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Identifying factors that contribute to burnout and resilience among hospital-based addiction medicine providers: A qualitative study

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ABSTRACT

Introduction: Inpatient Addiction Consultation Services (ACS) fill an important need by connecting hospitalized patients with substance use disorders with resources for treatment; however, providers of these services may be at risk for burnout. In this qualitative study, we aimed to identify factors associated with burnout and, conversely, resilience among multidisciplinary providers working on ACS.

Methods: We completed 26 semi-structured interviews with clinicians working on ACS, including physicians, social workers, and advanced practice providers. Twelve institutions across the country were represented. The study recruited participants via email solicitation to ACS directors and then via snowball sampling. We used an inductive, grounded theory approach to analyze data.

Results: Providers described factors contributing to burnout and strategies for promoting resilience, and three main themes arose: (1) Systemic barriers contributed to provider burnout, (2) Engaging in meaningful work increased resilience, and (3) Team dynamics influenced perceptions of burnout and resilience.

Conclusion: Our results suggest that hospital-based addiction medicine work is intrinsically rewarding for many providers and that engaging with other addiction providers to debrief challenging encounters or engage in advocacy work can be protective against burnout. However, administrative and systemic factors are frequent sources of frustration for providers of ACS. Structured debriefings may help to mitigate burnout. Furthermore, training to enhance providers' ability to engage effectively in advocacy work within and between hospital systems has the potential to promote resilience and protect against burnout among ACS providers.

1. Introduction

Burnout—a syndrome of depersonalization, emotional exhaustion, and a sense of reduced personal accomplishment—is prevalent among medical providers and is associated with poor outcomes for both patients and providers (Halbesleben & Rathert, 2008; Rotenstein et al., 2018; West et al., 2018). Addiction treatment providers may be at heightened risk for burnout given that individuals with substance use disorder (SUD) frequently have complicated social and behavioral needs and many have experienced significant trauma (Brooner et al., 1997; Corneil et al., 2006; Felitti et al., 1998). Indeed, outpatient addiction counselors for patients with SUD reported experiencing frustration, emotional exhaustion, and helplessness—all characteristics of burnout (Vilardaga et al., 2011). Resilience, or the ability to maintain one's mental health in the face of adversity, is related to burnout (Herrman et al., 2011). Strategies to promote provider resilience have the potential to reduce burnout and improve patient care while also increasing job satisfaction (Epstein & Krasner, 2013).

Since the onset of the COVID-19 pandemic, drug overdose deaths in the United States have steadily increased, underscoring the need for innovative approaches to addiction treatment to address this growing crisis (Ahmad & Sutton, 2021). One potential solution is the implementation of hospital-based Addiction Consultation Services (ACS) that can engage patients with SUD during hospitalization. Integrating addiction treatment into the hospital setting contributes to the delivery

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Abbreviations

ACS addiction medicine consult services

of evidence-based, life-saving care to a vulnerable patient population and improves provider and patient satisfaction (Callister et al., 2022; Collins et al., 2019; Wakeman et al., 2017; Wakeman et al., 2021). However, providers of these services may be at particular risk of burnout as hospitalized patients with SUD represent a highly morbid population with complex behavioral needs (Rowell-Cunsolo et al., 2020; Walley et al., 2012). Furthermore, inpatient ACS providers are likely to experience compounding pressures—those that affect outpatient addiction providers in addition to those that are known to affect inpatient generalists. These stressors include, respectively, a perceived lack of community resources (counselors, housing and employment support, etc.) and systemic barriers to treatment of addiction (Knudsen, Brown, Jacobson, Horst, Kim, Collier, Starr, Madden, Haram, & Molfenter, 2019a; Knudsen, Brown, Jacobson, Horst, Kim, Collier, Starr, Madden, Haram, Toy, et al., 2019b), excessive workload, and a lack of control over personal time (Hinami et al., 2012; Huynh et al., 2018). Supporting ACS team members to conduct this work is essential to build a resilient and sustainable workforce caring for a highly vulnerable population.

In this qualitative study, we explored factors that contribute to burnout and, conversely, resilience among ACS members with the goal of generating future interventions to support this valuable workforce. This work adds to the field by illuminating strategies that may support ACS providers in their provision of valuable and lifesaving treatment to hospitalized patients with SUD.

2. Methods

2.1. Study design

Between October 2020 and March 2021, we conducted 26 in-depth, semi-structured key informant interviews with ACS providers. We used the Consolidated Criteria for Reporting Qualitative Health Research as a framework to report findings for this study (Tong et al., 2007). The interview guide was informed by a well-known model of burnout and resilience published by a nationally recognized leader in the field of physician burnout (Shanafelt & Noseworthy, 2017). Model domains included meaning in work, work-life integration, workload and job demands, efficiency and resources, control and flexibility, social support, and organizational culture and values. The Colorado Multiple Institution Review Board approved this study.

2.2. Data collection & participants

To capture a range of perspectives and experiences, we interviewed physicians, social workers, and advanced practice providers (APPs) working in ACS at 12 academic institutions across the country. The study recruited participants via an initial email solicitation to ACS directors and then via snowball sampling (Biernacki & Waldorf, 1981). Providers working part or full time in an ACS were eligible for inclusion. One participant was not currently working in an ACS but had recent (within two years) and extensive ACS experience and we included them in the study.

Four authors (EB, SC, CT, LT) conducted in-person, telephone, or video interviews, which lasted between 30 and 60 min. Interviews followed a semi-structured interview guide developed by an interdisciplinary team including ACS providers (EB, SC, LT) and an experienced qualitative researcher (CT). Given that three authors (EB, SC, LT) were ACS providers at the same institution, the interviewer who was not an ACS provider (CT) conducted interviews with participants working at the authors' institution to minimize bias. All interviews were audio recorded and professionally transcribed. All participants provided informed consent. The study provided interviewees a $25 Amazon gift card for participation.

2.3. Analysis

We used a grounded theory approach to analyze interview transcripts (Charmaz, 2006). First, a codebook was inductively developed by having five team members (AD, CT, EB, LT, and SC) independently review a subset of the transcripts and create an initial list of codes (i.e. descriptors that captured the concepts and ideas discussed in the interviews). The study used iterative review of transcripts and discussion between all team members to finalize the codebook. Two coders (AD, CT) achieved codebook reconciliation through iterative coding and discussion until they reached consensus. The same coders completed the remaining coding with any discrepancy resolved by consensus, with the use of Atlas.ti (Version 8) software for data management. Four team members (CT, EB, LT, and SC) then analyzed coded data for emerging themes related to burnout and resilience in addiction medicine. Findings were continually compared with the rest of the data to determine new codes or themes. We used investigator triangulation (multiple investigators with multiple areas of expertise) to establish the trustworthiness of our findings (Denzin, 2009).

3. Results

Participants included physicians (n = 15), social workers (n = 8), and advanced practice providers (n = 3). Table 1 displays participant demographics. Twenty-five percent of responding providers worked exclusively on an ACS, while 75 % worked part of the time on other services (outpatient primary care, inpatient hospital medicine, outpatient psychiatry, outpatient addiction medicine, etc.). Participants worked at academic institutions located in the West (4 institutions, n = 11 providers), Northeast (6 institutions, n = 11 providers), and South (2 institutions, n = 4 providers) (Table 1).

Three major themes with associated subthemes emerged from the data: (1) systematic barriers contributed to burnout, (2) engaging in meaningful work increased resilience, and (3) team dynamics influenced perceptions of burnout and resilience among addiction providers.

Table 1
Participant characteristics.

Addiction provider characteristics (n = 25)[a]	
Gender	
Male	9 (36 %)
Female	16 (64 %)
Provider type	
Physician	14 (56 %)
Social worker	8 (32 %)
Advanced practice provider	3 (12 %)
Years practicing in addiction medicine	
2 or less	7 (28 %)
3–5	11 (44 %)
6–10	4 (16 %)
11+	3 (12 %)

Characteristics of physician providers (n = 14)	
Boarded in addiction medicine	
Yes	11 (79 %)
No	3 (21 %)
Training background	
Internal medicine	10 (71 %)
Family medicine	2 (14 %)
Psychiatry	2 (14 %)

[a] One provider did not complete the demographic questionnaire.

Table 2
Factors influencing burnout and resilience.

Theme 1 – Systemic barriers contributed to provider burnout
Subtheme 1a – Barriers at an institutional level
Subtheme 1b – Barriers at a broader local, regional, and national level
Theme 2 – Engaging in meaningful work increased resilience
Subtheme 2a – Role as a provider to individual patients
Subtheme 2b – Role as an educator and advocate
Theme 3 – Team dynamics influenced perceptions of burnout and resilience
Subtheme 3a – Dynamics within the ACS team
Subtheme 3b – Effects of being in a consultant role

(Table 2).

3.1. Theme 1: systemic barriers contributed to provider burnout

Many providers reported systemic and administrative factors within the hospital system that contributed to feelings of frustration and helplessness. Some perceived an excessive focus on the immediate medical problem while the broader social determinants of health that contributed to cycles of repeat hospitalizations were downplayed or ignored. The impact of broader local, regional, and national systems issues that impact care during and outside of hospitalization were also apparent.

3.1.1. Subtheme 1a: hospital policies often negatively affected care of patients with SUD

Providers described intense pressure to discharge patients from the hospital as soon as they were medically stable and expressed frustration with what they perceived as a short-sighted approach to patient care. In particular, providers felt discouraged when a patient was discharged before a plan was in place to address the patient's SUD, especially if they perceived that extra time in the hospital could prevent a future admission. Some described difficulty addressing social determinants of health and arranging adequate follow-up for patients with SUD due to the rapid turnover on inpatient services. This conflicted with the much slower pace of supportive community programs.

> "You can feel that pressure from many levels higher in the administration of 'get them out, they're uninsured, they're taking up bed space.' At least one meeting per day, 'why aren't they out.'"
>
> – Participant #24, SW

In addition to concerns surrounding discharge and transitions of care, providers reported concerns about policies within the hospital that negatively impacted patients with SUD. Participants saw policies limiting the use of buprenorphine or methadone as particularly problematic given the known efficacy of these medications in the treatment of opioid use disorders.

> "If we were to discharge these patients without anything, their chance of relapse is probably close to 100%. But if we discharge them with a prescription for buprenorphine, and a referral to a clinic, they have a fighting chance."
>
> – Participant #22, MD

The combination of pressure to discharge patients quickly and hospital-based policies that limited evidence-based treatment for patients with SUD contributed to feelings of burnout across provider types. As one physician explained, attempting to change these policies was draining in a way that direct patient care was not.

> "I'm tired after a clinical day, I feel like I need to go sit outside or take a nap. But I don't feel … completely burnt out, completely fried like I can't care about anything anymore. It doesn't tend to happen to me too much from direct clinical care. [Burnout is] more from trying to move the needle at the institution or trying to make sure that all of our patients across the board are getting good care."
>
> – Participant #7, MD

3.1.2. Subtheme 1b: limited resources and restrictive policies created barriers for the care of patients with SUD

In general, the study found community resources to be insufficient, an issue exacerbated during the COVID-19 pandemic. ACS providers expressed frustration with being unable to connect patients with needed resources upon discharge, either due to community resources being unavailable, long waitlists for residential addiction treatment, or a lack of coordination between community organizations. This included resources to treat addiction specifically and also to address social issues often associated with addiction, such as housing insecurity, poorly controlled psychiatric disease, and lack of social support. The limited availability of resources to offer to patients provoked feelings of powerlessness and a sense of futility among providers, contributing to their risk for burnout.

> "The limited access to community resources [is a barrier] specifically when it comes to addiction medicine. We have lengthy waits for residential treatment programs, that is a national crisis. … The barriers to the barriers. Some of those system dynamics - just like the access to services, and in the pandemic they're even further limited."
>
> – Participant #12, SW

> "I think having more resources for people who are homeless [would help me do my job more effectively]. A lot of insurances don't pay for a lot of different rehabs. And having more out in the community, because a lot of those things really affect substance use. It's hard to not use when you don't know if you're going to be safe and you're on the street."
>
> – Participant #10, MD

Providers also expressed concerns about the impacts of federal policies restricting the use of methadone for treatment of opioid use disorder and how these affected patient care, both generally and specifically during the period of transition after hospitalization. Some believed that specific policies that detracted from care of patients with SUD were rooted in stigma, making them particularly challenging to address effectively.

> "The walls that you run up against over and over again, clinically, are institutional, cultural and policy walls. Your sickest patients are always the patients who can't get into a methadone treatment program. I mean, that makes no sense, why we have high bar access to a lifesaving medication. That is, in the siloed programs, due to bad federal policy is a perfect example of – It's endlessly frustrating."
>
> – Participant #18, MD

> "[Regulations] around methadone are probably the biggest thing … this is a really good medicine, but the regs around it just make it so challenging. … We also have a lot of issues despite partnerships with the SNF [subacute nursing facility], it's really just based on discrimination."
>
> – Participant #4, MD

3.2. Theme 2: engaging in meaningful work increased resilience

Many providers found work in addiction medicine to be intrinsically satisfying. Making a concrete difference in patients' lives by starting them on evidence-based medications for SUD or connecting them with vital community resources, serving as an advocate for patients, and providing education for SUD treatment or harm reduction to peers and trainees were all cited as factors contributing to meaning in ACS work. Providers described particular satisfaction in being able to successfully provide patient-centered care to patients experiencing stigma within the health care system.

3.2.1. Subtheme 2a: connecting with and supporting underserved patients was rewarding

Providers noted that stigma was a nearly universally experienced phenomenon among their patients, an issue that fundamentally shaped patients' experiences during hospitalization. As one physician explained, "*almost every single one of [these patients] has had stigmatizing experiences with the healthcare system.*" Providers noted that patients with SUD were often treated more harshly than patients with other medical conditions.

> "Someone who comes in with encephalitis or something that's acting combative, no one thinks that they're a bad person. But when someone comes in with opiate withdrawal and is acting combative, there's this judgment put on that."
>
> – Participant #3, MD

For many providers, a key aspect of meaning in work involved making connections with an underserved patient population during a time of exceptional vulnerability. One provider described the importance of rapport-building in addiction medicine by stating *"our procedure is really just communication"*. Some noted the intrinsic value of offering care in a nonjudgmental way and described how patients who frequently encountered stigma were often highly appreciative of the care and support offered by ACS members.

> "A lot of these patients, they do say … some of it is hyperbole, but some of it is stigma of just like, 'Oh, you're the first doctor, or the first person in this entire hospital, who's talked to me about that, and not judged me.' And so, I think the judgment that patients feel is still there for sure."
>
> – Participant #1, MD

Some providers described focusing on positive interactions with patients to maintain optimism in a field where outcomes are often poor; as one physician reported, *"this is a low probability field of achieving the ultimate outcome of having someone not have addictive behavior anymore."* Providers expressed that consciously maintaining a focus on "small victories" in combination with a harm reduction approaches helped to promote resilience.

> "I am continuously humbled that someone allows me into their life with such vulnerability. I really truly believe that it's all ripple effect work. And even one small interaction is a pebble in that pond. I know I couldn't keep showing up with that work if I didn't believe and know that to be true."
>
> – Participant #12, SW

While individual coping strategies helped some ACS providers to foster resilience, providers also described that external feedback played a critical role in their ability to mitigate burnout. Some felt that hearing about positive outcomes after patient discharge helped to protect against burnout, but noted that this type of feedback was rare.

> "When you hear from the people that you've helped, and especially from others, that the interaction was meaningful to them, that means something. I'm not noticing that a lot of that goes around here just generally."
>
> – Participant #26, APP

3.2.2. Subtheme 2b: ACS providers found satisfaction and meaning in advocacy and education

Addiction providers derived a strong sense of meaning through advocacy work on a broader level. Providers noted the prevalence of stigma against people who use substances and found work to reduce stigma highly motivating. Some noted that participating in institutional quality improvement projects or higher-level advocacy work to improve care for patients with SUD contributed to a sense of purpose. Many providers appreciated the culture of advocacy among addiction medicine providers as a whole and enjoyed working with other similar-minded individuals.

> "I feel like [addiction medicine providers] are people who have a very, very strong sense of social justice, which is a pleasure and really important to me to work with people who are thinking about that in their work. And then also people who are interested in questioning the system and rules and trying to change it, which is also a very special group of people."
>
> – Participant #18, MD

Along the same lines, educating trainees and peers on addiction was motivating for providers. Most providers found teaching about SUD to be revitalizing and an effective way to combat stigma on broader terms. Providers perceived improvements in stigmatization of patients with SUD through peer education and through training the next generation of providers on addiction.

> "I think there still is a good deal of … stigma within my department even. ... Giving education to people who want to learn is really cool, because they're into it, and they want to hear but I think traditionally people are scared to … even talk about addiction with patients."
>
> – Participant #2, SW

> "I think having particularly early learners or with our interns, who are open to learning and … teaching moments around management, then you get to see it later on that they're actually going on and with hospitalists and with surgeons as well, working across the disciplines, that's nice."
>
> – Participant #4, MD

Conversely, some providers noted that, while education and advocacy work could be invigorating, it could also be burdensome and at times overwhelming.

> "The system is so broken at the local level, and the state level, and the national level that there's just so much work to be done there. And so, it's a wonderful field because there's so much opportunity to make a difference. But then, at the same time, you're sort of at the bottom of this mountain looking up, and wondering 'How am I ever going to get to the top?'"
>
> – Participant #21, APP

3.3. Theme 3: team dynamics influenced perceptions of burnout and resilience

ACS providers described team dynamics in mixed terms. As a whole, providers felt they met an important need in the hospital and enjoyed providing specialized knowledge about addiction medicine. Furthermore, many participants reported satisfaction in working with others within the ACS. However, providers also described conflict with other hospital teams that led to frustration and feelings of burnout.

3.3.1. Subtheme 3a: addiction providers generally felt supported by their interdisciplinary ACS colleagues

While the ACS structure varied significantly from institution to institution, providers working on interdisciplinary teams generally felt that working with those from other disciplines was beneficial both for patient care and their own well-being. In a field with many socially and behaviorally complex patients, medical providers found it valuable to work closely with nonmedical personnel, including addiction peers and patient navigators. Providers enjoyed learning from others with different perspectives and specialty knowledge and also felt that having an interdisciplinary team to share responsibilities helped to reduce the workload for everybody.

> "We have people on our team from all different disciplines and being able to go to someone of any discipline for perspective is really helpful at work."

– Participant #23, SW

Addiction providers described generating resilience through support from others on the ACS. Formal and informal debriefing sessions were noted to be particularly helpful; taking time to process challenging encounters helped some providers to mitigate the negative emotions associated with these encounters.

> "Being able to process what we just experienced, what we just heard from the patient, sometimes very disturbing, upsetting things, but being able to sort of process and discuss the things that we can do to help and the things that we can't help and then sort of moving on."
>
> – Participant #2, SW

The few physician providers working on solo or physician-only ACS teams perceived that having a nonphysician provider on the team—specifically, a social worker with specialized knowledge of local addiction treatment resources—would greatly enhance their own effectiveness as a physician and improve patient care. One such physician endorsed that having *"additional social work support would be fantastic."*

3.3.2. Subtheme 3b: being in a consultant role as the ACS team could positively or negatively influence job satisfaction

Participants referenced consultant work in both a positive and negative light. Many physician participants did not work exclusively on the ACS but instead had training as generalists and worked part time on generalist services such as outpatient family medicine or inpatient hospital medicine. A number of these providers described enjoying being in a consultant role, particularly in contrast to their "everyday" generalist work. This was particularly true when consultants felt their work was appreciated by the consulting services.

> "It's really nice to be the consultant. We rarely get to do that, where you just get to drop in and weigh in on this one problem and then leave."
>
> – Participant #9, MD

However, some providers described negative interactions with primary teams and with other non-ACS consulting teams, and felt their perspective was not valued. This contributed to burnout and disillusionment toward their hospital colleagues. Providers were discouraged when their recommendations were ignored, when patients were discharged without an adequate care plan to address their SUD, or when they perceived stigma from primary teams leading to suboptimal medical care. Some ACS providers cited unrealistic expectations from consulting teams regarding the ability of the ACS to *"miraculously fix"* a patient's SUD.

> "They're not going to necessarily take your recommendations, but then they might call you to clean up the mess when it doesn't go well."
>
> – Participant #4, MD

4. Discussion

In this study of ACS providers, participants enjoyed addiction medicine work itself, but highlighted systems barriers related to addiction care that led to symptoms of burnout. In general, providers derived satisfaction from caring for and making connections with a highly stigmatized patient population, having a demonstrable impact on substance-related patient outcomes, and being an effective advocate and educator. Conversely, providers experienced symptoms of burnout when encountering administrative and policy-level barriers to providing evidence-based SUD treatment and addiction care linkage, and when experiencing dysfunctional dynamics with other hospital teams. The multifaceted impacts of stigma were evident across themes and appear to play a unique role in mediating burnout and resilience in this population.

4.1. Study implications & action

Providers in an ACS may be at high risk for burnout, which could lead to difficulty maintaining a sustainable workforce. Indeed, our results suggest that conflict may exist between the structure and pace of inpatient medicine and the complex social and behavioral needs of hospitalized patients with SUD. Being unable to meet patients' needs due to this conflict leads to frustration and burnout among ACS providers.

Research has previously described burnout as a systems issue (Shanafelt & Noseworthy, 2017), a characterization that is borne out by our results. One way to conceptualize the impact of systems factors on burnout is using the tripartite Stanford Model of Professional Fulfillment,™ which characterizes professional fulfillment under three domains: Culture of Wellness, Efficiency of Practice, and Personal Resilience (Bohman et al., 2017). Under the "Culture of Wellness" domain, providers in our study noted misalignment between personal and institutional values, leading to burnout. Creation and dissemination of SUD-related quality improvement "toolboxes" may help providers to implement specific projects to better align the goals of patients, providers, and institutional leadership. One example of a successful program that could serve as a model for other institutions is one institution's provision of patients with harm reduction materials during hospitalization (Perera et al., 2022). Providers in our study also noted barriers to practice impacting wellness under the "Efficiency of Practice" domain, suggesting that higher-level advocacy to address specific barriers to care—such as policies limiting access to methadone and buprenorphine—could be effective in promoting resilience (Calcaterra et al., 2019; Fiscella et al., 2019; Peterkin et al., 2022). Integrating advocacy training into professional training programs has the potential to equip trainees with the skills to more effectively engage in broad advocacy work (Polcin, 2014). Furthermore, in this study, providers spoke to the power of engaging with others across institutions to enact higher-level change; to this end, involvement with national medical organizations can be a potent tool (Rosenthal et al., 2020).

Our results also indicate that team dynamics play a significant role in promoting burnout and resilience. This finding has been described in other fields including palliative care and emergency medicine; one study in the latter field demonstrated that an intervention to promote team-based care was effective in reducing provider burnout (Chang et al., 2019; Taylor & Aldridge, 2017). In this study, the dynamics within the ACS were frequently described in positive terms. Providers noted that formal and informal debriefings with colleagues helped to mitigate the impact of secondary trauma, suggesting that implementation of structured debriefing sessions within an ACS could potentially promote resilience. Evidence across a range of settings supports this approach in reducing markers of burnout among physicians (Schwartz et al., 2020; Shanafelt & Noseworthy, 2017; West et al., 2014). In contrast to the dynamics within an ACS, dynamics between the ACS and other services were often described in negative terms. Feeling ignored or undervalued and witnessing stigmatization of patients by other medical providers were examples of negative interactions described by the participants in this study. Finding ways to align incentives and promote communication and coordination between services has the potential to reduce burnout among ACS providers, and likely to improve resilience among consultant providers in a more general sense.

4.2. Study limitations

This study recruited participants via email and were self-selected for participation. Because of this, providers who felt particularly "burned out" or, on the opposite end, particularly motivated about their work may have been more likely to respond, affecting our results. Female providers were overrepresented in our study, which may have affected our results as female physicians are known to experience burnout at

higher rates than male physicians (Shanafelt et al., 2022). To address these issues, we designed our study guide to elicit both positive and negative responses. Certain areas of the country (the West/Northwest and Northeast) were overrepresented, while other areas of the country were underrepresented; we have no reason to believe that results should differ by region, but this may limit the generalizability of this study. We also did not include some members of the addiction work force, such as peers or pharmacists, although we interviewed providers working on teams that included them. Given that the structure of an ACS varied by institution, we did not include providers of all types at every ACS but instead attempted to include the provider types most frequently encountered on an ACS (Englander et al., 2022). Furthermore, the study included only a small number of advanced practice providers; however, we did not intend to explore differences between provider perspectives in this study and themes appeared consistent across provider types. Finally, we did not objectively measure burnout among participants using previously validated scales, given that the goal of our qualitative study was to obtain a subjective assessment of the range of factors affecting burnout and resilience. We also wanted to isolate experiences of the ACS and not overall burnout among providers, given that many providers worked in other capacities as well. This method limits the utility of quantitative markers of burnout.

5. Conclusion

This study illustrates factors associated with resilience and burnout among inpatient ACS providers. While addiction work itself can be highly rewarding, this study described multiple challenges to inpatient addiction work that may contribute to burnout and lack of retention in the field. Our results suggest possible future avenues for intervention that may help to promote resilience among inpatient ACS providers.

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CRediT authorship contribution statement

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in the work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript. Furthermore, each author certifies that this material or similar material has not been and will not be submitted to or published in any other publication before its appearance in the *Journal of Substance Abuse Treatment.*

Authorship contributions.

Please indicate the specific contributions made by each author.

Category 1.

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Declaration of competing interest

The authors have no conflicts of interest to disclose.

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References

Ahmad, F. B. R. L., & Sutton, P. (2021). *Provisional drug overdose death count.* https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: problems and techniques of chain referral sampling. *Sociol. Methods Res., 10*(2), 141–163. https://doi.org/10.1177/004912418101000205

Bohman, B., Dyrbye, L., Sinsky, C. A., Linzer, M., Olson, K., Babbott, S., Murphy, M. L., deVries, P. P., Hamidi, M. S., & Trockel, M. (2017). Physician well-being: The reciprocity of practice efficiency, culture of wellness, and personal resilience. *NEJM Catalyst, 3*(4).

Brooner, R. K., King, V. L., Kidorf, M., Schmidt, C. W., Jr., & Bigelow, G. E. (1997). Psychiatric and substance use comorbidity among treatment-seeking opioid abusers. *Arc. Gen. Psychiatry, 54*(1), 71–80. https://doi.org/10.1001/archpsyc.1997.01830130077015

Calcaterra, S. L., Bach, P., Chadi, A., Chadi, N., Kimmel, S. D., Morford, K. L., Roy, P., & Samet, J. H. (2019). Methadone matters: what the united states can learn from the global effort to treat opioid addiction. *J. Gen. Intern. Med., 34*(6), 1039–1042. https://doi.org/10.1007/s11606-018-4801-3

Callister, C., Lockhart, S., Holtrop, J. S., Hoover, K., & Calcaterra, S. L. (2022). Experiences with an addiction consultation service on care provided to hospitalized patients with opioid use disorder: A qualitative study of hospitalists, nurses, pharmacists, and social workers. *Subst. Abus., 43*(1), 615–622. https://doi.org/10.1080/08897077.2021.1975873

Chang, B. P., Cato, K. D., Cassai, M., & Breen, L. (2019). Clinician burnout and its association with team based care in the emergency department. *Am. J. Emerg. Med., 37*(11), 2113–2114. https://doi.org/10.1016/j.ajem.2019.06.032

Charmaz, K. (2006). Constructing grounded theory: a practical guide through qualitative analysis. *Nurse Res., 13*(4), 84. https://doi.org/10.7748/nr.13.4.84.s4

Collins, D., Alla, J., Nicolaidis, C., Gregg, J., Gullickson, D. J., Patten, A., & Englander, H. (2019). "If it wasn't for him, i wouldn't have talked to them": qualitative study of addiction peer mentorship in the hospital. *J. Gen. Intern. Med.*. https://doi.org/10.1007/s11606-019-05311-0

Corneil, T. A., Kuyper, L. M., Shoveller, J., Hogg, R. S., Li, K., Spittal, P. M., Schechter, M. T., & Wood, E. (2006). Unstable housing, associated risk behaviour, and increased risk for HIV infection among injection drug users. *Health Place, 12*(1), 79–85. https://doi.org/10.1016/j.healthplace.2004.10.004

Denzin, N. K. (2009). *The research act: A theoretical introduction to sociological methods* ((1st ed.).). Routledge.

Englander, H., Jones, A., Krawczyk, N., Patten, A., Roberts, T., Korthuis, P. T., & McNeely, J. (2022). A taxonomy of hospital-based addiction care models: a scoping review and key informant interviews. *J. Gen. Intern. Med.*. https://doi.org/10.1007/s11606-022-07618-x

Epstein, R. M., & Krasner, M. S. (2013). Physician resilience: what it means, why it matters, and how to promote it. *Acad. Med., 88*(3), 301–303. https://doi.org/10.1097/ACM.0b013e318280cff0

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The adverse childhood experiences (ACE) study. *Am. J. Prev. Med., 14*(4), 245–258. https://doi.org/10.1016/s0749-3797(98)00017-8

Fiscella, K., Wakeman, S. E., & Beletsky, L. (2019). Buprenorphine deregulation and mainstreaming treatment for opioid use disorder: X the X waiver. *JAMA Psychiatry, 76*(3), 229–230. https://doi.org/10.1001/jamapsychiatry.2018.3685

Halbesleben, J. R., & Rathert, C. (2008). Linking physician burnout and patient outcomes: exploring the dyadic relationship between physicians and patients. *Health Care Manag.Rev., 33*(1), 29–39. https://doi.org/10.1097/01.Hmr.0000304493.87898.72

Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience? Canadian journal of psychiatry. *Rev. Can. Psychiatrie, 56*(5), 258–265. https://doi.org/10.1177/070674371105600504

Hinami, K., Whelan, C. T., Miller, J. A., Wolosin, R. J., & Wetterneck, T. B. (2012). Job characteristics, satisfaction, and burnout across hospitalist practice models. *J. Hos.l Med, 7*(5), 402–410. https://doi.org/10.1002/jhm.1907

Huynh, C., Bowles, D., Yen, M. S., Phillips, A., Waller, R., Hall, L., & Tu, S. P. (2018). Change implementation: The association of adaptive reserve and burnout among inpatient medicine physicians and nurses. *J. Interprof. Care, 32*(5), 549–555. https://doi.org/10.1080/13561820.2018.1451307

Knudsen, H. K., Brown, R., Jacobson, N., Horst, J., Kim, J. S., Collier, E., Starr, S., Madden, L. M., Haram, E., & Molfenter, T. (2019). Pharmacotherapy, resource needs, and physician recruitment practices in substance use disorder treatment programs. *J. Addict. Med., 13*(1), 28–34. https://doi.org/10.1097/adm.0000000000000441

Knudsen, H. K., Brown, R., Jacobson, N., Horst, J., Kim, J. S., Collier, E., Starr, S., Madden, L. M., Haram, E., Toy, A., & Molfenter, T. (2019). Physicians' satisfaction with providing buprenorphine treatment. *Addict. Sci. Clin. Pract., 14*(1), 34. https://doi.org/10.1186/s13722-019-0163-3

Perera, R., Stephan, L., Appa, A., Giuliano, R., Hoffman, R., Lum, P., & Martin, M. (2022). Meeting people where they are: implementing hospital-based substance use harm reduction. *Harm Reduct. J., 19*(1), 14. https://doi.org/10.1186/s12954-022-00594-9

Peterkin, A., Davis, C. S., & Weinstein, Z. (2022). Permanent methadone treatment reform needed to combat the opioid crisis and structural racism. *J. Addict. Med., 16*(2), 127–129. https://doi.org/10.1097/adm.0000000000000841

Polcin, D. L. (2014). Addiction science advocacy: Mobilizing political support to influence public policy. *Int. J. Drug Policy, 25*(2), 329–331. https://doi.org/10.1016/j.drugpo.2013.11.002

Rosenthal, R. N., Welsh, J. W., Connery, H. S., Barnett, B. S., DeVido, J., Hill, K., Levin, F. R., Williams, A. R., & Greenfield, S. F. (2020). Advocacy and public policy efforts of the American Academy of addiction psychiatry. *Am. J. Addict., 29*(5), 401–406. https://doi.org/10.1111/ajad.13085

Rotenstein, L. S., Torre, M., Ramos, M. A., Rosales, R. C., Guille, C., Sen, S., & Mata, D. A. (2018). Prevalence of burnout among physicians: A systematic review. *JAMA, 320*(11), 1131–1150. https://doi.org/10.1001/jama.2018.12777

Rowell-Cunsolo, T. L., Liu, J., Hu, G., & Larson, E. (2020). Length of hospitalization and hospital readmissions among patients with substance use disorders in New York City. *NY USA. Drug and Alcohol Dependence, 212*, Article 107987. https://doi.org/10.1016/j.drugalcdep.2020.107987

Schwartz, R., Shanafelt, T. D., Gimmler, C., & Osterberg, L. (2020). Developing institutional infrastructure for physician wellness: qualitative insights from VA physicians. *BMC Health Serv. Res., 20*(1), 7. https://doi.org/10.1186/s12913-019-4783-9

Shanafelt, T. D., & Noseworthy, J. H. (2017). Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin. Proc., 92*(1), 129–146. https://doi.org/10.1016/j.mayocp.2016.10.004

Shanafelt, T. D., West, C. P., Sinsky, C., Trockel, M., Tutty, M., Wang, H., Carlasare, L. E., & Dyrbye, L. N. (2022). Changes in burnout and satisfaction with work-life integration in physicians and the general US working population between 2011 and 2020. *Mayo Clin. Proc., 97*(3), 491–506. https://doi.org/10.1016/j.mayocp.2021.11.021

Taylor, J., & Aldridge, J. (2017). Exploring the rewards and challenges of paediatric palliative care work - a qualitative study of a multi-disciplinary children's hospice care team. *BMC Palliat. Care, 16*(1), 73. https://doi.org/10.1186/s12904-017-0254-4

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *Int.J. Qual. Health Care, 19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042

Vilardaga, R., Luoma, J. B., Hayes, S. C., Pistorello, J., Levin, M. E., Hildebrandt, M. J., Kohlenberg, B., Roget, N. A., & Bond, F. (2011). Burnout among the addiction counseling workforce: the differential roles of mindfulness and values-based processes and work-site factors. *J. Subs. Abuse Treat., 40*(4), 323–335. https://doi.org/10.1016/j.jsat.2010.11.015

Wakeman, S. E., Kane, M., Powell, E., Howard, S., Shaw, C., & Regan, S. (2021). Impact of inpatient addiction consultation on hospital readmission. *J. Gen. Intern. Med., 36*(7), 2161–2163. https://doi.org/10.1007/s11606-020-05966-0

Wakeman, S. E., Kanter, G. P., & Donelan, K. (2017). Institutional substance use disorder intervention improves general internist preparedness, attitudes, and clinical practice. *J. Addict. Med., 11*(4), 308–314. https://doi.org/10.1097/adm.0000000000000314

Walley, A. Y., Paasche-Orlow, M., Lee, E. C., Forsythe, S., Chetty, V. K., Mitchell, S., & Jack, B. W. (2012). Acute care hospital utilization among medical inpatients discharged with a substance use disorder diagnosis. *J. Addict. Med., 6*(1), 50–56. https://doi.org/10.1097/ADM.0b013e318231de51

West, C. P., Dyrbye, L. N., Rabatin, J. T., Call, T. G., Davidson, J. H., Multari, A., Romanski, S. A., Hellyer, J. M., Sloan, J. A., & Shanafelt, T. D. (2014). Intervention to promote physician well-being, job satisfaction, and professionalism: a randomized clinical trial. *JAMA Intern Med, 174*(4), 527–533. https://doi.org/10.1001/jamainternmed.2013.14387

West, C. P., Dyrbye, L. N., & Shanafelt, T. D. (2018). Physician burnout: contributors, consequences and solutions. *J. Inter. Med., 283*(6), 516–529. https://doi.org/10.1111/joim.12752