factors between patients and clinical providers (e.g., physicians or clinicians) with mixed findings: one systematic review concluded that racial/ethnic concordance improved communication (Shen et al., 2018), while another mixed-methods systematic review found no overall effect (Miller et al., 2024). Similarly mixed results have been found for sex/gender concordance and communication, satisfaction, and service engagement, and some studies have suggested that concordance may be multifactorial (see review by Otte, 2022). However, it is unclear whether these types of findings would be applicable to PRSS-participant relationships, given key differences between PRSS and clinical providers. Although both roles involve building rapport, establishing trust, and providing emotional support, PRSS act as partners or consultants and develop egalitarian relationships with those they serve (SAMHSA, 2017, 2015). Although participants may look up to PRSS as role models, the relationship is intended to be non-hierarchical and founded on shared lived experience. Thus, different shared qualities may be desirable for individuals working with PRSS compared to clinicians, although no research to date has quantitatively explored this topic.

Research examining PRSS services have shown promising results, including reductions in substance use and CLS involvement (Bassuk et al., 2016; Reif et al., 2014). However, as PRSS grow into new service settings (e.g., emergency departments, correctional facilities) and the PRSS workforce expands (Stack et al., 2022), additional research is needed to examine which elements of shared experience (e.g., substances of choice, history of incarceration) and/or identity (e.g., race, gender) may be most important to support effective working relationships between PRSS and participants. Thus, the present study aims to examine PRSS-participant relationship quality as a function of participant-level variables (e.g., participant's age, treatment history, recent substance use) and participants' perceived similarities to their PRSS.

2. Methods

2.1. Participants and procedures

All data were collected under a pilot study funded by the NIDA-funded Initiative for Justice and Emerging Adult Populations (JEAP). Participants were recruited using flyers that were left at a RCC located in a metropolitan area of one southern state. PRSS working at the RCC were encouraged to share the opportunity with their participants. The RCC was in close proximity to several recovery residences, many of which encouraged residents to attend recovery support meetings at locations in the community, including the RCC recruitment location. Thus, word about the study spread to residents of these programs, which also employ PRSS on staff.

To be considered eligible, individuals needed to 1) be over 18 years of age, 2) have met with a certified PRSS at least three times, and 3) have worked with a certified PRSS within the last three months. Participants were screened via phone or in-person at the RCC by the investigator and two students. Eligible and consenting participants completed interviews over the phone (14 %) or in-person (86 %) in a private room at the RCC. Interviews lasted approximately 45 minutes and participants were compensated with a $30 Visa gift card. All procedures were approved by the University's Institutional Review Board. Between July 14 – September 15, 2023, 100 interviews were completed.

2.2. Measures

2.2.1. Participant-level variables

Participants were asked to self-report sociodemographic information and describe any history of CLS involvement, substance use, prior substance use treatment and recovery support services, and experiences specifically with PRSS.

2.2.1.1. Demographics. Participants provided age in years, race/ethnicity (non-Hispanic White=1, other race/ethnicity=0), and gender (woman=1, man=0; all participants identified as cisgender). Participants were also asked if they had ever had any children (1=yes, 0=no), education (high school diploma/GED or higher=1, less than high school/GED=0), and whether they currently had a job or were in school or training (1=yes, 0=no).

2.2.1.2. CLS involvement. Participants self-reported whether they had ever been arrested and whether they had ever spent time in juvenile detention, jail, and prison (all 1=yes, 0=no).

2.2.1.3. History of substance use. Participants reported the age at which they first began using substances "regularly" (i.e., three or more times per week, binges, and/or problematic irregular use). Participants were also asked whether they had ever injected drugs, ever experienced an opioid overdose, and used any substances in the past 90 days (all 1=yes, 0=no). Lastly, participants shared what they considered to be their "primary substance of choice."

2.2.1.4. Prior substance use treatment and recovery support services. Participants were asked whether they had ever received treatment for

substance use (1=yes, 0=no). If yes, participants provided the number of treatment episodes for residential/inpatient, sober living/recovery residence, and outpatient/intensive outpatient. Participants were also asked specifically whether they had ever been prescribed medications for the treatment of opioid use disorder (MOUD, e.g., buprenorphine or methadone; 1=yes, 0=no). Lastly, participants reported whether they had ever attended self-help recovery group meetings (e.g., 12-step fellowships), if they currently attended meetings, and if they currently had a sponsor or mentor (all 1=yes, 0=no).

2.2.1.5. Experiences with PRSS. Participants self-reported how many different PRSS they had worked with in their lifetime. Participants who had previously worked with more than one peer were asked to think of the PRSS that they were currently working with or had most recently worked with (their "primary PRSS") and to share what type of agency the PRSS worked at (open-response, recoded into three categories), how long (in days) they had worked with that PRSS, and how many sessions they had had together.

2.2.2. Perceived similarities to PRSS

Thinking of their primary PRSS, participants were asked to rate how different or similar they believed they and their PRSS were along several dimensions: age, gender identity, race/ethnicity, CLS involvement, parenting status (i.e., having children, child custody status), relationships with family, where they're from or the place they grew up, drug(s) of choice, substance use treatment history, spirituality or religion, and overall recovery pathway. If participants were unsure how to answer (e.g., if they and their PRSS had not explicitly discussed these topics), they were instructed to give their best guess or impression. Each dimension was rated on a six-point scale: 1=extremely different, 2=very different, 3=a little different, 4=a little similar, 5=very similar, 6=extremely similar.

2.2.3. Scales for participant alliance with recovery coach (SPARC)

To measure the quality of the relationship between participants and their primary PRSS, participants were asked to respond to a modified version of the Scales for Participant Alliance with Recovery Coach (SPARC). The original set of scales was first developed through a process of item adaptation based on five scales of the Client Evaluation of Self in Treatment (CEST), a widely used and validated measure of treatment experience (Garner et al., 2007). Next steps included item development, content expert review, focus group pre-testing, and pilot administration with a convenience sample of 100 participants (Fallin-Bennett et al., 2023). Due to low variance observed in the pilot administration, additional modifications were made for the present study, including: 1) removal of redundant or poor-performing items, 2) limitation of each relational subscale to a consistent number of items (five) to reduce respondent burden, and 3) creation of new subscales for constructs not uniquely represented in the original scale, but which emerged as critical to PRSS-participant relationship quality through a series of qualitative interviews with 20 PRSS in the first stage of this pilot study. Additional information about scale revisions is available in the Appendix.

The modified version of the SPARC used in the present study included eight subscales. One subscale was related to *convenience/logistics* of recovery coach services (e.g., program is well-organized, in a convenient location; 6 items; α=0.82). Another subscale measured positive recovery-related *outcomes* (e.g., reducing risk, learning solutions to challenges; 8 items; α=0.83). The remaining six subscales contained five items each and described aspects of relationships between participants and PRSS (*relational subscales*), namely: *role model* (participant looks up to their PRSS, thinks they are relatable; α=0.89), *rapport* (getting along with your PRSS; α=0.92), *honesty* (PRSS provides honest feedback; α=0.89), *motivation/encouragement* (PRSS encourages participant and celebrates their successes; α=0.85), *nonjudgmental acceptance* (PRSS supports/accepts participant, no matter what; α=0.84), and *linkages* (PRSS connects participant to resources, services, and community; α=0.90). All SPARC items are rated on a five-point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Uncertain, 4=Agree, 5=Strongly Agree).

For the present analysis, only the SPARC *relational subscales* were analyzed. Responses to items across the six relational subscales were also added together to generate a sum total score. The combined relational subscales demonstrated excellent internal reliability (α=0.98).

2.3. Analytic plan

Means and proportions were calculated to describe the sample. A series of Pearson's correlations, *t*-tests, and one-way ANOVA analyses were used to analyze relationships between all participant-level variables with SPARC relational subscale scores. Then, Pearson's correlations were calculated to examine associations between perceived similarity ratings and SPARC relational subscale scores (total and individual subscales). No variables were missing data for more than 2 % of cases; thus, missing data were excluded pairwise from analyses. All analyses were conducted using SPSS 28.

3. Results

A descriptive sample profile is presented in Table 1. Participants primarily identified as non-Hispanic White (83 %), with 39 % identifying as female and an average reported age of 43.7. Almost all

Table 1
Descriptive profile of participants who had recently received PRSS services (*N*=100).

Demographics	
Age (range 25 – 67)	43.7 (9.7)
Race (non-Hispanic White)	83 %
Gender (woman)	39 %
Ever had any children	76 %
Achieved HS diploma/GED or higher education	81 %
Currently have a job or are in school/training	39 %
Criminal legal system involvement	
Ever arrested?	98 %
Ever spent any amount of time in…	
Juvenile detention	27 %
Prison	35 %
Jail	97 %
History of substance use	
Age when "regular" drug use began (range 3–47)	16.2 (6.7)
Ever injected any drugs	68 %
Ever experienced an opioid overdose	54 %
Primary substance of choice	
Opioids	32 %
Methamphetamine	27 %
Alcohol	25 %
Marijuana	17 %
Used any substances in past 90 days	34 %
Prior substance use treatment & recovery services	
Ever received substance use treatment?	92 %
# of times in residential treatment (range 0–25)	3.6 (3.9)
# of times in sober living (range 0–50)	2.8 (5.4)
# of times in outpatient/IOP (range 0–10)	1.6 (2.2)
Ever received medication for opioid use disorder?	68 %
Ever attended self-help recovery group meeting?	98 %
…currently attending meetings	88 %
…currently have a sponsor/mentor	60 %
Experiences with peer recovery support specialists (PRSS)	
# of peer specialists ever worked with (range = 1–50)	4.6 (6.9)
Current primary peer works at…	
Sober living or recovery residence	49 %
Recovery community center	42 %
Outpatient clinic	9 %
How long has participant worked with primary peer so far (range = 7 days–3 years; median = 60 days)	4.5 months
How many sessions with primary peer? (range = 1–365; median = 10)	20.8 (43.0)

participants reported some level of prior CLS involvement, with 98 % reporting any prior arrests and just over a third (35 %) having served time in prison. Participants reported initiating “regular” drug use at 16.2 years old, with about 68 % reporting lifetime injection drug use and 54 % reporting lifetime opioid overdose. Most participants (92 %) had previously received some type of substance use treatment services, including 68 % who had been prescribed MOUD. Participants also reported extensive engagement with recovery support meetings, with 98 % lifetime and 88 % current attendance.

On average, participants had worked with 4.6 PRSS in their lifetimes (range 1–50). When asked to consider their current “primary peer,” participants reported having worked with that PRSS for an average of 4.5 months and 20.8 sessions. Most primary PRSS worked in a sober living/recovery residence setting (49 %) or the RCC where outreach and recruitment took place (42 %), although some participants (9 %) reported working with their primary PRSS through an outpatient clinic setting (e.g., for MOUD).

Participants generally provided positive ratings for their primary peer on the SPARC relational subscales, with a combined mean of 26.78 across all six subscales combined (out of a possible range of 6–30). Out of a possible range of 1–5, the subscales with the highest average ratings were *honesty* (M=4.56) and *motivation/encouragement* (M=4.50). Subscales with the lowest average ratings were *linkages* (M=4.36) and *role model* (M=4.45). Results are shown in Table 2.

When asked to rate perceived similarities between themselves and their primary PRSS across a variety of domains, participants provided a range of responses (see Fig. 1). Participants were most likely to indicate that they were similar to their peer (a little, very, or extremely) regarding spirituality/religion (73 %), overall recovery pathway (73 %), gender (70 %) and race/ethnicity (66 %). Fewer participants reported feeling similar to their peer in terms of parenting status (42 %), the place where they were from (45 %), and age (55 %).

Exploratory bivariate analyses examining relationships between SPARC relational scores and participant demographics, CLS involvement, substance use patterns, and substance use treatment history demonstrated few significant differences (see Table 3). Namely, a greater number of lifetime outpatient or intensive outpatient treatment episodes was associated with lower SPARC relational scores ($r = -0.24$, p =.014). Regarding experiences with PRSS, no significant differences were observed in SPARC relational scores, with the exception of a one-way ANOVA analysis examining differences by setting where participants' primary peer worked [$F(2, 97)=3.77$, p=.027]. Post hoc analyses (Tukey's HSD) indicated that SPARC scores among participants working with peers at the RCC (M=27.88, SD=2.48) were significantly higher than those of participants with peers at a recovery residence or sober living (M=26.02, SD=4.18; p=.030).

Lastly, a series of correlations were used to examine associations between perceived PRSS-participant similarity and SPARC scores. Higher total SPARC scores (better-quality relationships) were reported by participants who perceived greater similarity in relationships with family (r=0.29, p=.004), spirituality or religion (r=0.32, p=.001), age (r=0.36, p<.001), and overall recovery pathway age (r=0.45, p<.001). Similar patterns were observed in correlations between perceived similarities and SPARC relational subscale scores. Uniquely, however, higher scores on the *rapport* SPARC subscale were reported by participants who perceived greater similarity to their PRSS on prior CLS involvement (r=0.21, p=.038) and higher scores on the *nonjudgmental acceptance* SPARC subscale were associated with greater perceived PRSS-participant similarity on parenting status (r=0.23, p=.024). Additionally, higher *linkage to resources* SPARC subscale scores were endorsed by participants who rated their PRSS as more similar in terms of where they're from or the place they grew up (r=0.23, p=.019).

Table 2
Participant ratings of PRSS on modified Scales for Participant Alliance with Recovery Coach (SPARC; N=100).

	M (SD)
Total PRSS-participant relationship score (range 6–30)	26.78 (3.50)
Role model subscale (range 1–5)	4.45 (0.65)
Rapport subscale (range 1–5)	4.46 (0.66)
Honesty subscale (range 1–5)	4.56 (0.61)
Motivation and encouragement subscale (range 1–5)	4.50 (0.55)
Nonjudgmental acceptance subscale (range 1–5)	4.46 (0.62)
Linkage to resources subscale (range 1–5)	4.36 (0.70)

4. Discussion

Very little prior research has examined PRSS-participant relationship quality as a function of both individual-level variables and perceived similarities between participants and their peers. As PRSS services proliferate in diverse settings including jails, prisons, hospitals, SUD treatment centers, harm reduction organizations, and RCCs (Chapman et al., 2018; Eddie et al., 2019; Stack et al., 2022), research is urgently needed to examine relational dynamics between PRSS and participants. Although shared lived experience has emerged in qualitative research as a key component of the PRSS-participant relationship (Gillard et al., 2014) and is consistently included in PRSS core competencies (SAMHSA, 2015), research has not yet quantitatively examined which elements of shared experience (e.g., substances of choice, history of incarceration) and/or identity (e.g., race, gender) are most critical for good-quality working relationships.

Using the SPARC relational scale as the dependent variable of interest to measure PRSS-participant relationship quality, we first examined whether SPARC scores varied by individual-level participant variables. There were no significant differences observed by participant sociodemographics, prior substance use patterns, or history of CLS involvement. Although this was a relatively small convenience sample of participants, there is a dearth of studies examining differences in outcomes from PRSS services based on participant characteristics. One study examining a women's PRSS program found that PRSS took a more proactive and hands-on approach with Black participants, who were retained longer in the program than White participants (Yakovlyeva et al., 2023). Another study found that self-help group participation – also based on shared lived experience – had a stronger impact on SUD treatment completion for Black men compared to White men, as well as Black or Latina women compared to White women (Stenersen et al., 2022). Thus, it is possible that some groups may differentially benefit from PRSS services, or that PRSS in certain contexts may provide differential services to certain participants, but this warrants additional research.

Despite the present study's lack of differences in relationship quality by individual-level factors, several associations were observed based on perceived PRSS-participant similarities. Participants reported better-quality relationships with PRSS if they believed they and their PRSS were similar in age, relationships with family, spirituality/religion, and overall recovery pathway. Both age and family relationships may be indicative of commonalities in current life stage, which may be salient for developing rapport, trust, and mutual understanding. Indeed, several studies support employing age-appropriate peers to work with emerging adults for SUD and mental health (Lum et al., 2023; Nash et al., 2015; Paquette et al., 2019; Simmons et al., 2023). Similarly, family relationships are often an ongoing and integral part of recovery (EnglandKennedy and Horton, 2011; Pettersen et al., 2019; Vigdal et al., 2022). Some service models may even have PRSS working directly with family members to facilitate understanding, support, and boundary-setting on participants' behalf (Heiden-Rootes et al., 2023). Thus, participants who perceive their PRSS to be similar in age and family relationships may have an easier time identifying with their PRSS as a role model or believe their encouragement and acceptance to be more authentic.

Likewise, the fact that congruence in spirituality/religion and overall recovery pathway were associated with better-quality relationships

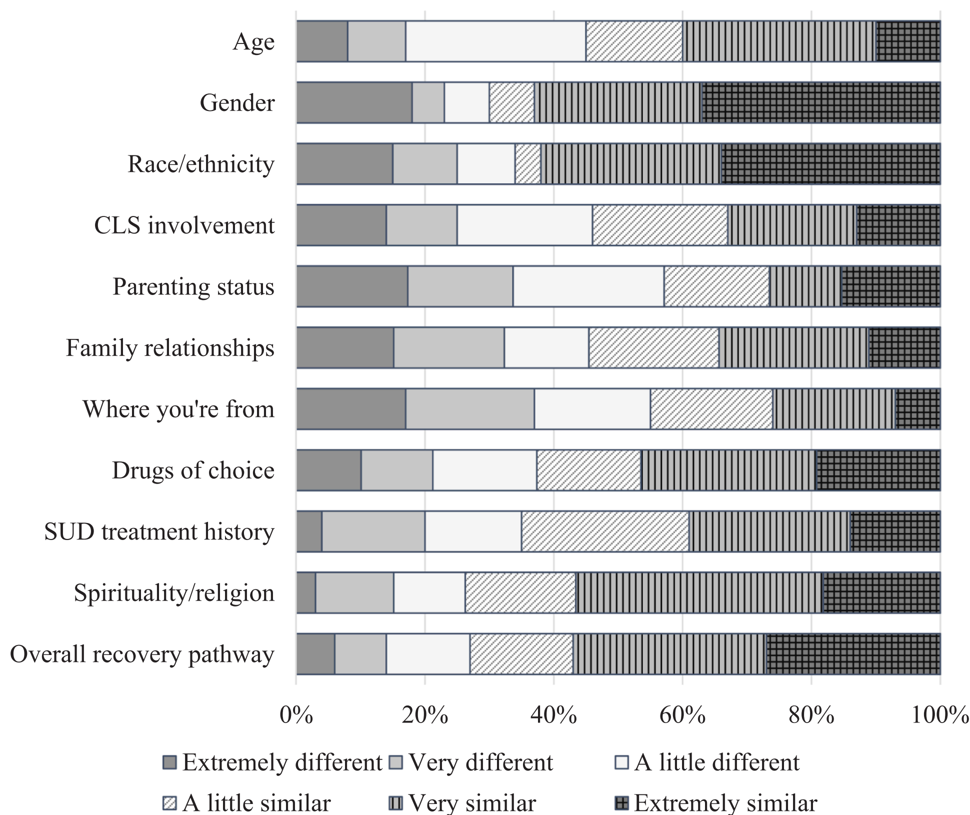

Fig. 1. Participants' perceived similarities to PRSS (N=100).

Table 3
Correlations between PRSS-participant domain similarities and SPARC total and subscale scores (N=100).

Similarity Domains	*Role Model*	*Rapport*	*Honesty*	*Motivation & Encouragement*	*Nonjudgmental Acceptance*	*Linkage to Resources*	Total Relational Subscales
Age	0.374***	0.346***	0.251*	0.368***	0.333***	0.320***	0.360***
Gender identity	0.028	0.064	−0.011	0.033	−0.023	0.041	0.025
Race/ethnicity	0.056	0.135	0.092	0.107	0.102	0.110	0.109
Criminal legal system involvement	0.178	0.208*	0.116	0.157	0.137	0.155	0.172
Parenting status	0.190	0.178	0.158	0.166	0.228*	0.169	0.197
Relationships with family	0.281**	0.273**	0.212*	0.263**	0.283**	0.271**	0.287**
Where you're from or where you grew up	0.136	0.112	0.025	0.065	0.165	0.234*	0.137
Drug(s) of choice	0.036	−0.054	−0.012	−0.119	−0.002	0.022	−0.020
Substance use treatment history	0.107	0.034	0.000	0.007	0.053	0.129	0.063
Spirituality or religion	0.301**	0.261**	0.232*	0.226*	0.322***	0.391***	0.317***
Overall recovery pathway	0.424***	0.399***	0.350***	0.405***	0.516***	0.394***	0.449***

*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

suggests that participants may value PRSS who have found similar services, groups, and processes beneficial. Participants who prefer the same types of recovery support meetings as their PRSS (e.g., 12-step fellowships, SMART recovery) could attend meetings with their PRSS and more easily get connected to sponsors, mentors, or friends in recovery. Furthermore, some pathways – particularly non-abstinence-based or use of MOUD – may be stigmatized in certain recovery spaces (Andraka-Christou et al., 2022). PRSS who have chosen these stigmatized pathways themselves may be able to advocate for participants and help mitigate participants' internalized feelings of stigma (Anvari et al., 2022). However, PRSS – even those with personal experience receiving MOUD – may still perpetuate stigmatizing beliefs about use of these medications (Pasman et al., 2023), indicating that robust training is critical.

It is notable that PRSS-participant relationship quality generally did not differ based on perceived congruence for prior experiences (e.g., substance of choice, CLS involvement) or most demographic characteristics (race/ethnicity, gender), although a few significant correlations with specific SPARC subscales may warrant further investigation (e.g., *rapport* and congruence with prior CLS involvement; *nonjudgmental acceptance* and congruence on parenting status). Some aspects of shared experience may be more relevant depending on PRSS context. For example, PRSS experience of having received MOUD may be more important if PRSS are working in a MOUD clinic; prior incarceration may be helpful for PRSS working in carceral settings. Similarly, shared race/ethnicity may be more important to racial/ethnic minority individuals, or shared gender may be more valuable to women. Indeed, one study of PRSS in a women's treatment center found that prior experiences of interpersonal trauma, relational struggles, and child protective service system involvement helped PRSS to connect with clients

(Mendoza et al., 2016). Although the current pilot study sample was underpowered to examine possible interactions, future research should explore differences in preferences for PRSS-participant congruence among intersectionally marginalized groups.

Lastly, PRSS-participant relationship quality did not differ based on number of sessions or duration of PRSS-participant relationship, suggesting that more time spent working with a PRSS may not systematically result in a better-quality relationship. It is possible that valuable PRSS relational qualities – nonjudgmental attitude, authenticity, and honesty – may be easily identifiable, such that participants may feel connected to their PRSS after a single session (or, alternatively, not connected after many sessions). However, prior research has shown that greater PRSS program engagement is associated with significant participant improvements in stigma, self-efficacy, empowerment, and recovery capital (Ashford et al., 2019; Vayshenker et al., 2016). Future research should examine whether lower program engagement results from poor-quality PRSS-participant relationships, translating to poorer outcomes.

A significant difference was also observed based on PRSS service setting, with lower relational scores reported by participants working with PRSS in recovery residences compared to the RCC. A core component of PRSS services is voluntariness (SAMHSA, 2015). However, for PRSS working in treatment contexts (e.g., recovery residences, inpatient programs, MOUD clinics) or settings in which there may be a power imbalance (e.g., jails, prisons, specialty courts), there may be a perceived or explicit obligation for participants to meet with a PRSS, compromising voluntariness of services. Participants may also have diminished trust in PRSS if honest disclosure (e.g., of returns to use, urges, or other behaviors) could impact receipt of services. Particularly for critical resources such as housing or medications, this may create a power dynamic between PRSS and participants that compromises the ability for high-quality relationships to be formed. Future research should examine PRSS-participant dynamics across a variety of program contexts to determine whether some aspects of relational quality (e.g., honesty, nonjudgmental acceptance) are more valuable in some contexts than others.

This study is subject to limitations. First, all data are self-reported and subject to social desirability due to being interviewer-administered. Second, the modified version of the SPARC scales used in the present study have not yet been validated, so findings should be interpreted with caution. However, no other scales exist to measure the relational dynamics between PRSS and participants, so this study is nonetheless an important contribution. Third, the study recruited a convenience sample of participants, which may have biased results; future research should build on these findings using probability samples of PRSS service recipients, as well as by more purposefully sampling from a variety of venues to examine how PRSS-participant relational dynamics may differ by setting. Additionally, although participants were not asked if they were actively enrolled in PRSS services, all had met with a PRSS within the past three months, which may have positively skewed ratings of PRSS-participant relationships. Lastly, the small sample size of the study may have limited statistical power to be able to detect subgroup differences (e.g., if gender congruence matters for women, but not men) and to perform more advanced analyses to assess performance of the revised SPARC scales (e.g., factor analysis).

Despite these limitations, this study has made an important contribution by quantitatively examining PRSS-participant relationship quality as a function of participants' perceived similarities to their PRSS across a variety of domains. Findings suggest that PRSS-participant congruence in current life stage (e.g., age) and recovery pathway (including spirituality) may generally be important for good-quality working relationships, whereas prior lived experiences and other demographics may be less important. However, future research should examine how findings may vary by context where participants are receiving PRSS services, as well as whether congruence matters more for participants of minoritized and/or more heavily stigmatized populations.

Role of Funding Source

This research is supported by a pilot study under the Initiative for Justice and Emerging Adult Populations (JEAP), funded by the National Institute on Drug Abuse, National Institutes of Health. We gratefully acknowledge the collaborative contributions of NIDA and support from grant award R24DA051950. Dr. Tillson also receives support under the JCOIN cooperative (grant award UG1DA050069). The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of NIDA, the NIH HEAL Initiative, or the authors' home institutions.

CRediT authorship contribution statement

Martha Tillson: Conceptualization, Funding acquisition, Investigation, Writing – original draft. **Alexander H. Lewis:** Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

There are no declarations of competing interests.

Acknowledgements

The authors gratefully acknowledge the study participants for sharing their experiences and Voices of Hope (Lexington, KY) for supporting our outreach and recruitment efforts. We also acknowledge the Survivors Union of the Bluegrass (SUB), which is funded by the University of Kentucky Substance Use Priority Research Area, National Center for Advancing Translational Sciences (grant number UL1TR001998), and Voices of Hope. We appreciate the SUB members' willingness to share their perspectives on this research and our findings.

Appendix: modified Scales for Participant Alliance with Recovery Coach (SPARC)

Modified scale items, in randomized order

The next set of statements will refer to your experience and relationship with your peer, the program where your peer works, and positive outcomes you may have experienced since you began receiving services. Please let me know how much you agree or disagree with each statement.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1. My recovery coach has helped me to feel less ashamed about my past.					

(*continued on next page*)

(*continued*)

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
2. My recovery coach is supportive of my individual pathway of recovery (for example, medication, 12-step, faith-based).					
3. My recovery coach motivates me to live a healthy lifestyle.					
4. I feel more hopeful about my recovery because of my recovery coach's lived experience.					
5. My recovery coach has helped me identify patterns of behaviors I would like to change.					
6. My recovery coach clearly defines expectations when referring me to community resources.					
7. My recovery coach treats me like an equal.					
8. If I had a slip, return to use, or escalation of use, I would want to talk to my recovery coach about it.					
9. [PROGRAM NAME] is in a convenient location for me.					
10. I am inspired by my recovery coach.					
11. My recovery coach connects me with other people in the local recovery community.					
12. If I was not making progress towards the goals I set, my recovery coach would provide honest feedback.					
13. My recovery coach respects my opinions.					
14. I look up to my recovery coach.					
15. I am taking steps toward achieving my recovery goals.					
16. I trust my recovery coach.					
17. My recovery coach links me to resources in a timely manner.					
18. I do not feel judged by any of the staff at [PROGRAM NAME] that I have interacted with, including front desk staff, receptionists, and/or leadership.					
19. My recovery coach models what it means to be an active member of the recovery community.					
20. I can relate to my recovery coach because of our shared life experiences.					
21. My recovery coach is knowledgeable about local community resources.					
22. My recovery coach helps me set goals that matter to me.					
23. Even if I did something that I was not proud of, my recovery coach would still respect me.					
24. My recovery coach believes in my ability to meet my recovery goals.					
25. I feel like my recovery coach recognizes the progress I make in achieving my recovery goals					
26. I can depend on my recovery coach to give me their honest opinions.					
27. I feel like my recovery coach listens to me.					
28. My recovery coach is focused on my potential for change instead of my past.					
29. Recovery coaching sessions at [PROGRAM NAME] are convenient for my schedule.					
30. My recovery coach offers his/her/their own life as an example of healthy living.					
31. I feel less alone because of my recovery coach's lived experience.					
32. I have learned potential solutions for barriers and challenges that I face.					
33. The recovery coaching program at [PROGRAM NAME] is well organized.					
34. My recovery coach would tell me the truth, no matter what.					
35. I have taken steps to reduce my risk, either by stopping or reducing my substance use or using in a safer manner.					
36. I get as much personal coaching at [PROGRAM NAME] as I need.					
37. My recovery coach is direct and does not "sugar coat" things.					
38. My recovery coach views my situation realistically.					
39. The staff at [PROGRAM NAME] are efficient at doing their job.					
40. Working with my recovery coach makes me feel more confident about accessing health services.					
41. My recovery coach links me with available resources in the community.					
42. My recovery coach is not judgmental towards me, no matter what.					
43. My recovery coach is easy to talk to.					
44. When I tell my recovery coach about my successes, they celebrate with me.					

Record of adaptations from original SPARC scale

Items from the original SPARC scale not listed in the table below were not retained in this revised version.

#	ITEM	New, adapted, or retained (former #)	Former subscale, if reorganized
	Convenience/logistics of recovery coach services		*New subscale
1	Recovery coaching sessions at [PROGRAM NAME] are convenient for *my schedule*.	*Adapted* (33) – formerly “convenient FOR ME.” Revised to more specifically capture what "convenience" entailed.	*Satisfaction*
2	*[PROGRAM NAME] is in a convenient location for me.*	NEW	N/A
3	The staff at [PROGRAM NAME] are efficient at doing their job.	Retained (35)	*Satisfaction*
4	*I do not feel judged by any of the staff at [PROGRAM NAME] that I have interacted with, including front desk staff, receptionists, and/or leadership.*	NEW	N/A
5	The recovery coaching program at [PROGRAM NAME] is well organized.	Retained (36)	*Satisfaction*
6	I get as much personal coaching at [PROGRAM NAME] as I need.	Retained (11)	*Satisfaction*
	Positive recovery-related outcomes from coaching		*New subscale
7	I have taken steps to reduce my risk, either by stopping or reducing my substance use or using in a safer manner.	Retained (2)	*Engagement*
8	I have learned potential solutions for barriers and challenges that I face.	Retained (3)	*Engagement*
9	I am taking steps toward achieving my recovery goals.	Retained (6)	*Engagement*
10	*My recovery coach has helped me identify patterns of behaviors I would like to change.*	*Adapted* (9) – formerly “my recovery coach’s *lived experience* has helped me identify…” Reframed as some participants found it unclear how "lived experience" could help them identify patterns etc.	*Role model*
11	*I feel less alone because of my recovery coach’s lived experience.*	*Adapted* (19) – formerly “my recovery coach’s lived experience has helped me to feel less alone.” Reframed to focus on the outcome (feeling less alone).	*Role model*
12	*I feel more hopeful about my recovery because of my recovery coach’s lived experience.*	*Adapted* (13) – formerly “my recovery coach’s lived experience instills hope.” Reframed to focus on the outcome (feeling more hopeful).	*Role model*
13	*My recovery coach has helped me to feel less ashamed about my past.*	*Adapted* (55) – formerly “my recovery coach makes me feel ashamed. [R]” Reverse-coded items performed poorly in the original scale.	*Rapport*
14	*Working with my recovery coach makes me feel more confident about accessing health services.*	NEW	N/A
	Participant-coach relationship: ROLE MODEL		
15	I can relate to my recovery coach because of our shared life experiences.	Retained (17)	Same
16	I am inspired by my recovery coach.	Retained (59)	*Motivation and encouragement*
17	My recovery coach models what it means to be an active member of the recovery community.	Retained (54)	Same
18	My recovery coach offers his/her/their own life as an example of healthy living.	Retained (32)	Same
19	*I look up to my recovery coach.*	NEW	N/A
	Participant-coach relationship: RAPPORT		
20	My recovery coach is easy to talk to.	Retained (14)	Same
21	I feel like my recovery coach listens to me.	Retained (16)	Same
22	My recovery coach treats me like an equal.	Retained (34)	Same
23	I trust my recovery coach.	Retained (39)	Same
24	My recovery coach respects my opinions.	Retained (42)	Same
	Participant-coach relationship: HONESTY		*New subscale
25	My recovery coach is direct and does not “sugar coat” things.	Retained (27)	*Rapport*
26	My recovery coach views my situation realistically.	Retained (30)	*Rapport*
27	*I can depend on my recovery coach to give me their honest opinions.*	NEW	N/A
28	*If I was not making progress towards the goals I set, my recovery coach would provide honest feedback.*	NEW	N/A
29	*My recovery coach would tell me the truth, no matter what.*	NEW	N/A
	Participant-coach relationship: MOTIVATION/ ENCOURAGEMENT		
30	I feel like my recovery coach recognizes the progress I make in achieving my recovery goals	Retained (18)	*Rapport*
31	My recovery coach believes in my ability to meet my recovery goals.	Retained (48)	Same
32	My recovery coach motivates me to live a healthy lifestyle.	Retained (37)	Same
33	*My recovery coach helps me set goals that matter to me.*	NEW	N/A
34	*When I tell my recovery coach about my successes, they celebrate with me.*	NEW	N/A
	Participant-coach relationship: NONJUDGMENTAL ACCEPTANCE		*New subscale
35	My recovery coach is focused on my potential for change instead of my past.	Retained (12)	*Motivation and encouragement*
36	My recovery coach is supportive of my individual pathway of recovery (for example, medication, 12-step, faith-based).	Retained (22)	*Satisfaction*

(*continued on next page*)

(*continued*)

#	*ITEM*	*New, adapted, or retained (former #)*	*Former subscale, if reorganized*
37	*If I had a slip, return to use, or escalation of use, I would want to talk to my recovery coach about it.*	NEW	N/A
38	*My recovery coach is not judgmental towards me, no matter what.*	NEW	N/A
39	*Even if I did something that I was not proud of, my recovery coach would still respect me.*	NEW	N/A
	Participant-coach relationship: LINKAGES		
40	My recovery coach links me to resources in a timely manner.	Retained (7)	Same
41	My recovery coach clearly defines expectations when referring me to community resources.	Retained (21)	Same
42	My recovery coach is *knowledgeable about* local community resources.	*Adapted* (44) – formerly "my recovery coach *would accompany me to* local community resources." Respondents had noted that PRSS may not be expected or allowed to accompany participants, but that knowledge of resources was critical.	Same
43	My recovery coach links me with available resources in the community.	Retained (50)	Same
44	My recovery coach connects me with other people in the local recovery community.	Retained (57)	Same

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