

FULL-LENGTH ARTICLES

Program Evaluation and Improvement by a Homeless Community Using a Human Centered Design Approach

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People experiencing homelessness are often absent from the development and implementation of new housing projects. As mounting evidence demonstrates the link between health and housing, it seems ineffective to design solutions without the participation and insight of those who are chronically unhoused. This study describes a method for program and product evaluation that people with lived experience of homelessness can use to determine the value of new offerings and then design improvements based on their evaluation. Specifically, this article reports the experience of evaluating a handbook describing the operations of a new type of housing for people experiencing homelessness. The research team, which included people with lived experience of homelessness, performed interviews to evaluate plans in the handbook, analyzed those results, and designed improvements in the operations of the housing based on the program evaluation. The team utilized participatory analysis of the interview data and then used a Human-Centered Design approach to generate ideas based on the analysis and develop concepts to improve the operational plan. The evaluation identified four high-priority problems with the operational plan and the group then designed three unique solutions to address those problems. This project demonstrates that people with lived experience of homelessness can participate as equal partners in the evaluation of a program and the subsequent program improvement design that was based on their evaluations.

Introduction

People experiencing homelessness (PEH) face staggering health disparities, including dramatically higher mortality rates compared to the general population (Feodor Nilsson et al., 2018; Plumb, 2000; Shukla et al., 2021). A solution to homelessness is providing stable housing and supportive services for those who need it. Housing solutions to mitigate homelessness have existed for decades and include various types of temporary shelters, housing policies, transitional homes, housing first policies, and permanent supportive housing. Evidence shows that stable housing with supportive services, known as Permanent Supportive Housing (PSH), gets people off the streets, but may only improve some limited aspects of health for those who become housed (Baxter et al., 2019; Jacob et al., 2022; Onapa et al., 2022). Due to shortages, PSH is not available for everyone in need, and rigid policies make this solution less effective for some populations, such as people struggling with addiction. Thus, housing solutions for people experiencing homelessness have inadequately addressed residents' overall health, defined as a state of complete physical, mental, and social well-being, and not just the absence of disease. Despite this limited ability to improve health, the public sector spends significant amounts on housing solutions in hopes that these will improve basic health outcomes and decrease healthcare spending of people with unstable

housing (Larimer et al., 2009; Nowroozi et al., 2018; Viveiros, 2020). Criticism has focused on the need to address how these newer forms of housing support the long-term health of residents (Henwood et al., 2013). For example, a study examining the benefit of permanent housing linked to primary care services showed no improvement in resident health outcomes (Tsai et al., 2019).

Something more than housing and supportive services is needed to eliminate health disparities for people experiencing homelessness. Proposed solutions must also consider the impact of the built environment, neighborhood, and social networks on residents' health (Srinivasan et al., 2003). Promising evidence points to the short-term benefits of supportive housing models (Baxter et al., 2019), but research is needed to identify specific factors that may be associated with longer-term impacts on the health of residents. One systematic review examining the acceptability of social interventions among people experiencing homelessness demonstrates the value of integrating lived experiences into intervention design and implementation, with respect to housing (Magwood et al., 2019). Experts agree that the sustainability and acceptability of any novel design or housing strategy must include the lived experiences of people who understand what it means to live unhoused (Sekhon et al., 2017).

Purpose

We propose and report a method for program evaluation that people with lived experience of homelessness can utilize. This method leverages lived experience in the design and implementation of new programs and products to improve the lives of people in the homeless community. Initiatives might include better conditions in shelters, providing storage space for belongings, and creating new housing with low-barrier tenancy selection criteria. Creating meaningful and sustainable programs and products requires people with lived experiences of homelessness to evaluate program values and translate those findings into program and product improvement.

Context

The work examined here is rooted in a long-term housing project called Envision Community. Envision Community is an organization that empowers people with lived experiences of homelessness as designers, problem solvers, and decision-makers to create a community where all people have what they need to live their healthiest lives. Envision Community is working to build its first community in Minneapolis. Current efforts to develop new products (microhousing) and programs (self-governance and participatory operations) are ongoing. Envision Community was founded by people with lived experience of homelessness, called Envision Leaders, and they remain at its center. As the Envision Leaders worked to create their first community, other organizations joined the effort to form the Envision Community Collaborative. At the time of this writing, the Collaborative is made up of 24 organizations, including homeless advocacy groups, housing providers, supportive service agencies, health experts, academic institutions, and faith

communities. These organizations contribute their industry-specific knowledge and resources to the project to help make Envision Community a reality.

Approach

Envision Community uses a Human-Centered Design (HCD) approach when creating new products and services (IDEO, 2015). The HCD methodology explicitly addresses the needs of the people who will consume a product or service and the infrastructure that facilitates meeting those needs. HCD matches people's needs and desires with what is feasible and financially viable (Brown, 2008). This methodology has been used in architectural research (Katoppo & Sudradjat, 2015), social innovation (Brown, 2008), and to address homelessness (Bender et al., 2020). As an organization, Envision has successfully cultivated broad engagement from the homeless community using these methods. The Envision Community concept, shared values, prototype microhome, and operational handbook were all designed using HCD methodology where people experiencing homelessness were equal partners in all aspects of the design.

One notable aspect of the HCD process called prototyping resulted in increased engagement from people experiencing homelessness as evidenced by their increased engagement when participating in this design practice. Prototypes are tangible objects or representations of an idea to be tested and are only developed to the point where they effectively convey that idea (IDEO, 2015). By working tangibly, prototypes help diverse groups of people develop a shared understanding of the problem by providing the opportunity to interact with concepts embodied in the prototype and evaluate responses to the prototype. We believe people experiencing homelessness strongly embrace prototyping because participants get to tangibly experience what the group is working on, rather than simply contemplating it in their heads. In prototypes, it's possible to see tangible progress towards a shared goal.

Prototyping Intentional Community

Envision Community is creating a new program for people experiencing homelessness called "intentional community." While intentional community is not a new idea (Smith, 2002), it has never been implemented in the Minneapolis homeless community. This new intentional community program was prototyped by creating an operating handbook. The handbook was designed by members with lived experience and other housing stakeholders to define how to create a housing community that can meet the needs of people experiencing homelessness. The handbook created an outline of the culture and policies that will define the community and its ideals.

This article describes how an organization centered around people with lived experiences of homelessness evaluated this new intentional community program using the operational handbook prototype. Specifically, this article highlights the participatory analysis used to evaluate this program. The method

describes how a group of people with a wide range of cultural and educational backgrounds evaluated a program and used the results to generate program improvements.

Methods

The evaluation method described here applies Human-Centered Design (HCD) to the direct evaluative assessment of people with lived experience of homelessness. We utilized a core evaluation team that included two academic researchers, one graduate student studying public health, and three members of the community with lived experiences of homelessness that we will refer to as Lived Experience (LE) researchers. Nine other graduate students studying health administration, medicine, and public health participated in various stages of the project. The HCD mentors, who had training and practical experience in HCD, provided feedback on the evaluation plan. The work reported here is part of an ongoing evaluation process of Envision Community.

Approach and Participants

To qualitatively assess Envision Community's prototype microhome and operating handbook, participants with lived experience of homelessness were recruited through a homeless advocacy organization and a local drop-in center for people experiencing homelessness. Participants were asked to complete a written survey following a formal tour of the prototype microhome and a description of intentional community. None of the participants were familiar with Envision Community or had previously seen the prototype unit. At the end of the survey, participants were asked whether they were willing to have an in-depth interview about their views of Envision's new products and services. The 48 completed surveys were reviewed and analyzed; however, the results of those 48 surveys are not reported here. The survey was used as a tool to select participants for in-depth interviews. Survey respondents who gave unexpected, contrary, or strongly positive or negative feedback were recruited for the separate in-depth interviews.

The evaluation team developed a semi-structured interview guide that aimed to solicit feedback on the prototype operational handbook and microhome to ultimately improve Envision Community's operational plans. The semi-structured interviews allowed for additional exploration of topics that the participants directed during the conversation. Interviews were conducted over Zoom and were recorded, transcribed, and deidentified. A computer station was set up in a private area for those who did not have a computer. All interactions followed strict COVID-19 safety precautions. Interviews lasted between 60–90 minutes and participants were compensated for their expertise and time. This research was reviewed by the University of Minnesota's Institutional Review Board. Following consent, an academic researcher and one LE researcher performed in-depth interviews with seven participants.

Data Analysis (Participatory Analysis)

The full evaluation team reviewed the broad range of data gathered from the semi-structured interviews. Recognizing the extent of the material collected, LE researchers prioritized the topics of safety, conflict resolution, and social connectedness for in-depth group analysis. The evaluation team hosted five participatory analysis sessions where the data about prioritized topics were analyzed.

Each analysis session included the following team members: two LE researchers, two academic researchers, and three students. The three LE researchers from the core evaluation team could not attend every analysis session so two additional African American men with lived experience of homelessness who were not part of the core evaluation team were included in some of the data analysis sessions. They were participants in the interviews, but their interviews were not analyzed during the sessions they attended. Each analysis session had two people with lived experience of homelessness and at least one LE researcher who was a member of the core evaluation team. Sessions lasted two hours and the first 30 minutes focused on administrative details and team building. Then, data about a single topic — such as safety, conflict resolution, or social connectedness — was analyzed for 45 minutes, followed by a second topic for another 45 minutes.

Each participatory analysis session started by reviewing the goals of the session:

1. Think about what the interviewee is really thinking, saying or doing;
2. Look for patterns or ideas about dignified safety, conflict resolution, and social connectedness.

The group then reviewed roles for the session where LE researchers were the primary analyzers of the session and the other team members in the session would direct questions to them to get their feedback and reflection. The LE researchers member-checked the interview data and reflected on how interviewees' experiences matched their own. They were encouraged to “set the record straight” if there was something that did not match their own personal experiences and asked to share the insights that they generated from comparing their experience to the people who were interviewed. Students and academic researchers were encouraged to center the lived experience of the LE researchers, and all comments and questions were to be “bounced off” the LE researchers. The academic researchers served as facilitators of the discussions. The students recorded what portions of the interview transcript were reviewed and took notes.

Sessions were organized around a facilitated group analysis. This required one of the academic researchers selecting key segments of audio that related to one of the prioritized topics (safety, conflict resolution, or social connectedness). The audio clips were typically three to four minutes long and



Figure 1. Participatory Analysis Design Process Map

three to five different audio clips were played representing different participant views. After listening to each audio clip, the LE researchers answered these questions:

1. What caught your attention?
2. What mattered most to the participant?

The LE researchers were then asked to reflect on the specific topic that the audio clips addressed:

1. What kept coming up about the topic?
2. What are your takeaways from the interviews about the topic?
3. What ideas do you have for Envision to improve its operations? What ideas did the interviewees share?
4. What new questions should we ask in future interviews to better understand the topic?

In our method/evaluation process, we found that the homeless community has a language based on their shared experience. One of the principle reasons the evaluation included people with lived experiences of homelessness as primary analyzers was to center the assessment around authentic points of view. As part of this process, we asked LE researchers many questions and encouraged them to interpret what was meant by a particular phrase or concept used by participants.

The team then utilized HCD methodology (shown in [Figure 1](#)) to move from participatory analysis to concepts that Envision could use to improve its operational plans.

Each of the five analysis sessions were recorded using Zoom, which subsequently generated a transcription of the session. The analysis session transcription was then added to an Excel spreadsheet where the LE researchers' analysis was organized into insight statements.

Organizing Insight Statements

Insight statements are succinct sentences used in HCD to provide potential solutions to topical concerns identified in the participatory analysis. They are meant to convey a new perspective or idea that had not been previously considered (IDEO, 2015). The session transcripts were labeled by the academic researchers and students using an inductive process to generate meaningful

labels that captured salient themes from the analysis transcripts. Following this inductive process, the team used reflective analysis to narrow broad concepts into primary themes. Each line of the analysis session transcript was reviewed by two people to ensure that each component was thoroughly considered. Each section of the transcript was assigned an importance rating depending on the connection and pattern to other responses. When multiple perspectives expressed a similar concept, these were condensed into a singular insight. This served to filter, reduce, and combine the LE researchers' analysis into usable insights. Through the use of group-level inductive reasoning and interpretation, insights were generated from the data, rather than applying a predetermined set of rules or assumptions (Braun & Clarke, 2006; Charmaz, 2006). The academic researchers and students met to discuss each insight until its meaning could be precisely explained by LE researchers. The insight statements were then discussed and refined with the design mentors to explore the insight's implications for improving Envision. The insights were reframed as problems that Envision faces in order to generate ideas for how to improve Envision's operational plans.

Validating and Prioritizing Insight Statements

The insight statements, reframed as problems, then went through a validation process where the three core LE researchers assessed whether the problem matched their own personal lived experiences. The method of engaging the LE researchers as experts is consistent with research on the use of member checking as a technique to validate and authenticate the credibility of the data and our subsequent findings (Candela, 2019). LE researchers were then individually asked to prioritize the problem statements by ranking the top three problems that the Envision Community is most likely to face. Group discussion of each LE researcher's independent ranking, resulted in the identification of the four greatest problems that Envision Community faces.

Generating "How Might We" Questions

The academic researchers and design mentors generated "How Might We" (HMW) questions from the insight statements to reframe the greatest problems Envision Community faces into opportunities for design. HMW questions were used to address the issues because this question format suggests "that a solution is possible and because they offer you the chance to answer them in a variety of ways" (IDEO, 2015, p. 85).

Program Improvement Ideation

Five participants with lived experience of homelessness were recruited from a homeless advocacy organization and the HMW questions were presented during a two-hour Ideation Workshop facilitated by the evaluation team. First, the five participants independently answered the HMW questions and were encouraged to write down two additional ideas. After independent brainstorming, participants were encouraged to share top-of-mind ideas with the group and build on these through discussion. During the discussion, the

group combined similar ideas into idea clusters with an agreed-upon name. At the conclusion of the workshop, each participant was asked to vote for the three best idea clusters to improve Envision.

Concept Development

The three idea clusters were further explored at the concept development workshop. In preparation for the workshop, the team created brief scenarios asking participants to imagine various situations that best exemplified the idea clusters from the previous workshop. The LE researchers checked the scenarios to ensure they sounded like legitimate safety or conflict resolution scenarios that they have experienced in their lives. The team also wrote a series of questions to facilitate participants sharing the details needed to build and operate these new programs.

The evaluation team then recruited another five people with lived experience of homelessness from the homeless advocacy group to participate in a two-hour concept development workshop. Participants broke into two groups, reviewed scenarios, and answered questions about them. The academic researchers and design mentors facilitated the smaller groups and took notes. Participants were encouraged to refine the ideas from the ideation sessions into concrete and understandable concepts. They were asked to help fill in the details so a person could imagine what the concept would look like at Envision Community.

Using the details given by participants during the session, the academic researchers and design mentors then organized the information into a final concept board that included: concept name, one sentence description of the concept, why it matters, how it works, an example story, next steps to make the new program real, and learning objectives if Envision Community were to give the program improvement a try. The LE researchers reviewed the concepts to ensure validity.

Initial Dissemination

The concepts were then compiled into a report and presentation that was given to the Envision Community Board of Directors and Envision Community Collaborative members. The report and presentation were also shared at a meeting of the homeless advocacy group where participants for the interviews and workshops were recruited. During the presentations, members of the evaluation team discussed the evaluation and design process and shared the concepts as skits.

Results

Seven participants underwent the in-depth interview. All participants (100%) reported having experienced homelessness. Participants reported staying in multiple locations during the last year including: an apartment or home (2); hotel or motel (2); with family or friends (1); shelter (3); transitional program (1); car (1); street or outdoors (1); and other (1). Two participants (29%) reported being 40–49 years old, four (57%) reported being 50–59 years old, and one (14%) reported being 70–79 years old. Four participants (57%)

described their race or ethnicity as Black or African American, one (14%) as Native American, one (14%) as Caucasian or White, and one (14%) as Other. Six participants (86%) were male and one (14%) was female.

Participatory data analysis of the workshops resulted in the following insight statements that were reframed into problem statements with our LE researchers ([Table 1](#)). The eight insight statements, framed as problems that Envision Community faces, represent gaps in the current intentional community program plans. Illustrative quotes generated from the participatory analysis sessions and semi-structured interviews were chosen by the research group based on how well they supported the insight statements.

LE researchers voted to focus on the four most relevant problems that Envision Community needs to focus on for program improvement ([Table 2](#)). The process of making problem statements created a definition of each problem, which linked lived experiences to potential implications for design implementation ([Table 2](#)).

To reframe these problems into opportunities for program improvement, the team generated HMW questions that were used at the Ideation Workshop, shown in [Table 3](#). We also present how the problem statements derived from several analysis sessions contributed to a “How might we (HMW)” question. According to the HCD framework, the HMW reframing allows a team to revisit the problem in a new way by offering a new perspective on design. In this way, the group can start to identify methods to build or adapt processes that effectively target the problem ([Table 3](#)).

These HMW questions facilitated the idea generation for program improvement during the ideation workshop. Ideation workshop participants voted on the top concepts for program improvement, which included: security and policing, getting to know each other, hiring good staff, training and skill building, identifying predators and warning people, and the process of redemption. The evaluation team decided that security and policing, identifying predators and warning people, and the process of redemption had the most opportunities for unique or novel solutions to improve Envision’s intentional community program, so these concepts were selected for further development at the concept development workshop. Those ideas were then refined at the concept development workshop by the participants into the final concepts.

Final Concepts to Improve Envision Operations

During the concept development workshop, participants with lived experience of homelessness refined ideas elicited from the ideation sessions into three developed concepts.

Concept 1: See Something, Say Something Kind

Brief description: Knowing how to address difficult situations with kindness.

Table 1. Participatory analysis insights and problem statements about safety, security, and social connectedness.

Illustrative quote	Insight Statements	Problem Statement	Connection to concept
<p>"It's little things like that to make us more of a family type of deal. As opposed to a me against them type of deal... when you in a place [of being] protective, and you don't trust nobody... And then I'm looking for a reason to not like you. I'm looking for a reason to make it okay to when you turn your back, I take your wallet."</p> <ul style="list-style-type: none"> • LE researcher 	<p>I need to trust you before I will feel safe. Your idea of safety is not mine. It is harder to hurt me when you know me. I will go back to the streets if Envision is unsafe.</p>	<p>I don't trust other residents to protect me.</p>	<p>Safety Security Social connectedness</p>
<p>"You want to separate those that you have to say no to from those that you can you know definitely, um, that you can definitely trust you know when you borrow things."</p> <ul style="list-style-type: none"> • LE researcher 	<p>What you call "borrowing" is really stealing.</p>	<p>Some residents will take advantage of vulnerable neighbors.</p>	<p>Security Social connectedness</p>
<p>"Having people that you don't know around standing around all the time, every day, different people standing around makes the inhabitants feeling a lot less safe."</p> <ul style="list-style-type: none"> • LE Researcher 	<p>Strangers visiting our community makes me uncomfortable. What you are free to do in your private space still makes me feel unsafe.</p>	<p>There is a guest I don't know or trust.</p>	<p>Safety Security</p>
<p>"Now I know one thing about crack [heads] and about crystal meth [heads], they don't got no plan to go get it. That's the real issue. They don't got plans to go get it. So I know who's bringing it in."</p> <p>- Interview Participant</p>	<p>Predators from outside the Envision community can derail life progress.</p>	<p>Predators are waiting at our doors.</p>	<p>Safety Security</p>
<p>"That's going to be a slippery one, there's gonna be a lot of snakes wanting in those [staff] positions to manipulate, and to be snakes."</p> <ul style="list-style-type: none"> • LE Researcher 	<p>Staff can make us unsafe. "Neighborhood watch" can backfire. The people who want power shouldn't be trusted.</p>	<p>The wrong people are in charge of security.</p>	<p>Safety Security</p>
<p>"We can't have an individual that's not trying to live up to the standards that we have for everybody."</p> <ul style="list-style-type: none"> • LE Researcher 	<p>When a problem arises, you will be paralyzed or clueless. Even if we have rules and a plan, it won't be applied fairly.</p>	<p>You won't know what to do when problems arise.</p>	<p>Social connectedness</p>
<p>"Most people have grown up with the idea they've been pushed to the side or been shut up. They don't think their opinion really matters, and so they try to act out."</p> <ul style="list-style-type: none"> • LE Researcher 	<p>I put you on blast so you will pay attention to me. Pride and ego blind you during conflict.</p>	<p>You don't see me as a whole person when we argue.</p>	<p>Social connectedness</p>

	You only see my mistakes. You don't see my progress. You don't see that I am an individual.		
<p>"When you talk about being smooth, you know tryin' to ease into what else going on, been smooth about it."</p> <ul style="list-style-type: none"> • LE Researcher 	<p>Be smooth. We value those who are smooth. We need to focus on our common goal of maintaining peace when we argue.</p>	<p>You are not smooth during conflict.</p>	<p>Social connectedness</p>

Abbreviations: LE = Lived Experience

This idea creates a cultural norm for all Envision residents and staff reminding them — as committed, caring members of the community — they must look after fellow residents and address difficult situations.

This cultural norm works by directing individual members of Envision Community to neither ignore nor shy away from concerning events or stick their nose into someone else’s business in a self-righteous way. This concept started with the saying “see something, say something.” But feedback from people with lived experience of homelessness expressed concern about exactly *how* you “say something.” We “say something” to the people involved to acknowledge it happened and there is a need or problem that exists. We also “say something” to the people or group who can help address this need or problem. The parts of “saying something” that are important to people experiencing homelessness can be seen in [Table 4](#)

Concept 2: Community Care Team

Brief Description: Organizing to support residents during difficult situations.

This concept organizes a specific team at Envision community that looks out for the health and safety of residents. By having dedicated members oversee the well-being of the community, the Community Care Team creates belonging and a sense of family at Envision Community.

This concept works by the team focusing on building relationships among residents and supporting residents and the community when challenges arise. Members of this group are prepared for difficult situations and know how to manage threats to community wellbeing. Members of the Community Care Team are residents of Envision that are elected by other residents. They proactively check-in with and help residents, rather than policing residents and visitors or enforcing the rules of Envision like a traditional “community watch group.” Seven Community Care Team members serve as the point person for the community– one day per week ([Table 5](#)).

Concept 3: Process of Redemption

Brief Description: Healing and moving past mistakes.

Table 2. The four most important problems with the operational plan as defined and prioritized by LE researchers.

Problem Statement	Illustrative quote	What this means	Implications for Design
I don't trust other residents to protect me.	"Nobody is not going to tell anybody anything unless they can trust them." • LE Researcher	Trust is an essential ingredient for safety. Without trust, people are more likely to perform infractions against each other and less likely to talk about problems.	To have a safe community, we need to create ways to build trust between residents and establish an environment where residents look out for each other.
Predators are waiting at our doors.	"And certain people are going to prey on a community like that, they'll see that there's certain people in there and they'll target it because, no one's doing it yet so I'm going to get in there and try to get that money first before someone else steps in to get it." • Interview Participant	People from the outside will target Envision's residents and interfere with the positive progress our residents are making in their lives. These predators can include drug dealers, acquaintances that are themselves substance abusers, persons that intend to steal money and/or possessions, or sexual predators.	Envision needs to incorporate systemic barriers to stop these predatory individuals from having access to our community and have procedures to deal with predators if they do gain access.
You won't know what to do when problems arise.	"[The staff] had absolutely no policy in place to help somebody who was starting [to go into crisis]. Maybe just wait until the person went to hell, messed up the apartment, broke all the windows, broke all the woodwork. And then they would call an ambulance and have them dragged off to the hospital and just let them go into a full-blown crisis and then let the hospital handle it." • Interview Participant	When people go into crisis or problems arise, people in the community need to take action to help. However, having a plan and carrying out that plan are two different things. Sitting paralyzed or being unhelpful is what we want to avoid when problems arise.	Envision needs to plan for the most common anticipated problems and ensure everyone in the community knows what to do when that situation arises.
You don't see me as a whole person when we argue.	"People expect perfection from you. We all fall off in some way or fashion... But when people see us fall off and they knew our past is falling off, they think that they will lock us in that [past]. Don't give up on yourself because people will give up on you." • LE Researcher	During conflict, people only see others' mistakes and don't see the progress individuals have made to improve their lives. We need to acknowledge people's complex humanity, progress, and their potential going forward.	Envision needs to establish ways of resolving conflicts that acknowledge the whole person.

Abbreviations: LE = Lived Experience

Table 3. How Might We Questions.

Problem Statement	"How Might We" Question
I don't trust other residents to protect me.	How might we create ways to build trust between residents? How might we create an environment where residents feel protected and look out for each other?
You don't see me as a whole person when we argue.	How might we promote a culture of respecting and understanding each other – even when we argue?
Predators are waiting at our doors.	How might we prevent predators from entering the community? How might we deal with predators who enter the community?
You won't know what to do when problems arise.	How might we be prepared for problems that arise?

Table 4. Saying something: steps to addressing difficult situations.

Concept	Description
"Say you care"	Start by saying you care because it reminds the other person that what you say comes from the heart
"Promote privacy"	People wanted these conversations to remain private. You don't want to damage another person's reputation just because you misinterpreted a situation.
"Express equality"	Avoid self-righteousness. Let them know you are not perfect and you have struggles.
"Say what you saw"	First say what anyone would agree is a fact. Only after saying the facts, tell your version of a story that explains the facts.
"Check that it's correct"	Don't assume you have it right. Ask if your interpretation is correct.
"Listen, listen, listen"	This is the most important part!
"Ask for assistance"	Make sure the individual(s) have the support they need by sharing the situation with the designated person or group.

Table 5. The process of working as a care team.

Responsibilities	Description
Building community and trust	Their main task is regularly checking in with people, getting to know them, and understanding how everyone is doing. They strengthen community relationships even during adversity.
Document events or conflicts	They ensure residents feel heard, acknowledge what happened when a conflict or event occurs, understand the details of the community agreement, ensure a common understanding of any conflict, and later discuss with the community advocate, property manager, or entire community care team.
Be available and present	They follow the personalized crisis plan created by each resident and understand what triggers each resident and what calms them down. They listen to all involved, don't take sides or show favoritism, and never assume people are guilty.
Guide healing	They support residents and staff in resolving conflict and determining an appropriate course of action for any infractions to repair relationships and rebuild trust.
Advocate for community	Closely observe police or other service agency providers when they are called to assist an Envision resident to protect the community and its members.

This concept matters by recognizing that all residents have humanity and make mistakes. Participants felt a process of redemption was important for social connectedness. Our connections with each other are most fragile when a person screws up. This not only harms the person who was wronged, but in many cases, it also harms the community. The process of redemption is critical. Redemption prevents people from getting a "record" with the community because it provides a process for moving past mistakes.

This concept works by having two clear processes for redemption: one for individuals seeking redemption and one for the community to support those seeking redemption.

For the individual seeking redemption, there is a set of principles they must follow:

1. Quit doing what you were doing.
2. Avoid defending your actions.
3. Acknowledge that you have or have had challenges in the past, but don't let that define you.

4. If the community was harmed, understand the community's perspective and answer to the community.
5. Make it right. Abide by your words.
6. Follow up with resources to help better your situation (for example: if chemical health services were recommended as part of the process of redemption, get those services).

For the community, there is also a set of principles to guide their ongoing support for those seeking redemption:

1. Get to know the person, hear their story.
2. Try to understand the root cause of their actions.
3. Avoid attacking. Help to determine a mutually agreed upon solution to make things right.
4. Reinforce your relationship by checking in with the person and helping them stay accountable.
5. The community needs to celebrate and value the absence of retaliation and eventual forgiveness.
6. Help the person feel welcomed back into the community.

The concepts were disseminated through presentations and performed as skits to diverse audiences (available to readers by contacting authors).

Discussion

Participatory analysis

This method of program evaluation equips people with lived experience of homelessness to be the primary program evaluators making the results more authentic than research done by those who lack that lived experience. This article describes the collective concerns of people with lived experience of homelessness when they review a plan for living in community with people who have a similar life experience, namely: 1) I don't trust other residents to protect me; 2) predators are waiting at our doors; 3) you won't know what to do when problems arise; and 4) you don't see me as a whole person when we argue.

The concepts derived from this work came from interview participants and research team members with lived experience. The integration of community perspectives and experiences in the analysis and development of the user-centered design process was confirmatory. This process of actively engaging community members, students, and researchers in a collective review of findings further validated the problems and concepts. The approach described here extends the practice of member-checking beyond basic confirmation of findings through a transactional exchange of information and instead actively

incorporates the values and beliefs of community members in the verification or validation of results (Birt et al., 2016; Dick, 2017). This method is about transforming how people create the communities they want to live in and define their place in those communities. With this method, community members are the evaluators of success and proposed changes come from their analysis. This represents one way to create better programs specifically for the unhoused community and improve their empowerment.

Human-Centered Design Approach and the Unhoused Community

Incorporating an HCD approach to program evaluation is action-oriented toward program improvement. This fits with the community of people experiencing homelessness who are most interested in creating change, rather than pursuing academic interests or understanding theories. Homeless community members are less interested in how things work because they already know through their lived experience. Instead, they value doing something to change homelessness.

When reflecting on the HCD process in the context of people with lived experience of homelessness, prototyping was the HCD step that most effectively engaged the unhoused community because the prototyping process is inherently action-oriented and visual. Such findings are consistent with Vaccaro's work on participatory data analysis, which found that people experiencing homelessness engaged with visual methods to guide more insightful and meaningful research findings (Vaccaro, 2020). The use of prototypes — objects or representations used to test a solution — allows the group to see real world change in action through tangible expressions of a solution that the group is exploring. The program evaluation reported in this article is an evaluation of a previously created prototype: the intentional community operating handbook. This project began with the prototype of our operational handbook and ended with prototyping new concepts to improve safety and security at Envision Community. The concepts developed by the group were shown as visual prototypes and expressed as skits, a form of experiential prototyping, for dissemination to the community.

Foundational research by the community organization uncovered the unhoused community's desire to have more than just housing, and to find intentional community. This led the group to create an operating handbook in collaboration with people experiencing homelessness to describe the culture and policies that define intentional community in a tangible form that could be evaluated. The project reported in this article started with in-depth interviews that explored participants' reactions to that handbook prototype. The team then analyzed the interviews, created insights, decided to reframe the analysis results in the form of the greatest problems the community faces, and then created solutions based on that evaluation. Those solutions came in the form of new prototypes that our group called "concepts." These concepts are tangible but the lowest-fidelity form of a solution that the group can further evaluate as they develop the prototype into higher and higher fidelity solutions to address the problems identified.

Prototyping is a necessary part of creating real-world change, as opposed to only seeking intellectual understanding and then reporting that understanding. Research without application has little value for people in the community. Translating research that can improve lives in the community needs to be grounded in that community. However, even for a group of researchers who are only seeking understanding, prototyping is not just creating a solution. In fact, prototyping allows for testing assumptions about theories of change and their impact in the real world, as we've demonstrated in this article. Certainly, people experiencing homelessness want change in their lives and the systems surrounding homelessness, and we have found prototyping to be a highly engaging part of the design process for people experiencing homelessness. We need to further our research investigating the effectiveness of prototyping in co-creating solutions to address homelessness.

Unique contribution of students

As part of this work, a diverse group of graduate students, studying various disciplines in the health sciences, engaged in the research and analysis process. One reason this participatory project could be carried out was due to the contribution of these students. By examining the relationship between the students and LE researchers we can more fully express how the participatory methods used in this project add value. As learners, they participated in what we might call “bi-directional training,” where students actively engaged in the project as project assistants. This involved working alongside the LE researchers to support data collection and analysis. Through that support, the students gained critical training in and insight into participatory research methods and the necessary technical skills. Through the dialogue and creation of tangible artifacts, we learned how these experiences were mutually beneficial for both the students and the LE researchers.

One benefit of this method and design process is that it allows students to participate in a meaningful way. There are many obstacles to students contributing to a design process (Marullo et al., 2009) and students are limited by their knowledge and connection to those whom they are working with when practicing Human-Centered Design (Grossman & Cooper, 2004). This can result in students either not being able to produce meaningful contributions, or producing a product that is limited in scope. This was avoided by consistently member-checking with the LE researchers throughout the process. Students were able to receive feedback from both the designers and research team members — including LE researchers — providing necessary direction and recommendations. Because the students were engaged in a design process that motivated co-learning from the members with lived experience, they were able to engage in an accessible way (Strand, 2000). This research demonstrates that students from various backgrounds can contribute to HCD in a meaningful way, even when their knowledge of the specific research is limited.

Limitations and Future Developments

The method seeks to maintain the participants with lived experience of homelessness as the primary data analyzers and constrain other evaluation team members so that they cannot alter the message of people with lived experience of homelessness. In the method reported here, the academic researchers selected which segments of audio from the interviews to analyze. In the future, our group will leave additional time after each interview for the academic and LE researchers who performed the interview to reflect on which segments of the interviews had the most impact on the LE researcher and use those segments that the LE researcher identified as most meaningful for group analysis.

The challenge of this method is the time needed to conduct the work compared to analyses performed only by an academic research team. This method of participatory analysis requires double or triple the amount of time compared to a standard qualitative analysis. In the future, we will budget even more time and resources to support LE researchers as they perform this method of analysis. Also factored into the success of participatory research is the time needed to build relationships and trust within the community. This research was built on a foundation that came from all the work that has been done previously. Future work will intentionally include additional time and resources for relationship-building activities that are desired by the community engaged in the research. Although this does not directly contribute to the outcomes of the research project, indirectly it expands the network of community members who can help design and carry out meaningful research, leading to more authentic findings that are useful for the community.

The purpose of this research was to improve the outcomes of a housing community in Minneapolis. Because of this, many of the insights and findings of this study may be specific to the Minneapolis homeless community, and applying them ubiquitously would be a disservice to another community that may have different characteristics. While the findings of the study may be limited to just this community, the methodology can be generalized to additional communities. Although many of the findings could be applied elsewhere, the importance of a targeted approach cannot be overstated.

The goal of this article was to frame our design strategy in a way that presents the utility of our findings for those interested in designing or fostering prospective housing communities. This study provides a framework for how research can be conducted in an ethical way that includes important voices that often go unheard. A targeted approach is necessary to ensure that specific issues are addressed, and this study provides a foundational approach.

Conclusion

Housing solutions that promote the health and welfare of people who have experience with homelessness can benefit from the insight of those experiences in their development and practical deployment. Such insight can be further explored with people with lived experience of homelessness in the practice of

conducting the evaluation itself. Our findings suggest that co-learning through the practice of community-based research has benefits for all who contribute, but mainly in the practical nature of the products designed.

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