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Reasons for choosing sober living houses and their associations with substance use recovery outcomes

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ABSTRACT

Background: Sober living houses (SLHs) offer abstinence-based housing for people in recovery. Studies have shown that these supportive environments are associated with positive outcomes, yet little is known about why residents choose SLHs and their relationship to recovery outcomes.
Methods: Longitudinal data were collected from SLH residents who completed an interview six months after baseline (N = 462). Participants rated the importance of eight reasons for choosing SLHs. Multilevel models assessed whether reasons for choosing were associated with outcomes abstinence on the Timeline Followback, psychiatric distress via the Psychiatric Diagnostic Screening Questionnaire (PDSQ), employment problems severity on Addiction Severity Index (ASI), and length of stay (LOS).
Results: The most frequently cited reasons residents chose SLHs were affordability (74.4 %) and wanting to live with others in recovery (63.2 %). Reasons for choosing were not associated with neither LOS nor abstinence, except for not wanting to live with others in recovery predicting abstinence from all drugs except marijuana. Choosing SLHs due to affordability was associated with less psychiatric distress; no other place to live was associated with increased psychiatric distress (Ps < 0.05). Severity of employment problems was associated with choosing SLHs based on location, transportation, and someone else paying fees (Ps < 0.01).
Conclusion: Residents seek entry into SLHs to live affordably with others in recovery. Those who had no other option had greater psychiatric distress, thus supporting findings of housing instability being related to mental health. Reasons for choosing related to employment problems severity may reflect how concerns about employment impact housing choices.

1. Introduction

1.1. Sober living houses

As people develop their identity as a person in recovery, they may want to live with others in recovery. Recovery housing is a broad category of abstinence-based housing for persons in recovery that includes sober living houses (SLHs) (Polcin et al., 2014). Based in social model recovery principles, residents support each other in their recovery; the beneficial community aspect of recovery housing has led to the descriptor "the setting is the service" (SAMHSA, 2023). Wittman and Polcin (2014) describe SLHs as evolving from 12-step houses that emerged in the 1940s for members of AA who lacked stable, abstinent-based housing. These homes transitioned from the term "12-step house" to the more inclusive "sober living houses" to allow for alternative paths to recovery rather than mandatory 12-step programs. Residents can usually stay as long as they can pay SLH fees and follow house rules that may include a curfew, attendance at house meetings, and participation in house maintenance. SLHs typically have a house manager that oversees operations. Neither onsite treatment nor clinical services are provided, but residents are encouraged or required to attend mutual-help groups. Laudet and White (2010) found that people in different stages of recovery have a variety of service needs. SLHS can fit the needs of those at different points in their recovery: those early in their recovery who do not want to return to an environment that may trigger substance use, as well as those later in recovery who want abstinence-based housing.

Decades of research highlighting positive outcomes have brought attention to this critical resource for people in recovery (Polcin et al.,

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2023). SLH studies have documented significant, sustained decreases in substance use and improvements in multiple areas of functioning impacted by substance use, such as employment and psychiatric distress (Mericle et al., 2019; Polcin et al., 2010, 2018; Subbaraman et al., 2023). Housing status, in particular continuing to live in SLHs compared to moving to independent residences, has been associated with lower odds of substance use and decreased drug problems (Polcin & Korcha, 2017). Polcin, Korcha, and Bond (2015) found that 51 % of residents reported 20 or more psychiatric symptoms at baseline. Though this number decreased over time at SLHs, psychological distress is an important longitudinal aspect of recovery (Booth et al., 2010), and elevated levels may indicate an increased risk for relapse (Erga et al., 2021).

1.2. Reasons for choosing SLHs

Because selecting a residence is a multifaceted decision, many factors may impact the selection of SLHs, such as its location, amenities, and access to transportation. Though SLHs are viewed as an affordable option for those who want to live with others in recovery, the importance of affordability and wanting to live with others in recovery is unclear in how it impacts the decisions of potential residents. Programs have emerged to cover SLH fees, such as scholarship programs at houses, Medi-Cal insurance pilot programs, and Specialized Treatment for Optimized Programming (STOP) for first-year parolees (STOP, 2024). Not having to worry about housing costs because a third party covers fees could also impact the decision of potential residents.

Currently, there is little research on reasons for choosing recovery homes. However, in one study Mericle et al. (2022) examined individual characteristics of persons who chose to enter structured recovery homes that required participation in outpatient treatment. Being female, older, receiving more services, and having both alcohol and drug use disorders compared to just having alcohol use disorder were associated with greater odds of living at a structured recovery home. One qualitative study by de Guzman et al. (2019) examined the perspectives of SLH residents involved in the criminal legal system. Many entered the house primarily to satisfy a legal requirement. However, those who identified recovery as a reason for being at the house emphasized the sense of comradery among residents. While this qualitative research gives insight into what individuals in the criminal justice system experience with SLHs, it may not generalize to others in recovery who may benefit from SLHs. More research on reasons for initially selecting SLHs could help engage more people in recovery.

1.3. Study rationale and aims

Understanding reasons people choose SLHs could help SLH operators to better attract new residents, keep them engaged in the SLH environment, and increase their lengths of stay. To provide this information, the first aim of this study was to examine reasons why residents selected SLHs. The second aim was to identify how reasons for choosing were related to recovery outcomes of substance use, employment problems, length of stay, and psychiatric distress.

2. Methods

2.1. Study sites and participants recruitment

As detailed elsewhere (Mahoney et al., 2023), participants (N = 557) were from SLHs (n = 48) in Los Angeles County that agreed to participate as recruitment sites from 2018 to 2021. SLHs were approached via email, phone, and visits to the SLH. Of the 142 eligible houses, 35 refused, 41 were non-responsive, 13 were not approached, and 53 houses agreed to participate. Six of the houses that agreed to the study were not able to enroll any participants, either due to closing (n = 3) or lack of residents' interest (n = 3). Of the 48 houses that were purposively selected to provide a diverse sample of socioeconomic status (SES) of the SLH's neighborhoods, 27.1 % were from the lowest SES quartile, 20.8 % from the second quartile, 27.1 % from the third, and 25.0 % from the highest.

Recruitment methods for participants included flyers, presentations, and referrals. Of the 964 residents that entered study SLHs during enrollment, 703 responded to attempts to screen, 589 were eligible, and 557 were enrolled. More information regarding the recruitment flow can be found in Mahoney et al. (2023). Inclusion criteria included a history of substance issues, moving into the SLH within the past 30 days, and providing three types of contact information for follow-up interviews. These analyses are based on the 462 (82.9 %) participants who completed the 6-month follow-up interview.

Informed consent was initially conducted in-person, then verbally during phone interviews due to COVID-19 regulations. Participants received $30 for the baseline interview and $40 for the 6-month follow-up. Baseline data was collected an average of 15.9 (*SD* = 9.1) days from house entry. The 6-month window was up to two months after the 6-month target date; mean number of days from baseline to this interview was 195.4 (*SD* = 17.9). PHI's IRB approved the study procedures.

2.2. Measures

Demographics: Baseline data from self-reports of age and categories for sex, race, and ethnicity.

Reason for choosing the SLH: At baseline, participants were asked "How important were the following in selecting a sober living house?" then rated eight criteria on a scale of 1–5 with 1 being "not at all important" and 5 being "extremely important." Reasons for choosing SLHs were affordability of SLH, wanting to live with others in recovery, location, no other place to live/this is my only option, access to transportation, appearance of house, SLH amenities offered, and someone else or a program paying the fees. Due to positive skewness, these ratings were converted to a dichotomized variable of low importance for the three lower ratings and high importance for the two highest, 0 = low, 1 = high.

Substance use: Timeline Followback (TLFB) method (Sobell et al., 1996) at baseline and 6-months. We collected retrospective estimates of their daily alcohol and drug use for the past six months.

Psychiatric distress: Psychiatric Diagnostic Screening Questionnaire (PDSQ; Zimmerman & Mattia, 1999). Both interviews assessed these 115 psychiatric symptoms (α = 0.95 for the total PDSQ). Higher symptom totals indicate greater psychological distress.

Severity of employment issues: Addiction Severity Index (ASI) Employment (McClellan et al., 1980; McClellan et al., 1992). Both interviews collected this subscale's four items and had α = 0.76. Scores are a continuous range from 0 to 1, higher scores indicating greater severity.

Length of stay (LOS): calculated from their self-reported house entry date to the date they reported leaving. If they were still at the house, LOS was calculated from house entry to the interview date to reflect a minimum count of LOS.

2.3. Outcome measures

The primary outcome, abstinence, was a dichotomized variable indicating whether participants' TLFB indicated any drugs or alcohol in the prior six months. This was chosen as the primary outcome because the main goal of SLHs is sustained abstinence. The secondary outcomes were percent days abstinent (PDA) on the TLFB, psychiatric distress via the Psychiatric Diagnostic Screening Questionnaire (PDSQ) symptom totals, employment problems severity on the Addiction Severity Index (ASI), and length of stay (LOS).

2.4. Analysis

For Aim 1, reasons for choosing SLHs were evaluated as percentages

of the overall sample. Sociodemographic variables, including gender, race/ethnicity, and age, were analyzed to depict sample characteristics and inform development of regression models for Aim 2. To test changes in outcomes from baseline to six-month follow-up, we used chi-square and paired t-tests. For Aim 2, multilevel mixed-effect (MLM) modeling was used to test how reasons for choosing were related to outcomes. All analyses were conducted in Stata, version 17.0.

3. Results

3.1. Aim 1

Table 1 provides data for our first aim, exploring why SLH residents chose SLHs (See Supplemental Table 1 for sociodemographic categories). The most frequently endorsed reason was affordability (74.4 %). The next most frequently stated reason was wanting to live with others in recovery (63.2 %), followed by location (62.8 %) and not having any other option (61.9 %). Ratings for other factors were access to transportation (57.6 %) and appearance of house (53.2 %), The least endorsed reasons for choosing SLHs were SLH amenities (42.4 %) and someone else or a program paying the fees (30.7 %).

We assessed changes in outcomes over time. Dichotomized abstinence, PDA, PDSQ, and ASI employment improved significantly (Ps $\leq$ 0.001, not shown). At baseline, 26.4 % (*SD* = 44) reported being abstinent for the prior 6 months. At 6 months, this increased to 57.4 % (*SD* = 50). PDA was 71.3 % (*SD* = 31.1) at baseline and 88.6 % (*SD* = 23.0) at six-month. PDSQ symptom totals decreased from 27.0 (*SD* = 23.6) at baseline to 17.7 (*SD* = 20.1). The mean for ASI employment was 0.70 (*SD* = 0.28) at baseline and 0.57 (*SD* = 0.32) at six months. Mean time-invariant LOS was 130.2 (*SD* = 72.1) days. No significant differences for the outcome scores at baseline were found between six-month completers versus non-completers. These significant improvements in different aspects of recovery led to the next analysis step of regressions to examine how reasons for choosing are related to these outcomes.

3.2. Aim 2

Tables 2 and 3 show how reasons for choosing are associated with outcomes. Initial MLMs first examined reasons for choosing as separate predictors (Table 2). Final MLMs (Table 3) simultaneously adjusted for the significant (Ps < 0.05) predictors from the initial separate models. The final models found significant associations between affordability and less psychiatric distress, (IRR = 0.79, 95 % CI [0.67, 0.93]). In addition, no other place to live was associated with greater psychiatric distress (IRR = 1.28, 95 % CI [1.04, 1.58]). The final simultaneous model for employment found endorsement of location as an important reason for choosing SLHs was associated with lower employment problem severity (β = -0.05, 95 % CI [-0.08, −0.02]). Transportation (β = 0.08, 95 % CI [0.05, 0.11]) and someone else or a program paying fees (β = 0.05, 95 % CI [0.02, 0.08]) as reasons for choosing SLHs were associated with more employment issues. The ASI employment scale includes items regarding access to a car and possession of a driver's license. Results from sensitivity models without these two items were comparable.

Table 1
Reasons for Choosing a Sober Living House (SLH): Percentages of a Sample of SLH Residents Living in Los Angeles, CA (2018–2021; N = 462).

	% Overall (N = 462)
Affordability of SLH	74.4
Wanting to live with others in recovery	63.2
Location	62.8
No other place to live/this is my only option	61.9
Access to transportation	57.6
Appearance of house	53.2
SLH amenities offered	42.4
Someone else or a program paying the fees	30.7

3.3. Post hoc sensitivity analysis

Additional sensitivity analyses (not shown) were conducted to determine the impact of other considerations, such as LOS, varying recovery pathways, and the COVID pandemic. LOS was added as a covariate to all models except for those modeling LOS as an outcome, and did not change the pattern, magnitude, or significance of the results. We considered other recovery pathways by separately examining the outcomes for abstinence from alcohol only, abstinence from drugs only, and abstinence from all drugs except marijuana for the prior 6 months. Similar to our findings for abstinence from all substances, none of the reasons for choosing a sober living house were significant, except for wanting to live with others in recovery for the outcome of abstinent from all drugs except marijuana (OR = 0.55, 95 % CI [0.33, 0.92]). Finally, to examine the impact of COVID, we created an indicator for whether participants completed their baseline interview pre- or post-COVID (before or after March 19, 2020, when Los Angeles County issued a stay-at-home order due to COVID-19 precautions), with 0 for pre- (n = 367) and 1 for post-COVID (n = 95). There were significant differences (Ps < 0.05) in those who rated the SLH location and appearance as important in choosing their SLH, increasing from 60.5 % pre-COVID to 71.6 % post-COVID for location and from 50.4 % pre-COVID to 64.2 % post-COVID for SLH appearance. Adding this variable to the ASI employment model caused choosing an SLH for amenities to become significantly related to ASI employment (β = 0.03, 95 % CI [0.00, 0.06]). When the models were run separately for pre- and post-COVID, someone else or a program paying the fees as a reason for choosing their SLH was no longer significantly related to employment issues for the post-COVID group.

4. Discussion

Here we described reasons for choosing SLHs and how these reasons were related to recovery outcomes. Affordability was the most cited reason for choosing SLHs. However, six of the eight reasons presented to residents were endorsed by a majority of the sample. One implication for SLH operators is the importance of paying attention to a variety of resident preferences when they are establishing new homes or modifying operations to increase admissions.

While residents made significant improvements on outcomes over time, none of the reasons for choosing SLHs were related to the primary outcome, 6-month abstinence from alcohol and drugs. In addition, no reasons were related to LOS or PDA. However, there were several associations between reasons and secondary outcomes. Between those who did and did not endorse living with others in recovery as a reason for choosing their SLH, those who did not endorse this reason were significantly more likely to be abstinent from all drugs except marijuana. This indicates that people who abstain from all drugs except marijuana are less likely to endorse living with others in recovery as a reason for choosing SLHs. Additional research is needed to understand this association, but this group may not have complete abstinence as their recovery goal. They might not prioritize living with others who have an abstinent-based definition of recovery or might not identify with the word "recovery." SAMHSA (2014) updated its definition of recovery to "A process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential." This more inclusive definition does not require abstinence, and researchers have examined the perspectives of those in recovery to look at how they define recovery from alcohol and substance use disorders. In the "What is Recovery?" study by Kaskutas et al. (2014), they found that 75 % of people who were in their self-defined status of no longer having problems with alcohol and drugs did not even use the word "recovery." The finding from this study could represent a different perspective of

Table 2
Reasons for Choosing a Sober Living House (SLH) and Recovery Outcomes – Separate Regression Models.

Reason for choosing	Abstinent for prior 6 months (dichotomized)	Percent days abstinent	ASI Employment Severity	PDSQ psychiatric symptoms total	Length of stay
	OR (95 % CI LL, UL)	β (95 % CI LL, UL)	β (95 % CI LL, UL)	IRR (95 % CI LL, UL)	IRR (95 % CI LL, UL)
Affordability	1.12 (0.79, 1.57)	2.54 (−4.08, 9.16)	0.00 (−0.04, 0.04)	**0.84 (0.73, 0.98)**	0.96 (0.00, 290.34)
Wanting to live with others in recovery	0.85 (0.62, 1.18)	−1.44 (−9.06, 6.18)	−0.02 (−0.05, 0.02)	0.94 (0.80, 1.10)	1.04 (0.79, 1.28)
Location	1.08 (0.77, 1.51)	4.58 (−2.13, 11.30)	**−0.03 (−0.06, 0.00)***	0.90 (0.76, 1.06)	1.03 (0.02, 70.2)
No place to live/this is my only option	1.03 (0.77, 1.38)	−3.31 (−8.88, 2.25)	**0.04 (0.01, 0.06)***	**1.21 (1.02, 1.42)***	0.94 (0.01, 150.57)
Access to transportation	1.18 (0.85, 1.62)	4.68 (−1.91, 11.28)	**0.08 (0.05, 0.12)** ***	0.91 (0.75, 1.20)	0.94 (0.02, 58.60)
Appearance of house	1.16 (0.84, 1.61)	−1.90 (−7.80, 3.99)	0.01 (−0.02, 0.04)	0.96 (0.81, 1.12)	0.92 (0.00, 185.76)
Amenities offered	0.95 (0.72, 1.24)	−2.02 (−7.04, 2.98)	**0.04 (0.00, 0.07)***	0.98 (0.82, 1.18)	0.93 (0.00, 412.14)
Criminal justice, family, or someone other than myself paying for this	1.09 (0.69, 1.74)	4.76 (−3.75, 13.28)	**0.06 (0.03, 0.09)** ***	0.94 (0.78, 1.14)	0.98 (0.00, 304.25)

Note. PDSQ = Psychiatric Diagnostic Screening Questionnaire; ASI = Addiction Severity Index.
Outcomes were analyzed using multilevel mixed models (Level-1 N = 462; Level-2 sample size n = 48). Confidence intervals (CI) with their lower limit (LL) and upper limit (UL) for robust standard errors are in parentheses. Logistic regression was used for the dichotomized outcome of abstinence. Due to positive skewness, tobit regression models were used for ASI Employment and the percent days abstinent for the six months prior to the interview. Incident Rate Ratios (IRRs) for Poisson regression models are reported for PDSQ and length of stay. Time, age, sex, and race/ethnicity were also included in the models (except for time in the length of stay models), adjusting for random effects of neighborhoods and within-subjects.
Bold signifies P ≤ 0.05. ***p < 0.001, **p < 0.01, *p < 0.05.

Table 3
Longitudinal Mixed Effect Models Predicting Psychiatric Symptoms and Employment Issues from Reasons for Choosing Sober Living Houses (SLHs) Included Simultaneously.

Reasons for choosing SLHs	PDSQ psychiatric symptoms total IRR (95 % CI LL, UL)	ASI employment severity β (95 % CI LL, UL)
Affordability	**0.79 (0.67, 0.93)****	–
Wanting to live with others in recovery	–	–
Location	–	**−0.05 (−0.08, −0.02)*****
No place to live/this is my only option	**1.28 (1.04, 1.58)***	0.02 (−0.01, 0.04)
Access to transportation	–	**0.08 (0.05, 0.11)*****
Appearance of house	–	–
Amenities offered	–	0.03 (0.00, 0.06)
Someone else or a program paying fees	–	**0.05 (0.02, 0.08)****

Note. Level-1 N = 462; Level-2 sample size n = 48. Final models simultaneously include predictor variables that show P ≤ 0.05 in separate models with the lower limit (LL) and upper limit (UL) for 95 % confidence intervals (CIs) in parentheses. "–" signifies covariate with P > 0.05 in separate exposure variable models in Table 2 and therefore not included in these models.
Values reported are Incident Rate Ratios (IRRs) for negative binomial regression models for the PDSQ model and tobit models for the ASI employment issues model. Time (interview), age, sex, and race/ethnicity were also included in the models, adjusting for random effects of SLHs and within-subjects.
Bold signifies P ≤ 0.05. ***p < 0.001, **p < 0.01, *p < 0.05.

those who are living in the SLHs that warrants future research.

Greater psychiatric distress was reported among residents who indicated they had no other options for a place to live. Some of these individuals may have significant psychiatric conditions that make it difficult for them to find and sustain employment. Their psychological distress could be heightened when they do not like the SLH but cannot leave due to a lack of housing options. This finding supports epidemiological findings that housing instability and homelessness were related to mental health problems (Padgett, 2020).

For the finding that selecting SLHs due to affordability was negatively associated with psychiatric distress, concern about affordability might indicate higher overall functioning. Those who select this reason may be middle- or low-income residents who have few psychiatric problems that interfere with their ability to work. However, their income from work might be limited and paying the cost for living at the house might be a challenge. Affordability as their reason to enter SLHs may therefore be important.

Related to affordability was the resident' perception of their ability to work while living in the house. Lower severity of employment problems was reported by those who rated location as a reason for choosing their SLHs, possibly because they needed easy access to where they worked. In contrast, residents who scored high on employment severity indicated access to transportation and a third-party paying SLH fees as reasons for choosing SLHs. Residents endorsing these reasons may not be working and may need help to pay SLH costs. In addition, they may not be able to afford a car and be more dependent on public transportation.

Study findings suggest that residents may move into SLHs for a variety of reasons, but those reasons were not related to our primary outcome of complete abstinence. This finding suggests that residents who are not focused on recovery when they enter SLHs may still experience the benefits of living in a social environment that is focused on recovery. Managers may justifiably focus on engaging all residents, regardless of their stated motivation. As SLHs gain more recognition as an evidence-based recovery option, funding SLH stays will remain critical, especially for those who might enter SLHs only because they are seeking affordable housing. Providers should consider scholarship programs, e.g., with funding from prior house residents, the broader recovery and/or local community, or others interested in supporting individuals in recovery.

5. Limitations and future directions

We were interested in the frequency of reasons for choosing SLHs and their relation to outcomes; we did not ascertain the primary reason, look at interaction effects, nor analyzed combinations of reasons for choosing SLHs. We also did not collect data on length of sobriety, a factor that could impact reasons for choosing SLHs. Future research should address

these limitations of this analysis. Selection bias due to non-random sampling is likely, so this sample could be more motivated than the overall population of individuals living in SLHs. Though we reached our targeted distribution of the SES of the SLH neighborhoods, not all houses that were approached decided to participate, thus limiting the generalizability of the results to houses that would be willing to participate in a study. This study was also conducted in Los Angeles County; SLH residents in other areas, e.g. rural, or other types of recovery residences may have different considerations. The sensitivity analyses conducted for this study also point to possible future research on how different definitions of recovery may impact decisions to stay at SLHs and their outcomes. Since the emergency precautions around COVID have ended, post-precautions data collection and analysis could examine how reasons for choosing SLHs and their relationships to outcomes may have changed.

6. Conclusions

SLHs offer housing and an opportunity for residents to learn recovery skills from each other and plan a life that supports recovery. New residents may enter for a variety of reasons, but these may have little bearing on how long they are likely to stay and whether they may benefit from their stay. The most common concern of affordability points to SLH operators needing to discuss financial options for payments upon entry and possibly setting up programs to aid residents. Reasons for choosing related to employment problems severity may indicate the influence of employment concerns on housing decisions. The other reasons for choosing SLHs were also frequently endorsed as important, implying that service providers should consider multiple issues to attract and engage residents. Since the reasons for choosing SLHs were not related to the primary outcome of abstinence from alcohol and drugs, residents can benefit from SLHs, regardless of their initial motivations.

7. Contributors

All authors conceived the analysis, contributed to the interpretation of the data, and completed substantial revisions of the work. EM coordinated the interviewers in the field, completed the data analysis, and wrote the original draft of the manuscript. MS contributed to the data analysis. DP and AM developed the original research protocol and provided expertise on the subject matter. All authors accept responsibility for the decision to submit this manuscript for publication. All authors read and approved the final manuscript.

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CRediT authorship contribution statement

Elizabeth Mahoney: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Meenakshi Subbaraman:** Writing – review & editing, Supervision, Methodology, Formal analysis. **Amy A. Mericle:** Writing – review & editing, Methodology, Conceptualization. **Douglas L. Polcin:** Writing – review & editing, Supervision, Project administration, Methodology, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Acknowledgments

Vikki Paulus and Daniel Mendieta collected the data. Ethics approval was obtained from the Institutional Review Board of the Public Health Institute (Reference I17-006). Study participants completed informed consent procedures approved by the IRB. The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.abrep.2024.100557.

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