



A feasibility study exploring self-care and parenting for adults recovering from addictive substances

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ABSTRACT

Little information is available on parental self-care while in recovery from addictive substances, and its relationship to parenting and recovery outcomes. We evaluated the feasibility of obtaining self-care and parenting outcomes for adults in long-term recovery from addictive substances, and explored potential contributing factors. Nineteen mothers and fathers who self-reported at least two years of sobriety participated in this study. Feasibility challenges included recruitment and scheduling interviews, given multiple work and personal demands on participants' schedules. Possible associations of self-care to parental efficacy (PE), parenting behaviors, resilience, and total recovery years were examined as indicators to parental functioning. The exploratory analyses showed a significant moderate correlation between PE and parenting behaviors ($r = 0.45, p < 0.05$) as well as total years in recovery and age ($r = 0.43, p < 0.05$); total years in recovery differed significantly when compared by race ($\chi^2(1) = 5.63; p = 0.018$) and education ($\chi^2(1) = 3.94; p = 0.048$). There was also a significant inverse relationship between total years in recovery and PE ($r = -0.43, p < 0.05$) and parental self-care ($r = -0.59, p < 0.01$). Recruiting parents (especially minorities) in long-term recovery was very challenging indicating that recruitment through community organizations was not feasible without a site champion. Preliminary findings showed statistically significant correlations among self-care, parental efficacy, age, and total years in recovery. As researchers and clinicians, it is necessary to determine the role and impact of self-care for future intervention development, however, recruitment strategies need to be modified to ensure sufficiently large study samples.

Introduction

Parenting challenges, coupled with low parental efficacy (PE) and ineffective coping, may increase vulnerability to drug use for parents in recovery from addictive substances (Raynor, 2013). For parents in recovery, vulnerability stems from inadequate attempts to deal with personal and environmental stressors linked to genetic predisposition to addiction, poor coping, unhealthy social networks, and early onset depression (Lebowitz & Appelbaum, 2017; Skinner, Haggerty, Fleming, et al., 2011). Stress modifiers such as self-care behaviors have been identified as an essential element in recovery for people with substance use disorders (SUD) (Luciano et al., 2014; Melemis, 2015). Parental self-care behaviors include those personal health behaviors that build a parent's self-esteem and sense of physical, social, spiritual, and emotional well-being (Sanders, 2008).

One can infer that parents who practice consistent self-care behaviors while in recovery from SUD demonstrate more positive parenting characteristics (Muzik, Rosenblum, Alfafara, Schuster, et al., 2015); however, the relationship of parental self-care to parenting and recovery outcomes has been largely under investigated. The purpose of this study was to explore the feasibility of recruiting mothers and fathers in long-term recovery from SUD, and to collect self-care, parenting, and recovery data from participants. The secondary purpose

was to explore possible relationships between parental self-care and parental efficacy (PE), parenting behaviors, resilience, and total years in recovery as indicators of parental functioning. The information obtained in this study contributes to a broader understanding of challenges in recruitment of this population and parental self-care behaviors (SCB) and how they may relate to recovery and parenting outcomes. Knowledge gained in this feasibility study will add to the current evidence on recovery supports for parents within communities along with identification of best strategies for recruitment of this population. In addition, a greater understanding of parental self-care is useful to clinicians and researchers who seek to tailor evidence-based interventions to improve health outcomes for mothers and fathers in early recovery, who are parenting children.

Background and significance

Bornstein (2013) defined parenting as the role and duties of caring for one's children in preparing them to manage life effectively. Parental efficacy is a parent's beliefs about their ability to perform the tasks necessary to parent their child effectively (de Montigny & Lacharité, 2005). Considerable evidence links family-focused programs to positive health outcomes for the entire family, including support to parents with SUD as well as children (Renk et al., 2016). However, with many

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family-focused programs, the role of self-care and its relationship to parenting outcomes in recovery are not clearly understood, especially once fathers and mothers function independently in their home environment without program resources.

According to the working definition provided by the Substance Abuse and Mental Health Services Administration (SAMHSA) (2009, 2012), recovery from substance use disorders (SUD) is a self-directed process of change to improve overall health in four major recovery dimensions: health, home, purpose, and community (2012). Parents attempting to recover from SUD are thought to have additional sources of stress that complicate access to and retention in drug treatment programs (Niccols et al., 2012) including parenting stress, legal issues, custody and domestic disputes, and other environmental and financial challenges (Neger & Prinz, 2015; Skinner et al., 2011). Thus, it is essential to explore other intrapersonal factors (e.g. self-care) that may promote positive parenting and long-term recovery. Understanding more about the role and relationship of parental self-care to parenting and recovery outcomes is a needed area of ongoing research (Raynor & Pope, 2016).

Operational frameworks, contexts, and definitions

Bandura's Social Cognitive Theory of Substance Abuse (STSA) emphasizes intentional physical, cognitive, emotional, and behavioral strategies employed by individuals with SUD over time that influence recovery and other positive health outcomes (Bandura, 1999). The conceptualization of self-regulation is the implementation of these health-promoting strategies designed to resist the urge to use the substance when triggered by internal and/or external factors (Bandura, 1999). Human agency conceptualizes how individuals are both producers of thought patterns that influence their motivation, desires, and behaviors, and products of their life situations that are influenced by intrapersonal and environmental factors (Bandura, 1999). We reframed this model for application to parents who recover from addictive substances. Three parental outcomes of successful recovery from SUD include: (1) Self-regulatory agency which encompasses cognitive, emotional and behavioral SCB that promote long-term recovery from SUD; (2) Perceived Efficacy, which conceptualizes a personal belief in one's ability to quit misusing substances while parenting effectively, and (3) Collective self-efficacy which conceptualizes shared belief in the ability to improve life circumstances through common efforts and community supports (Bandura, 1999).

For the purposes of this study, the term "parents in recovery from SUD" describes mothers or fathers who self-report being in recovery for at least 2 years from licit and/or illicit addictive drugs, which includes alcohol, heroin, stimulants, marijuana, prescription opioids, sedatives, cocaine, cannabis, and hallucinogens. Because Bandura's theory closely aligns with the current study, it was used to frame an interpretation of self-care behaviors. Parental self-care behaviors are physical, emotional, cognitive, and behavioral practices employed by parents in recovery from SUD to maintain their personal health, well-being, and parental functioning in response to internal and external stressors (Bandura, 1999). Generally recognized self-care behaviors to promote healthy functioning include exercise, healthy eating, stress management, smoking cessation, limited alcohol use, and adequate sleep and rest (Ryan, 2009).

Methods

This feasibility study utilized a mixed-methods design that began with the assumption that the combination of qualitative and quantitative data from participants would provide a richer understanding of parental self-care and its perceived benefits for parents in recovery from SUD (Creswell, Klassen, Clark, & Smith, 2011). The qualitative findings were reported previously (Raynor, Pope, York, Smith, & Mueller, 2017). The quantitative arm of the study was useful in determining overall

feasibility of recruitment and data gathering, and measuring patterns of associations of self-care to parenting outcomes. Both, qualitative and quantitative data were collected to obtain a comprehensive representation of SCB for future self-care intervention mapping. This study reports overall feasibility outcomes and the findings from the exploratory quantitative analysis.

Participants and procedures

The purpose of this study was to demonstrate feasibility of recruiting mothers and fathers in long-term recovery from SUD, and to collect self-care, parenting, and recovery data from participants. Therefore, the recruitment goal for this feasibility study (N = 30) was determined to reflect a sufficiently large number of participants to test recruitment strategies over a period of 12 weeks. In addition, this sample size is consistent with Billingham, Whitehead, and Julious's (2013) and Hertzog's (2008) sample size considerations for correlations in pilot studies.

Participants were recruited after the study was approved by a southeastern university internal review board (IRB). IRB-approved recruitment flyers were sent electronically to 14 community-based organizations with possible connections to parents in long-term recovery in the southeastern state. These community organizations were primarily mutual support group organizations and short-term treatment facilities for individuals and families in recovery from alcohol and drug addiction. Also, participant recruitment was attempted through a state registry of individuals who completed mental health peer support, churches, and other faith-based recovery support groups in the southeastern state. The leaders of these community organizations were contacted directly through email and/or by phone to discuss the purpose of the study and to request that they distribute the flyer through their networks. In order to maximize minority population recruitment, we targeted and contacted three large predominantly African-American churches in the state for recruitment. Churches were asked to distribute the flyer electronically and/or post within their congregations where interested members could contact the researchers directly.

Additionally, snowball sampling methods were used to recruit participants. Snowball sampling methods have been used widely in social science research where people who share similar experiences (Biernacki & Waldorf, 1981) make referrals. In this case, all individuals who contacted the researcher regarding the study were asked to share study information with acquaintances in similar situations, and to refer those persons to the researcher for interest in participating in the study. This sampling method was well suited for this study due to the sensitive nature of the topics discussed and the social stigma (Luoma et al., 2007) that results from having a known SUD. Individuals with a history of SUD who are socially stigmatized have experienced direct discrimination through access to employment, housing, and treatment support and, thus, may be less likely to disclose their personal history of SUD to persons unknown (Luoma et al., 2007). Thus, recruitment required the assistance of insiders to locate people who met inclusion criteria for the study who could choose whether to follow-up and participate.

Overall consent process

The researchers explained the purpose of the study to the leader or designated representative of the preselected community groups. Once the community group leader agreed to distribute a flyer within their respective networks, they received the IRB-approved flyer with instructions on eligibility criteria and voluntary participation to distribute electronically to community members or post in a designated area within the agency. Interested individuals were advised how to contact the principal investigator (PI) by phone or email regarding participation in the study. After the interested individual contacted the PI, the participants received detailed information regarding the study. Verbal consent prior to participation was obtained from each participant. The

researcher then scheduled a time most convenient for the participant to complete the interview and survey instruments. As part of the consent process, participants received information about compensation for inconvenience and time spent completing the study; participants received a gift card of \$25 dollars after completion of the survey portion and after completion of the qualitative interview portion of the study. Thus, total possible compensation was \$50 for each participant.

Inclusion/exclusion criteria

Participants had to be at least 18 years old and have at least one child between the ages of 6–18 years. The criteria for the child's age was selected based on the results from a prior integrative review on SCB that underscored the lack of existing research on SCB of parents with elementary or adolescent-aged children (Raynor & Pope, 2016). To be eligible, participants needed to self-report at least two full years in recovery from illicit or licit substances and have a minimum of joint legal custody of their child. The researchers defined “long-term recovery” as a self-report of > 2 years in recovery and parenting in their natural home environment for two years because of increased risks for return to drug use in the first one to two years following treatment modalities (Laudet, Savage, & Mahmood, 2002). Incarcerated parents and parents with children not residing in their home at least part-time were excluded from the study.

Analytic approach, instruments, and data collection

This study investigated the feasibility of recruitment and data collection in this population and explored whether there were preliminary indications for relationships of a self-care measure with the primary outcome measure parental efficacy (PE) and secondary outcome measures parenting behaviors, resilience, and length of time in recovery as indicators of parental functioning. The researchers explored feasibility outcomes through examining recruitment and retention, acceptability, implementation, and practicality considerations. Participants self-reported all data collected. Demographic data were collected on the parent and the child through the parent demographics form that included questions about age, gender, race, education, income, employment status, relationship status, length of time in recovery, drug used, number and age of children, and parental custody status, past and present. Parent data were also collected through questionnaires on self-care, PE, resilience, and parenting behaviors.

Survey instruments

Self-care behaviors were operationalized as total scores on the Self-Rated Abilities for Health Practices Scale (SAHP) (Becker, Stuijbergen, Soo, & Hall, 1993). The SAHP is a 28-item, 5-point scale to measure one's perceived ability to consistently engage in health-promoting behaviors. The SAHP contains four subscales of Exercise, Nutrition, Responsible Health Practice, and Psychological Well-Being (Becker et al., 1993). Each subscale contains seven items, and items are rated from 0 (not at all) to 4 (completely). Subscale ratings are summed to yield subscale scores and a total score when all subscale scores are summed together. Total scores range from 0 to 112 with higher scores indicating greater self-efficacy for health practices (Becker et al., 1993). The SAHP measure has been used with the general population, college students, and individuals with disabilities and has reported validity and reliability for all mentioned groups (Becker et al., 1993). Specifically, within the study with adults who have disabling conditions, Cronbach's alpha was reported as 0.91, 0.76, 0.86, and 0.77 respectively for total scores of the Nutrition, Exercise, Psychological Well-being, and Responsible Health Practices subscales (St. David's Center for Health Promotion and Disease Prevention in Underserved Populations, 2013).

Parental efficacy (PE) was measured by obtaining the total score from the parental efficacy subscale of the Parenting Sense of

Competence Scale (PSOC) (Gilmore & Cuskelly, 2008). The PSOC measures parental competence looking at two dimensions of parenting: parental satisfaction and parental efficacy. It is a 17-item measure with nine parenting satisfaction items and eight parental efficacy items. Items are measured on a 6-point scale ranging from 1 (strongly agree) to 6 (disagree). Eight items (1, 6, 7, 10, 11, 13, 15, 17) are reverse scored so that higher scores indicate positive parental efficacy. Parental efficacy items look at the parents' perceived ability for effective parenting and problem solving within their parental role (Johnston & Mash, 1989). The researchers asked participants to only respond to the eight items on the PSOC pertaining to parental efficacy. Johnston and Mash (1989) have reported internal consistencies of 0.76 for the Efficacy scale, and Lovejoy, Verda, and Hays (1997) have reported internal consistencies of 0.88 for the Efficacy scale in two different samples of mothers with preschool children.

To assess various parenting domains, parental behaviors were collected through total scores on the abbreviated version of the Alabama Parenting Questionnaire (APQ) (Elgar, Waschbusch, Dadds, & Sigvaldason, 2007; Shelton, Frick, & Wootton, 1996). This 9-item scale has three subscales that measure positive parenting styles, poor monitoring/supervision, and inconsistent discipline. All items were added to obtain a total score (Elgar et al., 2007). The short scale has been validated in an independent community sample using confirmatory factor analysis (Elgar et al., 2007). The scale showed good fit to a three-factor model and good convergent validity by differentiating parents of children with disruptive behavioral disorders versus parents of children without disruptive behavioral disorders (Elgar et al., 2007).

Lastly, resilience was explored through total parent scores on the abbreviated 2-item Connor Davidson Resilience Scale (The CD-RISC 2). The CD-RISC2 is based on two items (score range from 0 to 8) of the original Connor Davidson Resilience Scale 25, and was developed as a measure of quick recovery and adaptability by the original authors (Vaishnavi, Connor, & Davidson, 2007). In a general U.S. population, mean CD-RISC 2 score was 6.91, and lower scores were observed in psychiatric groups with depression (5.12), GAD (4.96) and PTSD (4.70). In each of those populations, the 2-item scale showed good test-retest reliability, convergent validity, and divergent validity (Vaishnavi et al., 2007).

Time for completion for all survey instruments was anticipated as 20–30 min, however, actual duration of completion was to be explored in the study as part of feasibility.

Data analyses

Statistical Package for Social Science (SPSS v.24.0) was used for data analyses. Feasibility measures are reported as frequency distributions and percentages as appropriate. Descriptive statistics were calculated and differences in the participant's demographic data were explored that could have a moderating effect on parental self-care, PE, parenting behaviors, resilience, and/or recovery outcomes. Exploratory correlational analyses using Pearson correlation described the direction and magnitude (e.g. one-tailed significance at 0.05 level) of the relationship between continuous study variables (Polit, 2010). Total scores on the CD-RISC2 scale were treated as categorical instead of a continuous variable because of the narrow range of the total score for the 2-item questionnaire (e.g. 6–8). Total years in recovery, parenting behaviors (APQ), and parental self-care (SAHP) were explored by comparing differences in the total scores of the CD-RISC2 scale across categorical variables (e.g. gender, race, relationship status, number of children, education, employment, and income) using Mann-Whitney U for binary variables or Kruskal Wallis test for variables with 3 or more categories. In addition, differences in subscale total scores for the APQ and SAHP were examined. The purpose of this exploration was to identify potential relationships with recovery from SUD for further investigation in future adequately powered studies. Due to the small sample size (N = 19), the Mann Whitney U test and Spearman

correlation were used when two variables displayed non-normal distributions. Kruskal-Wallis H Test was used for comparison of more than two groups. For descriptive analyses, the mean, standard deviation, and range were reported.

Quantitative results

Feasibility

Eight out of 14 (57%) community organizations that were approached by the researchers agreed to distribute the recruitment flyer within their networks through posting the flyer onsite or sending the flyer electronically to their members. Recovery based community programs typically take added measures to ensure protection of privacy and anonymity of their members due to the stigmatizing nature of the disease. Thus, we were not able to determine a precise number of individuals who may have received the flyer through these distribution processes. However, we estimated that a minimum of 5000 persons within the state might have had access to the flyer based on the general number of known regular members across these organizations.

Reasons why community stakeholders did not distribute the flyer included: not having direct access to parents with at least 2 years in recovery ($n = 2$). Four community stakeholders did not respond to the principal investigator (PI) when approached by email or phone ($n = 3$) or requested additional information about the study, but did not provide consent to distribute the recruitment flyer within their network ($n = 1$).

Twenty-four total respondents contacted the researcher to indicate interest and willingness to participate in the study. Nineteen participants (79%) were eligible to participate based on inclusion and exclusion criteria. Five participants were ineligible because: (1) all children were younger than six years ($n = 2$) or older than 18 years of age ($n = 1$), or (2) parents self-reported less than two years of recovery from SUD ($n = 2$). Ten participants (53%) were referred by other participants through snowball sampling methods. The total length of time for recruitment and data collection was six months—from January 2015—June 2015.

All nineteen participants completed both the interview and survey component of the study. Most participants preferred to complete the surveys electronically. Completion of survey instruments online or by phone took about 20–30 min.

Barriers to face-to-face interviews included: (1) Distance—participants were recruited from all over the southeastern state; (2) time—the majority stated they preferred telephone interviews and completion of surveys electronically because of work schedules and time needed for children's care or various personal or professional activities. Subsequently, the principal investigator (PI) scheduled many early morning, late night (after 9 pm) and weekend appointments to accommodate these time challenges; (3) telephone interviews were perceived as being less inconvenient and less difficult to juggle.

Fifteen participants completed surveys online by clicking on a link sent by the PI (per participants' request). Three participants completed the survey portion by phone with the principal investigator (PI) (per participants' requests); and one participant completed the survey instruments by paper at a state recovery conference (per participant request).

Demographic characteristics of participants

As shown in Table 1, the majority of participants were fathers who accounted for 57.9% ($n = 11$) of the total sample. The parents were 29–60 years of age, primarily White (73.7%), married (57.9%), college-educated (65%) and employed for wages (57.9%). The majority of participants reported an annual income of less than \$75,000 (63.2%). Approximately a third of participants reported length of time in recovery as > 10 years (36.8%) and the majority of participants indicated

Table 1
Sample characteristics of parents in recovery from SUD ($n = 19$).

Variables	Mean	St. deviation
Age in years (29–60)	45.2	9.4
Variables	Frequency	Percent
Gender		
Male	11	57.9
Female	8	42.1
Race		
White	14	73.7
Black	4	21.1
American Indian or Alaskan Native	1	5.3
Relationship status		
Married	11	57.9
Divorced	3	15.8
Widowed	1	5.3
Never married	2	10.5
A member of an unmarried couple	2	10.5
Education		
High school graduate or less	6	31.6
College 4 years or more	13	68.4
Employment		
Employed for wages	11	57.9
Self-employed	2	10.5
A homemaker	2	10.5
A student	2	10.5
Retired	1	5.3
Unable to work	1	5.3
Length of time in recovery		
2–5 years	7	36.9
6–10 years	5	26.3
11 years or more	7	36.8
Income		
Less than \$25,000	4	21.1
50,000 to > \$25,000	4	21.1
74,999 to > \$50,000	4	21.1
> \$75,000	7	36.8
Gender of children		
Boy	5	26.3
Girl	3	15.8
At least one boy and one girl	11	57.9
Age of children ^a		
0–5 years	5	26.3
6–11 years	11	57.9
12–17 years	10	52.6
> 18 years of age	8	42.1
Children in home ages 6–18		
One child	9	47.4
More than one child	10	52.7
Total no. of children in and out of home		
0–3 children	13	68.4
4 or more children	6	31.6
Who lives in the home ^a		
Spouse or significant other	14	73.7
Children	18	94.7
Grandparents	2	10.5
Other (adult son)	1	5.3
Lost custody of the children		
None—never lost custody	17	89.5
Lost custody of 3–5 children at least one time	2	10.5
Reason custody was lost		
Addiction and stigma of addiction	1	5.3
It was drug-related	1	5.3

^a For these questions, participants could check all answers that applied. Percentages do not equal 100%.

Table 2
Mean and standard deviation (SD) of total scores for outcome measures (n = 19).

	Mean (SD)	Minimum	Maximum
Age	45.2 (9.4)	29	60
Recovery years	9.6 (8.1)	2.0	31.0
PSOC	37.2 (4.7)	29.0	45.0
APQ	24.1 (3.6)	18.0	31.0
SAHP	91.8 (8.4)	79	107

Table 3
Pearson correlations (and one-tailed p-value) among continuous study variables.

	PSOC	APQ	SAHP	Age
Recovery years	-0.43 (0.033)*	0.12 (0.312)	-0.59 (0.004)**	0.43 (0.032)*
PSOC	1	0.45 (0.027)*	0.22 (0.182)	-0.10 (0.336)
APQ		1	-0.28 (0.127)	0.30 (0.110)
SAHP			1	-0.15 (0.28)

* Correlation is significant at the 0.05 level.
** Correlation is significant at the 0.01 level.

polydrug use disorder prior to entering into recovery (see Table 1—Sample Characteristics of Parents in Recovery from SUD).

Outcome measures

Table 2 summarizes the mean, standard deviation (SD), and range of total scores for parent outcome measures below.

Exploratory correlational analyses

Pearson correlations among continuous study variables were displayed in Table 3. There was a moderate correlation between total years in recovery from SUD and the age of the participants. Greater total years in recovery were positively correlated with participants who were older; the relationship was statistically significant ($r = 0.43, p < 0.05$). Total scores on parental efficacy (e.g. PSOC scale) were moderately correlated with parenting behaviors (e.g. APQ total scores). Higher scores on the PSOC were correlated with higher scores on the APQ; the relationship was statistically significant ($r = 0.45, p = 0.05$).

There were significant relationships among parental self-care behaviors (SAHP), total years in recovery, parental efficacy (PSOC), and age of participants. There was an inverse relationship between length of time in recovery and parental efficacy ($r = -0.43, p = 0.05$) and self-care ($r = -0.59, p = 0.01$). Scores on the self-care measure (SAHP scale) were highest for participants in early recovery and lowest among those in long-term recovery maintenance (e.g. > 10 years). Scores on the parental efficacy measure (e.g. PSOC scale) were also higher for participants in early recovery and lowest among those in long-term recovery maintenance. When exploring subscale total scores for the

Table 4
Alabama Parenting Questionnaire (APQ) and Self-rated Abilities for Health Practices Scale (SAHP) subscales compared across length of time in recovery categories.

Subscales	2–5 years	6–10 years	11 or more years	Chi square (df)	p-Value ^a
APQ. Positive parenting	11.4	9.0	9.3	0.77 (2)	0.682
APQ. Inconsistent discipline	8.6	11.6	10.2	0.85 (2)	0.655
APQ. Poor supervision	9.7	8.8	11.1	0.57 (2)	0.752
SAHP. Nutrition	14.4	7.6	7.3	7.16 (2)	0.028
SAHP. Psychological wellbeing	10.8	10.3	9.0	0.38 (2)	0.827
SAHP. Exercise	11.1	12.9	6.8	3.93 (2)	0.140
SAHP. Responsible health practices	11.6	13.3	6.0	6.16 (2)	0.046

^a Kruskal Wallis test.

SAHP by recovery categories (e.g. 2–5 years, 6–10 years, and 11 years or more), subscale scores were significantly higher in the subcategories of “Responsible health practices” and “Nutrition” for individuals in the early recovery category (e.g. 2–5 years) (Table 4). There were no statistically significant differences in APQ by recovery categories. No statistically significant difference in parenting behaviors (APQ) were observed when comparing mean scores across gender, race, relationship status, number of children, education, employment, or income categories.

Table 5 summarizes comparisons of mean ranks for total years in recovery and self-care total score by categories of demographic variables using non-parametric Kruskal-Wallis test. The test showed that there was a statistically significant difference in total years in recovery scores between race categories ($\chi^2(1) = 5.63, p = 0.018$), with a mean rank total year in recovery of 11.8 for White race and 4.9 for Non-white. In this sample, the non-White (e.g. Black and Native American combined) participants were earlier in their recovery than White participants. Total years in recovery also differed significantly when compared across educational levels ($\chi^2(1) = 3.94, p = 0.048$) where greater total years in recovery were observed with higher educational levels. Although not statistically significant ($\chi^2(1) = 3.24, p = 0.072$), total scores of SAHP were higher for participants with higher education levels (Table 4), indicating a possible relationship that warrants further investigation. For the 2-item Resilience scale (e.g. CD RISC2), the range of scores were from 6 to 8. Most participants (n = 14) indicated “often true” as opposed to “true nearly all the time” (n = 5) to the question “I am able to adapt when changes occur”. For the second item, the answers were essentially equal for the number of participants who reported “often true” (n = 9) as opposed to “true nearly all the time” (n = 10) to the question “I tend to bounce back after illness, illness, or other hardships”. Total scores for the majority of participants indicated higher levels of resilience. There were no statistically significant differences in parenting measures when comparing CD RISC2 (e.g. total resilience scores) across income, gender, employment, total number of children, and relationship status categories.

Discussion

The primary aim of this study was to determine feasibility of recruiting and enrolling participants through community-based programs, community stakeholder registries, churches, and snowball sampling methods; and the feasibility of gathering data on parental self-care, parental efficacy, parenting behaviors, resilience, and total years in recovery from adult parents recovering from SUD. Results of the study showed that the strategies employed in this study did not allow for recruitment of the targeted sample size; therefore, these methods were considered not feasible. There were more fathers than mothers recruited in this particular study, which is unusual. However, this study does provide additional insight into recovery of fathers, which is an understudied area of research. Further, although our sample may not be representative of the wider SUD population, recruitment for this study focused chiefly on the feasibility of methods to access this population. As anticipated, there was difficulty in recruiting this hard-to-reach

Table 5

Comparison of mean ranks for total years in recovery and self-care total score by categories of demographic variables using non-parametric Mann-Whitney U (for binary variables) or Kruskal-Wallis test (≥ 3 categories).

Variable	N	Total years in recovery			Self-care		
		Mean rank	Chi-square (df)	p-Value	Mean rank	Chi-square (df)	p-Value
Gender			1.45 (1)	0.23		2.74 (1)	0.10
Male	11	11.3			8.2		
Female	8	8.2			12.5		
Race			5.63 (1)	0.018		0.22 (1)	0.64
White	14	11.8			9.6		
Non-White	5	4.9			11.0		
Total children			1.63 (1)	0.20		0.07 (1)	0.79
3 or less	13	11.1			9.8		
4 or more	6	7.6			10.5		
Income			4.54 (3)	0.21		2.46 (3)	0.48
Less than \$25,000	4	7.3			6.5		
\$50,000 to > \$25,000	4	12.5			10.3		
\$74,999 to > \$50,000	4	6.4			12.6		
> \$75,000	7	12.2			10.4		
Relationship status			0.10 (1)	0.76		2.00 (1)	0.16
Married	13	10.3			11.2		
Not married	6	9.4			7.3		
Employment			0.18 (1)	0.67		0.01 (1)	0.93
Employed	12	10.4			10.1		
Not employed	7	9.3			9.9		
Education			3.94 (1)	0.05		3.24 (1)	0.072
High school or less	6	6.3			13.4		
College 4 years or more	13	11.7			8.4		
CD-RISC total scores			0.33 (2)	0.85		3.16 (2)	0.21
6.00	9	9.7			9.8		
7.00	5	11.2			7.0		
8.00	5	9.3			13.3		

df = degrees of freedom.

population generally, and particularly in recruiting minority parents in recovery from SUD. The modest recruitment rate over a six month period may be attributed to the long-standing recruitment and attrition challenges associated with SUD research (Festinger & Dugosh, 2012), not having a site champion within the community organizations to encourage research participation, or lack of recruitment initiatives directly through primary care and psychiatric providers who had access to parents in recovery.

Barriers to recruitment for under-represented minorities in SUD research have been identified in the literature as cultural mistrust; avoidance of the legal system, practicality issues involving travel, work schedules, and childcare availability; and the inconvenience and sometimes inflexibility of research procedures (Burlew et al., 2011). In this study, community acceptability of the study was low as there were 43% ($n = 6$) of community networks that either did not respond to the PI, were unwilling to distribute the flyer, or reportedly did not have access to parents in recovery for at least two years from SUD. Over six months, we recruited only 19 participants, with all preferring to complete the surveys online or by phone for greater convenience due to work schedules and time needed for childcare or various personal or professional activities. This response suggests poor feasibility if one wanted to conduct face-to-face interviews or follow participants over time. A promising approach appears to be recruitment of participants online through email or social media forums to post online flyers, and website advertisements. This approach would allow the researcher to collect data anonymously, thereby reducing stigma as well as time and scheduling burden for participants.

In addition, community engagement efforts should be focused on recruiting participants through primary care and mental health providers at local mental health centers, drug treatment centers, and other community psychiatric facilities for possible referrals. Four out of the five minority participants recruited for this study were referred to the PI from a mental health clinician who was interested in the study. This provider volunteered to explain the purpose of the study and provided

the PI's contact information if the provider's clients were interested. Because this provider was a trusted member of their health care team, these minority participants felt comfortable agreeing to participate in the study. Thus, recruitment initiatives directly through trusted community providers may be a better recruitment approach in future studies.

The one-time appointment to complete the study, the availability to complete questionnaires online, compensation for time and inconvenience of participating, as well as the short time between participant decisions to participate in the study to informed consent helped to sustain interest and improve retention. All participants remained until the end of the study. Overall, acceptability was high. Participants saw sharing their story as a positive way they could help other parents in recovery. There were no reported literacy challenges from using the standardized questionnaires and no missing or incomplete items. However, these participants reported obtaining higher education because of being in recovery, which may account for the absence of literacy challenges. Through snowball sampling methods, participants that were approached for recruitment purposed referred ten new participants to this study. These findings indicate that the only (though crucial) limiting part to feasibility for this study were the recruitment strategies employed; once potential participants had been identified and recruited, retention and acceptability were high.

Associations and trends

The secondary aim was to explore possible associations between a measure of parental self-care behaviors and other parenting outcome measures (parental efficacy, resilience, parenting behaviors, and total years in recovery). Total scores on the PSOC (e.g. parental efficacy) showed a statistically significant positive moderate correlation with APQ (e.g. positive parenting behaviors). As parental efficacy scores increased, so did total scores on positive parenting behaviors (APQ). These findings are consistent with existing literature on the relationship

between PE and positive parenting behaviors, as described in previous studies for comparison (Coleman & Karraker, 2000; Dumka, Gonzales, & Wheeler, 2010; Jones & Prinz, 2005; Kodl & Mermelstein, 2004; Raynor, 2013; Shumow & Lomax, 2002).

When comparing total scores on parental self-care behaviors (SAHP), total years in recovery, age, and total scores of parental efficacy (PSOC), significant inverse relationships existed. An unanticipated finding was that scores on the SAHP (parental self-care measure) were *higher* for participants who self-reported being in the early years of recovery and *lower* among those who reported being in more years of recovery. Although this was an unanticipated finding, higher parental efficacy may be largely connected to one's perceived confidence in his or her ability to abstain from substances as a means of coping (e.g. abstinence self-efficacy). All participants reported that abstaining from drugs was the number one priority in working towards being a good parent.

Consistent with Bandura's STSA, it was clearly evident from the participant responses that parents in longer-term recovery engaged in various self-care behaviors to promote positive recovery, although the preferred type of self-care and frequency varied by participants. According to Melemis' (2015) Stages of Recovery, the Repair stage occurs after one to two years of recovery and usually lasts 2–3 years. This stage can present more emotional and cognitive challenges as individuals are attempting to repair damage to their relationships, employment, finances, and self-esteem caused by SUD. Practicing self-care regularly and consistently, and making those behaviors an integral part of recovery is an important component during this time of transition (Melemis, 2015). In other words, more self-care behaviors may be needed for parents in early recovery in order to effectively deal with these life challenges without returning to drug use as a means of coping. In the late stage recovery cycle, life typically improves for individuals in recovery from SUD, and there is a lesser focus on maintaining self-care behaviors. Melemis (2015) states that during this late stage, individuals recovering from SUD assume more life responsibilities to make up for the time lost with their children. In a sense, they are trying to return to their old life patterns prior to drug use and they stop doing the healthy behaviors that contributed to their recovery thereby increasing vulnerability to return to drug use.

Another unexpected finding was that total scores on the parental efficacy measure were *higher* for the participants categorized in earlier years of recovery, and lowest among those participants who self-reported total years in recovery as 11 years or more. However, the relationship of parental self-care as it relates to PE within the context of recovery from SUD is less clearly understood and has been an under-investigated area in research. In the current study, PE had an inverse relationship with self-care. In other words, higher PE levels were seen in those individuals with shorter recovery times, while lower PE levels were seen in those parents with the longest recovery times. Even though this was a cross-sectional study and therefore causal relationships cannot be identified, there could be several reasons for the observed differences in PE across the three recovery groups. According to Bandura (1982), self-efficacy is developed from four principal sources, one of which is verbal persuasion (support and encouragement). The adults in early recovery reported attending recovery support meetings averaging 3–5 days a week. The participants reported being affirmed at these meetings as being a good mother or father because they were in recovery from SUD. Participants who had > 11 years of recovery did not attend recovery support meetings as often; thus, these affirmations were not heard regularly.

In addition, a parent's PE levels can decrease based on the developmental time period of the child according to Glatz and Buchanan (2015), who conducted a longitudinal study of nearly 400 parents of children to explore changes in PE as the child progressed in age and development from 11 to 15 years of age. According to Glatz & Buchanan, evidence indicates that parents of adolescents tend to feel less efficacious than parents of preadolescent children (2015). However,

there was little information about the factors that predict lower PE scores among adolescent parents (Glatz & Buchanan, 2015). This study found that significant predictors for the level and amount of change in PE included physical and developmental changes in the child, parents' expectations for level of risk taking during the adolescent period, the quality of parent-child communication, and ethnicity (attributed to cultural values regarding the parental role) (Glatz & Buchanan, 2015). Thus, both parent and child factors (e.g. stage of development) can significantly influence PE levels. Future studies may need to explore parental efficacy for parents in recovery from SUD with growing adolescents/older children, who may be more difficult to parent and possibly resentful of perceived earlier parenting failures.

When total years in recovery were compared by race categories, the results were significant indicating that Non-White participants in this sample were in earlier years of recovery compared to White participants. However, the Kruskal-Wallis H test is an omnibus test statistic and thus only indicates that at least one of the groups was different. In order to explore participants of different races, a post hoc test would need to be undertaken in future larger studies to detect potential differences. Another noteworthy finding was the statistically significant relationship of total years in recovery for participants with educational levels as well as a trend towards a positive association with level of education and self-care. Although not statistically significant, this finding is clinically important because longer-term recovery is associated with increased health and wellness. During qualitative interviews, many study participants reported continuing education (e.g. obtaining college degrees as counselors, therapist, and additional certification as peer support specialist in the addiction field) as a result of being in longer term recovery and finding their "purpose". In other words, these individuals achieved higher education as a product of being in long-term recovery from SUD, and in many cases, the desire to obtain a college degree was connected to life purpose in maintaining their own recovery while assisting others struggling with SUD. These qualitative results have been analyzed and reported in greater detail elsewhere (Raynor et al., 2017). Self-care and education will be explored further in future studies with adequate sample sizes of parents in recovery from SUD. Study variables were also grouped by gender, relationship status, the total number of children, CD-RISC2 total scores, employment, and income. There were no significant correlations found for any of the other categorical variables.

Strengths and limitations

There are several limitations of the study. This study provides essential feasibility data regarding the collection of self-reported data on self-care and parenting from individuals in recovery for the purposes of intervention mapping for parents newly entering recovery. Although anticipated, the small sample size may have prevented detection of other significant correlations among study variables. This was a cross-sectional study, thus not allowing for causal relationships to be determined. Further *prospective* studies are needed to identify relationships. Data collection was not consistent in the methodology as most participants opted to complete survey instruments electronically, some by phone, and one participant requested to complete the instruments by writing answers on written surveys. Additionally, the sample had a small number of minority participants. Increasing intentional efforts to recruit minority participants in future studies is warranted.

Future research

Self-care is consistently reported to be an integral component of recovery, particularly as a healthy alternative to dealing with life stressors instead of returning to drug use (Kaskutas et al., 2014; Melemis, 2015). SAMHSA (2012) defines working recovery from SUD as a process of change through which an individual improves overall health, lives a self-directed life, and strives to reach one's full potential.

Self-care behaviors are included in this holistic process of change through which individuals improve overall health and well-being (SAMHSA, 2012). Further investigation on the role of self-care behaviors as a predictor or as a mediating variable is needed to determine self-care's potential impact on PE and other parenting outcomes.

In summary, this study demonstrated that it was not feasible to recruit adults recovering from SUD through the methods that we employed to explore self-care and parenting; more direct recruitment strategies through the engagement of primary care and mental health providers are recommended. A major strength of the study was the clear and rigorous delineation of the feasibility measures in the study: recruitment, retention, acceptability, implementation, and practicality of accessing this population for data collection. Because preliminary findings showed a significant difference in self-care and parental self-efficacy across length of time in recovery categories, more investigation is needed to determine the role of self-care in parenting and other recovery outcomes. The goal is to illuminate personal enabling factors to develop interventions that promote positive health outcomes for vulnerable families affected by SUD.

Acknowledgment

The authors would like to thank the participants of this study for the willingness to share their personal stories, to help other parents in recovery from substance use disorders.

Funding

Funding for this manuscript was made possible (in part) by Grant Number 2T06SM060559-04 from SAMHSA. The views expressed in written training materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. government.

Conflict of interest

All authors (Raynor, Mueller, Pope, Smith, and York) declare no conflict of interest.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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