



Harm Reduction Principles in a Street Medicine Program: A Qualitative Study

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Abstract There is ample evidence that homelessness is associated with high rates of morbidity and mortality. Street Medicine seeks to eliminate these disparities by providing healthcare on the streets to people who are unsheltered. While extant research describes health disparities for the unsheltered and programmatic approaches to addressing housing instability, there are few published studies describing how healthcare providers build and maintain relationships with patients on the street. This insight is central to specifying how street medicine differs from traditional forms of care and defining aspects of street medicine that contribute to successful patient engagement. Through a collaboration between Operation Safety Net (OSN), a street medicine provider in Pittsburgh, Pennsylvania, and [name redacted], an exploratory qualitative study was designed and implemented using harm reduction principles as a guiding framework. Qualitative interviews were conducted with eleven OSN street medicine providers and a thematic analysis using a deductive approach was used to analyze the data. Findings identified the ways that relational harm reduction was central to all aspects of patient care provided through this program. Major themes included: (1) individualism, or meeting patients where they are figuratively and literally; (2) humanism, which refers to valuing and holding true regard for patients; and (3) nonjudgmental care, in which providers do not hold negative attitudes toward patients and their decisions. These themes are consistent with relational principles of harm reduction. Challenges that were discussed also aligned with these principles and included frustration with systems providing care that did not meet patients' individualized needs, and pain and trauma experienced by providers upon losing patients for whom they genuinely cared. Understanding these

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relational principles of harm reduction may help providers operationalize ways to effectively engage and maintain homeless patients in care and subsequently bridge the gap to traditional models of care. This study may provide valuable insights to expand the street medicine field in research and applied clinical and community settings.

Keywords Harm reduction · Street medicine · Homelessness · Homeless medicine · Provider–patient relationships · Patient engagement

Introduction

In 2019, nearly 568,000 people in the US were homeless on a single night, two-thirds of whom were estimated to live in shelters or other emergency housing, with the other third unsheltered (US Department of Housing and Urban Development 2019). The infection exposure and health vulnerabilities created by life on the streets and the fractured system of healthcare in the US suggest that this population is likely to experience unprecedented levels of illness, health disparities, and mortality (Neto et al. 2020; Nusselder et al. 2013; Nielsen et al. 2011). One study found that the all-cause mortality rate for the unsheltered was nearly 10 times higher than the rest of the population (Roncarati et al. 2018). The need to improve services for people who are homeless is not only clinically urgent, but also a matter of critical social justice.

Street medicine is a field of medicine in which healthcare is provided on the streets to people who are homeless (Withers 2011; King 2019; Street Medicine Institute 2020). Street medicine typically includes a range of medical and social services provided in ways that meet the unique needs of unsheltered populations, meeting people where they are both figuratively and literally (Stefanowicz et al. 2021). A guiding principle of street medicine is that caring for people on their own terms to reduce or remove barriers is critical to building trust with this highly marginalized population and is the first step in linking them to coordinated or traditional types of care (Withers 2011). Street medicine is becoming recognized as an international movement, as evidenced by the development of the International Street Medicine Symposium in 2005 (Street Medicine Institute 2020).

Operation Safety Net (OSN) is a nonprofit that has been providing services to the unsheltered homeless population in Allegheny County, PA for over twenty-five years, serving 3,000 patients annually, and is recognized as one of the nation's first targeted, full-time street medicine providers (MacReady 2008; O'Toole and Withers 1998; Schneider 2007; Rubin 2020). OSN programs include teams that walk the streets to provide outreach and medical care to those who are unsheltered, a medically equipped van, a winter shelter, drop-in day services, case management, legal assistance, and supportive housing. Though recognized as a best practice model for other street medicine programs globally, little published literature describes the mechanisms by which OSN or other street medicine providers engage and retain patients in care. Previous studies have described specific aspects of street medicine such as low-barrier buprenorphine prescribing (Carter et al. 2019), care of patients

with specific conditions like rheumatoid arthritis (Seto et al. 2020), and integration of electronic health records (Forrest, Hayes, Saenz 2018). However, there are few published studies describing the patient–provider relationship in the context of street medicine, and how this might contribute to successful patient engagement and healthcare improvements for homeless individuals.

Harm reduction refers to approaches aiming to reduce the negative consequences of health behaviors without necessarily eliminating the problematic health behaviors entirely (Logan and Marlatt 2010; Marlatt 1996; Marlatt and Witkiewitz 2010; Hawk et al. 2017). Importantly, harm reduction was developed as a humane approach to caring for people who use injection drugs primarily by drug users themselves (Marlatt 1996). Harm reductions strategies such as syringe service programs, naloxone distribution, and medications for opioid use disorder effectively engage people who use drugs in care by providing services that are responsive to their needs without assuming abstinence as the ideal clinical outcome (Marlatt et al. 2011; McNeil et al. 2016; Uyei et al. 2017; Krawczyk et al. 2019). Though typically thought of as *structural* approaches (e.g., policies or strategies such as syringe service programs), harm reduction is also a *relational* approach to care that can be implemented in healthcare teams to improve outcomes for oppressed and vulnerable populations, including those experiencing housing instability (Hawk et al. 2017). Harm reduction principles for healthcare settings (Hawk et al. 2017) describe ways that clinicians can operationalize and provide relational harm reduction care (e.g., humanism, pragmatism, individualism, autonomy, incrementalism, and accountability without providers terminating patients from care; see Table 1) and demonstrate that this approach is

Table 1 Harm Reduction Principles, Definitions, and Approaches for Healthcare Settings

Principle	Definition
1. Humanism	<ul style="list-style-type: none"> • Providers value and genuinely care for patients • Negative judgements are not made against patients' decisions; grudges are not held
2. Pragmatism	<ul style="list-style-type: none"> • Providers understand that none of us will ever achieve perfect health behaviors • As such, multiple options for care are provided • Abstinence and other healthcare goals prioritized by the traditional medical model are not assumed
3. Individualism	<ul style="list-style-type: none"> • Each patient presents with their own needs and strengths, and interventions are tailored to these
4. Autonomy	<ul style="list-style-type: none"> • Shared medical decision making is emphasized • Though providers offer options for medical intervention, ultimately patients make their own choices about medications, treatment, and health behaviors to the best of their abilities, beliefs, and priorities
5. Incrementalism	<ul style="list-style-type: none"> • Any positive change is a step forward • Positive change can take years, and plateaus and backwards movement is expected • It is important to understand and plan for backward movements
6. Accountability without termination	<ul style="list-style-type: none"> • Patients are not “fired” for not achieving goals or otherwise punished for backwards movement • Patients have the right to make harmful health decisions. Providers can still help them to understand that consequences are their own

valuable for a number of patient populations beyond those using illicit drugs. The current study aimed to explore the extent to which street medicine providers build on relational harm reduction principles to create bonds and improve outcomes for homeless patients and to further operationalize the provision of street medicine in the context of the patient–provider relationship.

Methods

The current study stems from a collaboration between OSN’s leadership team and researchers from [name redacted], who were committed to jointly exploring aspects of street medicine that were integral to patients’ success. The primary research goal was to understand qualitatively key aspects of OSN’s street medicine program that were seen as effective in engaging patients in care. We were also interested in exploring what challenges were experienced by OSN team members and elements of care that set their program apart from traditional healthcare services. Meetings with OSN leadership and the research team took place over the course of a year, during which the OSN team described how their services operate. It became apparent that their approach was consistent with the principles of harm reduction, and it was at this point that the team agreed to use these principles as the organizing framework for this study. OSN leadership and the research team decided to conduct qualitative interviews using convenience sampling with OSN staff and patients, beginning with staff interviews. Unfortunately, the COVID-19 pandemic struck before we were able to conduct patient interviews and it was decided not to proceed in the interest of safety and increasing demand on the OSN team’s time. Harm reduction principles for healthcare settings (Hawk et al. 2017) were used to jointly develop the interview guide focused on patient–provider relationships in the street medicine context. It should be noted, however, that the interview guide did not probe specifically on the harm reduction principles, but rather included questions related to aspects of patient care that might allow the principles to naturally emerge. Principles were not directly asked about or discussed in interviews.

We recruited staff members who provided street medicine/outreach services or direct services through the OSN drop-in shelter or housing programs. The research team visited OSN staff meetings to present the opportunity to participate in the study. Interested staff were then scheduled for interviews via email. Recruitment continued until the research team concurred that saturation had been achieved. Researchers verbally consented participants immediately prior to the interviews. Nineteen staff members were invited to participate and ultimately eleven were interviewed. Study activities were deemed exempt from review by [redacted] Human Research Protection Office. Interviews took place in private rooms in OSN offices, averaged one hour in length, were audio-recorded, and were transcribed by a professional transcription service. All transcripts were de-identified to protect confidentiality.

Analysis

Using Nvivo 12 (NVivo Qualitative Data Analysis Software 2018), a thematic analysis was conducted using a deductive approach based on the harm reduction principles of care framework. First, two researchers read through all of the transcripts, exploring major themes to contextualize the data and supplementing with field notes. In our open coding exploration of the data, we did not look for each of the harm principles specifically but allowed all themes, including those consistent with the principles, to naturally emerge. Just as the interview guide did not directly ask about the specific principles, in our coding approach we did not create the expectation that each of the principles would be present. To develop a codebook, both researchers created lists of open codes, then discussed the codes and jointly described initial definitions and examples of when codes would be applied. Both researchers coded the first five transcripts, and after each transcript was coded, they met to compare application of codes and identify emerging themes. When coding differences occurred, they were discussed until agreement was met. Clarification of codes and new codes were added to the codebook. This iterative process of coding and codebook refinement was repeated for the first five transcripts, after which it was decided that coding consistency between researchers was high enough to warrant independent coding for the remaining transcripts. After the transcripts were coded, the full team of three researchers performed axial coding, reading through coded excerpts, drawing connections between open codes, and integrating patterns of codes addressing the research questions. Once key themes and supporting excerpts were developed, the researchers met with the OSN team to conduct member checking and further interpret the data.

Results

Eleven OSN staff were interviewed, including clinical and street outreach staff, case managers, and those providing housing and drop-in services. Throughout the interviews, it became apparent that the relationships that providers built with patients was central to their approach to care. Three primary themes were identified: (1) individualism, consisting of meeting patients where they are figuratively and literally; (2) humanism, referring to the ways that providers value and hold true regard for patients; and (3) nonjudgmental care, in which providers do not hold negative attitudes toward patients and their decisions. Although other harm reduction principles also emerged, as described in the discussion section below, we saw these three themes as most salient within the data and to the research question.

Individualism

OSN staff described their services as a customized stepwise process, including engagement, retention, and goal completion, based on patients' individual needs.

Meeting each patient where they are physically and emotionally is key to successfully engaging and retaining patients in care, demonstrating compassion, helping patients overcome medical mistrust, and working toward each patient's ideal outcomes.

It's not coming in and being like, 'What do you need?' I think it's more getting down on somebody's level...It's sitting down next to them, not standing above them. You know, being where they are physically in the camps and then actually just talking to them. Introducing yourself. Telling them what your role is and who you are...See how they're doing. Not just what's wrong, but how they're doing in general... Sometimes it takes them meeting one of us multiple times before they'll be like, 'Oh, yeah, now I have this issue.' (S02)

In OSN's holistic approach to medicine, individual patients' social concerns often come first, before their physical or medical needs can be fully addressed. As protocol, street medicine staff said they work first to address patient-identified priorities, whether they be housing, food, or a physical health problem. By doing this, OSN staff foster relationships with patients that can eventually help tackle ongoing health and housing concerns.

We can't draw as much bloodwork or do a cardiogram necessarily. It's a choice how much you do out there. Now, I think sometimes-- well, all the times -- you don't have a contractual understanding of what you do when someone comes to a doctor's office: You're here. I'm going to do this. You're going to cooperate because that's why you're here. But when you come up on someone who's drunk and saying they want to kill themselves or they don't want to go on, you can't really deal with their cholesterol numbers...You can't make people do as much as you could in a clinic. You do have to deal with their social situation. (S08)

Therefore, while the overarching programmatic goals of street medicine focus on improving the health, living conditions, and treatment of individuals experiencing homelessness, patients' individual wants and goals are prioritized rather than what OSN staff deem as important. Once a patient-identified goal is set, street medicine staff work with them to help establish steps and resources needed to reach each goal. Often staff described the provision of care as starting with patients' most immediate, basic needs and building toward more intensive, traditional medical care or services.

The reality is I would love if no one needed me. I would love if no one needed Operation Safety Net ever. I wish we could all just go home, and that would be the end of it. But for as long as they do, I try to see it as giving them the autonomy to make decisions but also supporting them and empowering them to do that. Whether it's something tangible like a bus ticket or driving someone to three stores before they'll go to the emergency room. It's like at the end of the day she still made that decision that she was going to go. I just was the one that taxi cabbed her around for three hours before she decided to go. (S01)

Participants described how meeting patients where they are to establish trust is a step toward filling gaps in care from traditional health systems, particularly for individuals who would otherwise be unengaged or marginalized from existing services, then working to transition patients into those systems. The prioritization of trust during the process of working with patients is a unique, key component of approaching each individual patient's care plans with the ultimate goal of engaging them in traditional health care.

[Getting people into primary care], it's a big goal. That's our goal for everybody... We try to be transitional primary care because a lot of our folks have been ostracized from streamlined or mainstream healthcare... So they've had a bad experience, somebody who's treated him like crap, they don't trust doctors or nurses. So it helps to have people like Dr. [name redacted]... Our folks on the streets really love him, but he's the doctor, so he helps change the face of medicine a little bit and builds that trust again... (S02)

In addition to figuratively meeting patients where they are by focusing on their individual goals, OSN staff members described physically going to where patients live on the streets as part of this outreach. In contrast to the traditional medical model, which requires patients visit brick-and-mortar medical services, OSN staff bring the tools needed to provide medical treatment on the streets while building relationships with patients. By respectfully entering patients' spaces, providers establish ongoing medical care with this population and address medical mistrust. When describing strengths of their services, OSN staff cited this flexibility as an important factor in engaging patients in care.

It's our mobility. We are able to go pretty much anywhere that we need to meet with people. That's not really true of the formal medical system to a large extent. There are exceptions, but for the most part, you go to your doctor and you have to figure out how you're going to get there. If you're sick, you have to go to the emergency room or you have to go to urgent care. It is very much on you as the patient to access your healthcare, whereas we are kind of the opposite. We want to make it easier for people to access healthcare. (S01)

By individualizing services in these ways, OSN staff demonstrate care and respect and provide highly accessible services that are responsive to what patients are going through. While not all care can be provided on the street, OSN staff are able to address basic and critical needs like wound care, assess patients' physical and social circumstances, and provide referrals and resources to address additional concerns.

Humanism

Throughout all of the interviews it was apparent that OSN staff hold their patients in high regard. OSN staff passionately told stories about their patients, describing their value and contributions. Patients were not reduced to a singular definition of being homeless but were seen as whole people with ranges of needs, strengths, and experiences.

I think realizing that these are people that have families, that have likes, and they have a job and a career, sometimes. That they're sick or that just because they're homeless doesn't mean that they're lesser. That they have talents. That they have a favorite color and a favorite song. There [are] people that care about them no matter what. We care about them...And just because they're homeless doesn't mean that they're less than and that they deserve any less dignity than the rest of us. (S02)

This whole-person approach centered provider–patient rapport building and development of trusting long-term relationships with patients. Often this relationship building can start from repeated engagement and conversations in which individuals on the street are treated with respect and compassion. Treating patients with dignity and care in this way involves being present and actively listening to patients, whether they are discussing medical issues or not, and showing that they are genuinely cared for.

I think probably the most important piece is being able to have people care enough to go up to talk to someone that they know, just by looking at them, is homeless. We know they're struggling. To be able to go, say, have a normal conversation with them and then hopefully talk them into coming indoors. (S06)

It's really just letting them know that they matter, and that's not really a medical thing at all, but just letting them know that someone cares about them and wants them to be okay, which is a different message from what they're getting from the rest of the world. (S01)

Participants also described the prevalence of chronic medical conditions, mental health challenges, and substance use disorders among the patient population, and the need to focus on small steps patients were ready for despite their often daunting medical needs. Repeated engagement helps develop long-term trusting relationships that may eventually lead to patients allowing providers to address significant health concerns.

I think about a gentleman who was chronically homeless for 15 years and he never let anybody see his feet ever. He always sat in a chair, so his feet were hanging dependently and they were always bothering him, he was always limping around. We knew that his feet were bad, and you could smell them. It was the street outreach workers that had known him for all these years that were like, "Hey, we noticed that your feet are hurting. Can we introduce you to our friends?" They...built that original trusting relationship with him. So he started letting us look at his feet, and then he started letting us take care of his feet. And he started letting us recommend treatments for his feet. (S02)

Nonjudgmental Care

Although OSN providers acknowledged the difficulty of this work, there was an evident differential between the acceptability of patient behavior in street

medicine compared to traditional medical care. In traditional medical settings, patients are often met with stigma and discrimination based on their drug use, sex work, or other negatively viewed behaviors. In contrast, OSN staff approach patients with consideration for their personhood and the situation in which they find themselves.

No matter what illness or obstacle they're facing, there is no judgment, that we'll respect that. Whenever they're ready, we'll do our best to help them and get them connected to the supports they need. We don't care if you've been an IV drug user for the past 20 years and there's not \$1 to your name. We don't care about any of that. We're here to help. (S03)

The lack of tolerance in traditional medical models was seen as a barrier to meeting patients' needs and goals and as detrimental to overcoming medical mistrust. While the acceptability of patients demonstrated by OSN staff was partially rooted in humanism—valuing patients as whole persons—it is also a demonstration of nonjudgmental care because patients' behaviors are not met with negative or harsh attitudes by OSN providers. Providers' nonjudgmental attitudes stemmed from viewing patients within the broader context of their situation and trying to understand the underlying factors driving patients' behaviors. This is also reflective of the closely related harm reduction principle of pragmatism, the understanding that people do things for a reason and even harmful behaviors deliver some benefit.

And our difference is we meet them where they're at and recognize that they do have a variety of illnesses or barriers or concerns, even developmental delays that prevent them, in some manner, from solving just daily problems that you and I would be able to solve like that, that we can come in and help with that and do it in a respectful and professional and humane manner without insulting or being degrading or anything like that. I think that's the difference. They're a human being just like everyone else. (S03)

An essential piece of street medicine care in which the nonjudgmental approach was operationalized was that patients do not get “fired” from care or pushed onto another organization by OSN. Regardless of how much effort is needed on behalf of OSN staff, patients stay enrolled in care even if goals are not met or there is treatment non-adherence.

I don't think we'll just not take care of a patient. That's not typically what we do. Another provider will take over, or we're getting burnt out on somebody, somebody else kind of steps in to take the lead on the case a little bit. I think there's like-- Maybe if they put staff in serious danger, if they put any of us in very serious danger, I think that's where we draw the line. Where it's, it's like, "Okay. We're no longer going to work with that person." But short of that... noncompliance is definitely not it. We don't ever fire anybody for noncompliance or not having health insurance. That's just not what we do. (S02)

Challenges

Participants described several issues that made the provision of street medicine services and the engagement of homeless patients challenging. Interestingly, challenges were not focused on the difficulty of providing care to this very underserved and marginalized population as one might expect. Instead, these were rooted in the overarching themes of individualism, humanism, and nonjudgmental care. A common point that was discussed was that outside systems and bureaucracies were often frustrating and created barriers to providing effective and individualized care for homeless patients. Frequently this meant that warm handoffs of engaged OSN patients to traditional providers were unsuccessful. Outside systems were not flexible enough to meet the needs of the population served, who typically present with multiple challenges and need more support than traditional systems can provide. Waiting lists for housing and other services are often untenably long. In addition, connecting patients with external services was difficult due to patients' learned mistrust of traditional medical services.

In the health center downstairs, we have an MAT [Medication Assisted Treatment] program. And it requires people to be very consistent and it's a very regimented program. You come on Tuesdays and that's the day that you get your Suboxone for the week. If you miss one of those days, you have to re-enroll in the MAT program and your appointment doesn't get set up until three weeks later...And for our folks, missing a Tuesday appointment could be they legitimately missed a bus or, I mean, it could be any number of things. We need more flexibility. We need less of a wait period. Whenever people are ready. (S02)

Challenges with connecting street medicine patients with external services are not limited to unyielding systems, but also include negative or stigmatizing attitudes that the outside world holds toward people who are homeless—the opposite of humanism.

I don't quite understand it, but unfortunately, parts of society are pretty degrading, feel that our homeless individuals are the problems, that they can't work with our systems and our healthcare systems. It's their fault. And not really looking at maybe how our systems are failing them, or are we adjusting systems to try and meet their needs? (S03)

Given the ways that participants described their genuine care for their patients, it is not surprising that in talking about challenges they frequently talked about loss and grieving. One participant stated that, "...when people die, it's very painful for staff because they've built these rapports over, in some cases, years." These types of long-term connections with patients, while valued, also place further burden on OSN staff, as lasting relationships result in lasting work.

Participants described that often their own experiences of trauma are what called them to this field. Although cited as helpful for initial engagement and

developing rapport, the compounded effect of having personal trauma while caring for patients with trauma increases the difficulty of their work.

Even though I don't mention, "I'm broken, I know what it feels like on the inside to be that way" but I do think it's super important to hire people that have this experience, also very difficult because a lot of companies have no idea how to manage it. I don't even know how to manage it except you can't hide from it. So if you know [a staff member is] in recovery then you should say, "How are you doing with your recovery," be honest. If I'm in recovery and you're in recovery, "How are you doing, are you struggling?" And people are, "Oh they're in recovery for eight months here and they're going to help our [patients] because they know what it feels like," they never check in with them on it. That's not fair. Now you've put them on a pedestal. (S06)

Finally, a challenge that was frequently discussed by participants was burnout and compassion fatigue. Given the obvious and genuine care providers have for their patients, coupled with their own experiences of trauma and the stress of trying to help patients navigate the outside health system that is often unyielding and stigmatizing, it is not surprising this topic arose. Burnout and compassion fatigue make the work even more challenging.

I'd say even harder still is avoiding compassion fatigue, which is I guess a pretty rampant issue in the nonprofit field...I'm still seeking ways to maybe light certain fires of compassion in me that have gone dormant. To reawaken those and unlock the amount of compassion that I started with.(S07)

Discussion

To our knowledge, our study is the first to use relational harm reduction principles to describe the delivery of street medicine and the patient–provider relationship for people who are unstably housed and unsheltered. Previous research applying relational harm reduction principles (e.g., those focusing on patient–provider relationships) to the provision of healthcare has primarily focused on substance use or overdose prevention programs (Dion et al. 2020; National Academies of Sciences EaM 2020; Hood et al. 2020; Bach and Hartung 2019; Han 2018; Elliott et al. 2019). These principles are increasingly being applied to other health topics including eating disorders (Bianchi et al. 2020), mental health care (Miranda and Amaral 2021), palliative psychiatric care (Strand et al. 2020), diabetes self-management (Bockwoldt 2020), occupational therapy (Shea et al. 2019), hypertension management (Culturally 2020), and breastfeeding support programs for women living with HIV (Freeman-Romilly et al. 2020). Research specific to health services for people who are homeless often focuses on care that is based in emergency departments (Ciaranello et al. 2006; O'Toole et al. 2015; Hewett et al. 2016) or delivered via mobile medical units (Arpiainen and Lilius 2020), without exploring the relational aspects of care as done in this study.

By identifying the presence and utility of harm reduction principles in OSN's successful street outreach program, our findings demonstrate that these principles are a practical framework to help providers consider ways of developing relationships with people who are homeless and effectively engaging them in care. These results build upon previous research citing the importance of relationship development for homeless populations to overcome inaccessibility of care due to interpersonal and system-level barriers (Lim et al. 2002; Hwang and Burns 2014). The harm reduction principles may offer insight into how these relationships develop and the critical need to provide the respect and dignity all patients deserve, regardless of whether or not they are living on the streets. These lessons can be applied not only when working in the context of street medicine services, but also to guide work with vulnerable patients in traditional healthcare settings and to address concerns of medical mistrust. By demonstrating how OSN applies the harm reduction principles, we offer a roadmap showing how providers can strengthen the patient-provider relationship in any setting, an approach that is theoretically effective and feasible as it does not require structural or system-wide changes to the provision of care. Moreover, our results may help health and service providers across the spectrum of care to understand the opportunities that street medicine presents in providing care to a highly marginalized population. This field of medicine, for instance, can fill gaps in care and help transition those with housing instability to traditional healthcare settings, potentially improving both patient and public health outcomes. Finally, our results suggest that the application of the harm reduction principles in the manner demonstrated by OSN may help reduce compassion fatigue by recognizing that the achievement of small steps is valuable to patients. Focusing on achievable goals prioritized by patients rather than meeting strict medical guidelines can result in better patient satisfaction and may ultimately translate to longer-term engagement in care.

While we identified three key harm reduction principles that emerged from our data (i.e., individualism, humanism, and nonjudgmental care), several other principles were embedded within these, underscoring the fact that there is overlap in elements of relational harm reduction. For example, individualization of care for patients as a key principle is closely related to the principle of incrementalism (e.g., focusing on small steps and expecting nadirs and backwards movement.) and autonomy (supporting patients' choices). Similarly, accountability without termination (e.g., patients not "fired" or punished for not achieving goals) flows naturally from humanism and nonjudgmental care. The intertwining and overlap of the harm reduction principles as they occur in our data demonstrate that harm reduction is at its core built on client-centered care and acceptance of the patient and that a flexible, responsive approach must be undertaken when building relationships with vulnerable patients.

In addition, the principle of *humanism* underlies the other key principles that emerged: seeing patients as whole persons and dignifying their experiences is essential to the provision of individualized, nonjudgmental care. Humanism is a critical principle to consider not only because of its degree of groundedness in our findings, but also because the principle can and should be applied in any healthcare setting, particularly those serving oppressed populations. As our results suggest, it is a key principle in developing long-term trusting relationships

with these populations. However, it is also notable that this degree of caring for patients takes its toll on providers, many of whom discussed grieving lost patients and burnout. The takeaway is not that providers should be prevented from caring about their homeless patients; rather, more research and programs are needed to support providers in this field.

When sharing the results with the OSN leadership team, the team further emphasized the importance and nuance of building relationships with patients in terms of outcomes. Specifically, the OSN team described how the relationships and actions (such as empathy, unconditional positive regard, and support regardless of location) seem to generate deeper healing within those served. This is especially true when witnessed over time and circumstances. Those experiencing homelessness are first embraced in a “safety net” without the burden of goals and objectives. By deemphasizing rigid outcomes, often the focus of traditional medical settings, patients served are more open to negotiated goals. This undoubtedly reflects OSN’s trauma-informed and harm reduction approach. Over time, individuals often rediscover their own value and potential with the unconditional support of this community and make the changes to achieve a better life. The OSN team shared a salient quote from a previously served patient: “They loved me until I could love myself.”

Our study is not without limitations. First, we used a small convenience sample of providers affiliated with one street medicine program in a single city. While qualitative research does not aim for generalizability, it is possible that self-elected participants may have different perspectives than those who opted out, and interviews in another location would yield different results. A strength of our study is that our research team worked closely with OSN for more than a year to develop our methods. There is ample evidence that community engagement improves relevance and utility of research (McKenna and Main 2013; Balls-Berry and Acosta-Perez 2017). However, the nature of this relationship may have introduced bias in our coding and interpretation of results as we might have leaned toward presenting favorable findings. We attempted to mitigate this bias by adding a third researcher to our analysis who had no relationship with OSN. Finally, the most glaring limitation is that we were unable to conduct patient interviews due to the COVID-19 pandemic, but hope that future research will include this important perspective.

Despite limitations, our paper provides a novel exploration of the patient–provider relationship in the context of street medicine viewed from a harm reduction perspective. Although there are extreme health disparities experienced by the homeless population, there are relatively few studies addressing this aspect of street medicine. Substantial additional research is necessary to expand the street medicine field in both research and applied settings, especially to further operationalize relational harm reduction for engagement of patients in care and then test its impact on clinical outcomes for the unsheltered. It is our hope that other researchers working with street medicine providers will use this framework to explore its value with those experiencing homelessness.

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of the manuscript. JW contributed to the final version of the manuscript. All authors contributed gave approval of the final manuscript.

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Data Availability Not applicable.

Code Availability Not applicable.

Declarations

Conflict of interest The authors have no relevant financial conflict or non-financial conflict to declare.

Ethics Approval All study procedures involving human participants were conducted 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. The study was determined by the University of Pittsburgh Human Subject Protection Office to meet Exempt Criteria 45 CFR 46.104(d)(2) (#STUDY19060149).

Consent to Participate All participants gave verbal consent to participate prior to the start of each interview.

Consent for Publication Not applicable; individual-level or identifying data are included in this manuscript.

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