Computer-Mediated Peer Support Needs of Home Care Workers: Emotional Labor & the Politics of Professionalism

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Home care workers (HCWs) are increasingly central to post-acute and long-term health services in the United States. Despite being a critical component of day-to-day care of home-dwelling adults, these workers often feel underappreciated and isolated on the job and come from low-income and marginalized backgrounds. Leveraging the support of peers is one potential way to empower HCWs, but peer support encompasses a broad range of activities and aspects. Traditional conceptions of peer support may not be appropriate to the home care context, as HCWs are a distributed workforce who have few opportunities to interact with each other. In this study, we explore how HCWs value and conceptualize peer support. Our findings demonstrate the importance of peer support in performing the emotional labor of home care work and ongoing attempts to strategically frame the home care profession as essential and medical in nature. Our results ground design implications for technology-enabled peer support based on the power dynamics of our participants' context and allow us to engage with issues where technology design for empowerment intersects with exploitation in distributed or crowd work, emotional labor, and tacit knowledge.

Additional Key Words and Phrases: peer support, home care workers, health care, emotional labor

1 INTRODUCTION

Home care workers (HCWs) are healthcare professionals that provide essential long-term and post-acute health services inside patients' homes. These workers are one of the fastest growing segments in the healthcare industry in the United States [104]. However, these workers tend to have low household incomes and are members of marginalized communities, such as immigrants and

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ethnic minorities [7]. Our research is motivated by exploring how technology-enabled interventions might foster peer support to create work environments that empower HCWs.

Peer support is the forms of social capital that are shared and given between people in the same position and may include emotional support, encouragement, knowledge sharing, teaching skills, collective organization, material support, and so on [34]. This type of support is potentially valuable for marginalized workers as a community asset that could be leveraged and mobilized to empower workers to improve their material conditions and experience of work.

While peer support could be valuable to HCWs, its definition is broad. A large portion of the research in peer support involves communities which are not centered around work [82, 92], and it is not obvious what aspects of peer support are important in the labor of providing home care. Many forms of peer support may also be less applicable to HCWs due to their distributed work conditions and limited engagement with peers while isolated in patients' homes.

This study explores the types of peer support between HCWs to understand in more detail what forms of peer support currently exist and are practiced, and how this support is relevant to the labor and priorities of HCWs in affecting changes to their work conditions. Furthermore, we explore possibilities for how computer-mediated communication (CMC) might enable or foster the types of peer support to address the needs of home care work and promote the priorities of workers.

To examine these questions, we conducted a six-week study with a panel of focus group participants from New York City. We created scenarios for participants to consider that illustrated different aspects of peer support and how it may be enabled through information technology (ICTs). We created these scenarios based on a detailed review of aspects of peer support in past CSCW literature, our own experiences working with HCWs, and with feedback from community partners.

We show how peer support was instrumental for HCWs to address challenging aspects of their work, such as the emotional labor of home care and conflicts with patients and other healthcare professionals. Peers provided effective emotional support, helped HCWs regulate their emotions, and refined strategies for performing emotional labor. HCWs also faced negative perceptions of their work as unskilled or domestic, and in response, peers worked to strategically frame HCW practice as skilled and essential by cultivating a body of expertise, setting norms around practice, and encouraging HCWs to stand up to pressure to do work that was outside their job description.

HCWs sat at the bottom of the medical system hierarchy and had less power than other professionals they interact with and their patients. We found that this heavily influenced the priorities of our participants, creating an emphasis on aspects of peer support relevant to collectivization and mobilization. However, these power differences could also fracture communities, as we found many HCWs could be afraid of sharing information and endangering their jobs.

We show how the role of power, as well as challenges posed by technology adoption and literacy, interact with HCWs' priorities and values around peer support to create design implications for technology-enabled peer support among HCWs. Finally, our results allow us to contribute to continuing discussions on issues of exploitation in crowd work, the intersection of cooperation and emotional labor, and computer-mediated mentorship that exposes tacit and invisible expertise.

2 RELATED LITERATURE

To explore the relevance of peer support to the HCW context, we first identified different potential functions of peer support to guide and motivate our study design. We used the *communities of practice* (CoPs) framework to enumerate functional aspects of peer support. We describe how we used this framework below and then review literature on these different aspects.

2.1 Communities of Practice and Aspects of Peer Support

CoPs are a social configuration between practitioners that help them achieve the goals of practice and perpetuate the practice through knowledge sharing. First conceptualized as a site for situated and social learning through processes of apprenticeship [63], the theory has been expanded and redefined in multiple ways [27] to cover how CoPs maintain and create knowledge [17] and shape the identities and trajectories of participation of their members [117]. We consider such communities to encapsulate structures of peer support between practitioners, and we use this broader definition of CoPs to identify different aspects of peer support in professional contexts.

In describing CoPs, Wenger listed five functions that they have for members. The first is resolving the gap between institutional demands and the reality of work by creating strategies for doing work and interpreting policy. Second and third, CoPs maintain tribal memory and tacit expertise, and help newcomers join the practice by supporting learning this knowledge through apprenticeship. Fourth, CoPs create special language around work and perspectives on how it should be done. Finally, CoPs define the work environment by creating norms, customs, rituals, and routines that influence day-to-day work experiences [118]. Lesser & Prusak further described how CoPs build individuals' social capital. They argue that CoPs help practitioners find information about their practice, provide opportunities for members to build supportive relationships with other practitioners, and create knowledge and practice that shapes the future direction of the work [64].

These functions allow us to build a more nuanced understanding of what peer support might entail, particularly for practitioners. While the concept of CoPs has influenced research in CSCW [88, 107] - particularly in areas of studying computer-mediated communities [9, 43], the use of technology in workplaces [40, 50, 73], and training [122] - in this section, we relate the functions of a CoP more broadly to themes of research in CSCW and related fields.

2.1.1 Mobilizing to Resolve Institutional Demands and Conflict.

CoPs help practitioners navigate the demands of their employer and the realities of work. Thus, one way peers can support each other is through social mobilization, the mustering of action and allies to resist outside domination in cases of common cause. For example, this might include mobilizing to protect the boundaries of their work and contest new practices [76]. In online spaces, past research has examined how *networked counterpublics*, alternative online spaces for marginalized groups [35], can enable mobilization: firstly, by helping members define common values and ideas for engagement with popular culture [56] and second, by strengthening networks that enable members to reach out to outsiders and move the discourse of the community's needs out of the periphery [61, 110].

In *crowd work*, counterpublics are often difficult to create due to limited platform affordances. Technology platforms for online and distributed labor have been criticized for creating environments of worker invisibilization and exchangeability with a lack of control and career growth [36, 59, 96, 114]. To address information imbalance perpetuated by these platforms, workers have instead used alternative sites, such as Turkopticon, to provide transparency into employers that don't pay for work and give poorly designed tasks. Turkopticon enabled workers to discuss shared concerns and engage in mutual aid [49], as an intermediate step towards forming a networked public.

Finally, crowdsourced *e-governance* systems, such as CGNet Swara which records issues of infrastructural neglect or marginalization, may enable addressal of systemic issues that would otherwise be ignored by officials [70]. Online *e-petitions* may also provide a way for users to feel like their concerns are heard, though research is mixed on whether they enable participation or effectively drive structural change [54, 83]. These tools may be leveraged to help CoPs mobilize and create strategies for addressing grievances against institutional policies.

2.1.2 Sharing Tribal Knowledge and Tacit Expertise. CoPs maintain a *collective memory* of shared knowledge, values, and ideas [93], and peers often support each other by providing critical access to this memory. CSCW research has focused on knowledge sharing, particularly through question-and-answer (Q&A) systems [1]. Common problems involve motivating experts to answer questions, potentially by improving question quality [103], or using gamification and other social nudges [116]. Some researchers have tried leveraging user's social connections by allowing questions to be forwarded to a potentially more relevant domain expert [2, 86, 94]. Researchers have also tried to predict which users are more likely to answer questions [51, 100].

Matching a knowledge seeker to the appropriate expert may be especially relevant when the knowledge to be shared is tacit and difficult to explicate [1]. The implied physicality of such knowledge makes it difficult to share through computer-mediated interactions, though some work has explored using novel sensing to represent physical activities [66]. As the relational and physical aspects of home care are highly tacit, creating tools that support tacit knowledge sharing may allow HCWs to improve the overall level of expertise in the community.

2.1.3 Connecting to Apprenticeship and Socialization. One of the most direct forms of peer support in a CoP is apprenticeship, the relationship between newcomers and experienced practitioners that enables the former to learn skills, standards, and knowledge to become a full-fledged member. This process includes socializing newcomers to the CoP's processes and norms. Past research described the importance of such socialization in sustainable, large-scale online co-production. Newcomers to open-source projects must learn the politics of contribution and how to create narratives to fit their work into the larger project [30]. In Wikipedia communities, established members rely on tactics, such as reaching out with constructive criticism, to encourage newcomers' participation [23].

However, distributed and large-scale collaborative work environments present challenges to one-on-one mentorship. This has led to new types of mentorship models between any number of peers with either fixed or shifting mentor roles [47] or focused around different sociotechnical structures, such as groups or friend lists [3]. Research has started to address the challenges of designing for computer-enabled mentorship [121], such as issues of scale when there are many newcomers but relatively few experts [122]. Some have argued that, through coordinated peer feedback, online communities can enable *distributed mentorship* for developing skills and receiving emotional support from a large number of people, such as peer reviews in online fanfiction communities [19].

Finally, beyond artifacts that can be produced online, such as software or writing, online social networks provide opportunities for practitioners to seek mentorship from experts across the globe. For example, researchers have observed how Brazilian Jiu Jitsu practitioners used YouTube and other online networks to share practices and learn new martial arts techniques [102] and schoolteachers used online communities for professional development [46], creating virtual or online CoPs [29]. Similar tools for mentorship at a distance may be useful in the isolated work context of HCWs.

2.1.4 Facilitating Peer Review and Standards of Practice. Besides simply teaching newcomers, CoPs also create and maintain standards for what is best practice. These standards apply to all members and are propagated and enforced through processes such as peer review and feedback by punishing low effort and rewarding high effort [45]. Researchers have studied how peer review can improve the quality of co-produced work, such as the accuracy of crowdsourced transcription tasks [39], online databases [26], and co-written documents [57].

Beyond quality of outputs, peers can also improve the members' practices and processes of production through feedback to the original contributor. Computer-mediated peer feedback systems have been built to help users learn better practice in a variety of contexts, such as visual designers [68], students giving presentations [101], and learning to write in a second language [119]. These systems enable users to get feedback with less burden on an instructor [101, 122] and can connect

newcomers to experts that might not otherwise be available [68]. Users can also learn to improve their own practice through providing feedback to peers [123].

Researchers have also examined how the design of feedback systems can increase their effects, by reducing the frustration of peers receiving feedback [78], providing tools to create more informed feedback [85], and encouraging more users to provide feedback [84]. Applying this research to the HCW context might help workers improve their skills and could spark dialogue on proper practice that allows HCWs to more explicitly define standards of practice that they agree with.

2.1.5 Influencing the Experience of Work and Facilitating Safe Spaces. CoPs are important in defining the experience of work and creating supportive environments. Because negative perceptions of the supportiveness of the surrounding community can affect perceptions of a platform's helpfulness and reduce usage [98], online communities may attempt to reduce conflict, such as the policy enforcement work observed among Wikipedia contributors [58].

In computer-mediated settings, research has studied how technology can make the experience of work more emotionally supportive. For example, instant messaging can help to maintain inter-personal relationships that support emotional well-being and motivation [111] by creating a sense of social presence, respectful exchanges, and statements that build group cohesion [4].

Outside of the contexts of work or education, some research has focused on digital safe spaces [77]. *Safe spaces* are designed to enable marginalized communities to congregate and share experiences without fear of judgment or reprisal. Social networking sites can serve this role by enabling members to access emotional support from peers, promoting a sense of belonging, creating an environment where members feel encouraged to express and explore their identity [14, 67, 74], and providing an empathetic audience for sharing common experiences and concerns [25]. This may be especially valuable for people from isolated and marginalized groups, such as HCWs, and allow them to maintain and legitimize themselves in networked counterpublics [35, 52].

Finally, supportive environments can also contribute to worker effectiveness. For example, collaborative digital diaries and online knowledge portals can provide sites for coordinating daily activities and discussing persistent problems in ways that improve productivity [60, 113]. As multiple HCWs may need to coordinate work for a single patient, similar tools may be helpful for making the performance of their work easier.

2.2 Healthcare and the Home Care Context

As demonstrated by Section 2.1, the potential definition of peer support is exceedingly broad and suggests a variety of ways that technology could be inserted into the workplace to foster it. However, not all these forms of peer support may be valuable in the home care context, where care is provided in patients' own homes.

In addition to medically-oriented tasks, such as taking vital signs, monitoring patients' status and medications, and managing appointments, HCWs often assist with daily activities and support for patients' mental and emotional well-being [87, 91]. And unlike traditional clinicians, HCWs can serve the same patient for extended periods of time, often many hours on multiple days of the week, for years. Thus, HCWs can build uniquely deep relationships with patients. In many professional settings, communities of practice are are thought to grow and evolve organically through shared physical contact and routines. However, HCWs face different challenges, including geographical isolation, invisibility of their work, and deeper client or patient relationships, that may make CoPs less likely to form on their own. As such, there is a need to examine the extent that CoPs, and peer support more broadly, can be facilitated by CMC technologies [33].

In this paper, we focus on HCWs in New York City. Although home care is increasingly used to manage long-term health conditions [53, 104], HCWs in the US tend to come from marginalized

backgrounds [7] and feel poorly supported by other healthcare professionals and healthcare infrastructure [105]. In New York City, these challenges were highlighted during the COVID-19 pandemic which significantly impacted HCWs [106]. Our study also took place during the pandemic, which influenced our discussions with participants.

Some research in health care ICTs have directly addressed home care [15]. The ComputerLink project was a decision-support system designed to improve HCWs' confidence and included peer communication features (e.g., forum, mail, Q&A board) [16, 21]. Bossen et al. tested a tablet-based diary for tracking patient care that allowed HCWs and family members to share information about care tasks [11]. Other researchers have examined how technology design influences the emotional stresses [24] and respect of HCWs [81] and the politics between different parties in home care [112]. In our context, many HCWs also use technology tools to conduct their work [42, 97].

Beyond HCWs themselves, technology-enabled professional support has been studied for rural medicine and traditional clinicians [75] or in supporting the learning of community health workers [120] and other populations of practitioners in the Global South [88]. Peer support has been commonly applied for patients and family members coping with long term medical conditions [82], and researchers have considered the implications of designing for patient-centric peer support [55]. Family and friends provide informal care, and past work has also focused on designing for their informational and support needs [99, 109].

Finally, a lot of research has been done in computer-supported health in the home, chronic, elderly, or long-term care contexts [5, 20, 22]. CSCW research has broadly engaged with health care due to the increasing use of ICTs in health work and modern healthcare requiring coordination between many types of practitioners at different institutions [32].

We contribute to this literature by providing an examination of the role of peer support among home care professionals. Because HCWs are an unique set of isolated workers performing highly relational labor, we believe our research creates insights into how technology influences exploitation of distributed workforces, collaboration in emotional labor, and sharing of tacit knowledge.

3 METHODOLOGY

In this section we discuss the design and implementation of our study, which we conducted in partnership with 1199SEIU United Healthcare Workers East, the largest healthcare labor union representing most HCWs in the New York metropolitan area. 1199SEIU assisted in recruitment, logistics, and reviewing the materials and design of our study.

3.1 Study Design

To examine the forms of peer support relevant to HCWs, we engaged with HCWs using a paneled discussion approach. We recruited HCWs to recurring, weekly focus group sessions over the course of six weeks. Participants were encouraged to attend as many sessions as they were able and interacted with the same participants throughout the course of the study. While all sessions discussed concepts of peer support in some fashion, each week covered a different topic and purpose. The first and last sessions served as introduction and conclusion to the study, while the four intermediate sessions focused on different aspects of peer support and uses of technology.

A panel design was chosen for three reasons. Firstly, we could not explore all aspects of peer support in the span of a single focus group discussion. Our design enabled us to discuss peer support in more specific terms throughout the study period and minimized repeated material. Secondly, we wanted our participants to have the context of prior discussions so that we could contrast different needs and discuss the relative priority and challenges of each of them. Finally, because HCWs do not have frequent opportunities to interact with each other in their normal work routine, we
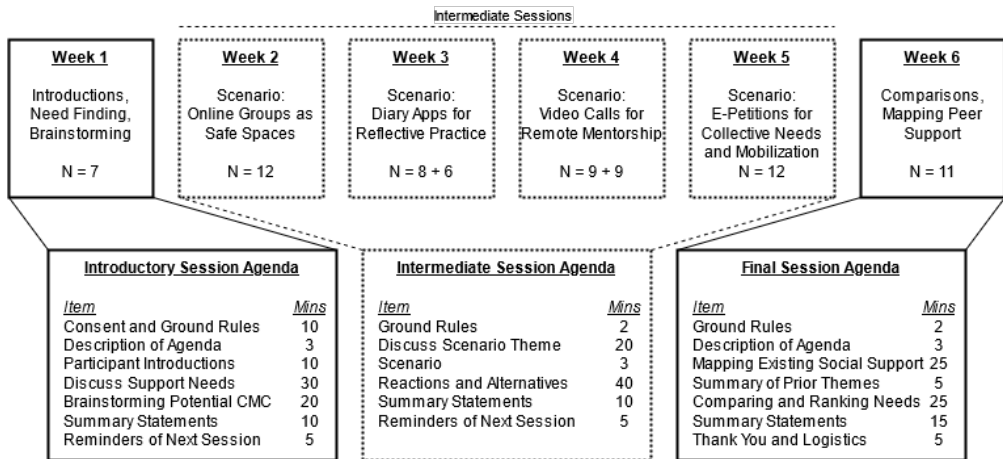
Fig. 1. Study overview, session agendas, and participation per session. We had unexpectedly high participation and ran two sessions on the same topic in weeks 3 and 4. Logistical barriers prevented this in later weeks.

wanted to treat the focus groups themselves as a research site to observe how HCWs might use a consistent shared and virtual space to provide each other support.

As the study occurred during the COVID-19 pandemic, all focus groups were held remotely via audio and video conferencing. HCWs participated in the sessions using Zoom [124], a conferencing platform. Participants could either use the Zoom app or dial in via a basic telephone line. During recruitment, recruiters worked with participants to familiarize them with the conferencing tool. Figure 1 shows the study design, and we now describe the contents of the sessions in detail.

3.2 Session Materials and Procedure

In the first week's session, we introduced the purpose of the study and reviewed the consent process. Because participants would see each other multiple times, we did a round of introductions and discussed ground rules to begin to establish rapport between participants. In the introductory session, we asked HCWs to describe what the concept of peer support meant to them, where the greatest value of having peer support was in their work, and their existing experiences with peer support. We also explored their familiarity with different types of CMC and brainstormed ways that technology could be used to enable peer support in their professional environment. Sessions concluded with a round of summary statements, where participants could describe what they thought was most important about the week's discussion or what they would like to discuss further in future sessions. At the end, the moderator reminded participants of the time of the next session the following week. An overview of session agendas is included in Figure 1.

We drew from the introductory week to better tailor subsequent sessions for more specific needs and themes that could be explored in detail. In preparation for the study, we wrote six different potential scripts for the four intermediate sessions, each focusing on a different aspect of peer support as described in Section 2.1. These were constructed with feedback from union staff at 1199SEIU, who have in-depth familiarity with the home care context. After the initial session, we further refined the scripts and wrote an additional script.

Based on our introductory discussion, we chose the four most relevant scripts to use in our second through fourth week. The chosen scripts drew inspiration from examples of technology-enabled peer support in past research, such as online safe spaces [25], Q&A forums [94], remote mentorship

[75], and e-petitions [54]. To further illustrate these aspects of peer support and prompt discussion, each intermediate week also included a short hypothetical scenario describing how HCWs might interact with a technology designed to foster peer support per the week's theme.

These scenarios were short skits written from the viewpoint of fictional HCWs and illustrated hypothetical computer-mediated interactions. These scenarios created imaginaries for HCWs that could be assessed and critiqued to identify potential breakdowns [8] and were acted out and prerecorded with 1199SEIU staff. As many participants dialed in via basic phone line, all materials were designed to work using audio only. The exact scenarios are provided in Appendix A.

Each intermediate session started with a brief review of the ground rules and an introduction of the week's theme. Participants were then asked to broadly discuss their experiences and attitudes. Then, the 2-3 minute, voice-acted, and pre-recorded scenario was played. Participants were asked a series of follow-up questions to gauge their reactions, focusing on applicability, feasibility, values, and sociotechnical challenges. Participants were also asked to imagine alternative conceptions or scenarios based on the week's theme. To ensure all participants had an opportunity to speak, at the end of the session, we asked each participant to give a summary of their thoughts.

In our final session, the moderator started by explaining the agenda. We began with an activity inspired by asset-based community development [71]. Participants were asked to think of the people that they currently turn to for support in their work and describe how they met their supporters and the forms of support received. The moderator then gave a short summary of the scenarios and themes discussed in prior weeks. We asked participants to reflect on their experiences in the study by comparing the intermediate sessions, the aspects of peer support discussed, and the scenarios that they observed. Finally, the moderator invited closing thoughts and thanked the participants.

3.3 Recruitment and Participants

We used purposeful sampling to recruit HCWs for our study, focusing on representing a variety of age and experience levels with a wide breadth of agencies in New York City. To schedule our focus groups to be as sensitive to work schedules as possible, we asked participants to describe their availability during recruitment. Finally, because the study was to be conducted remotely, we limited participation to those who had access to a device on which to call into the sessions.

Recruitment was conducted over the phone with the help of a staff member from 1199SEIU, and in total about 90 potential participants were contacted. In addition, midway through the study period, one participant decided to join from word of mouth through an acquaintance in the study. In total, our study had 18 unique participants whom, at the time, worked for 12 different agencies.

Table 1 provides participants' demographic details. The median age of the sample was 54, and 11 participants had over 10 years experience working in home care. Four participants had immigrated to the US within the last 10 years, while the others had lived in the country at least that long. There were no male or non-Hispanic, white participants, which was consistent with the demographics of this workforce in New York City, which was heavily female dominated, older, and predominantly ethnic and racial minorities [105].

3.4 Ethics and Participant Safety

Before their first session, participants were sent an online consent form through email, and recruiting staff followed up to discuss and fill the consent form. These forms described the purpose of the study, some of the topics that would be discussed, as well as the voluntary and confidential nature of participation. Participants all consented to the sessions being audio-recorded.

During the initial session and for any session that had new participants, the moderator also gave a short description of ground rules and framed the focus groups as a safe space. The moderator

Table 1. Participant characteristics and demographic information. All participants were women.

Participant #	Age	Race & Ethnicity	Education	Years Experience
1	50s	Hispanic/Latinx	Some College	20+
2	60+	Black	College Degree	20+
3	60+	Hispanic/Latinx	Some College	20+
4	20s	White Hispanic/Latinx	High School/GED	1-5
5	60+	Black	Some College	6-10
6	50s	Black	Some College	6-10
7	40s	Black Hispanic/Latinx	No Diploma/Degree	11-15
8	30s	Hispanic/Latinx	College Degree	11-15
9	30s	Black	Some College	6-10
10	50s	Black	High School/GED	6-10
11	60+	Black	Some College	20+
12	50s	Black	No Diploma/Degree	1-5
13	50s	Black Hispanic/Latinx	College Degree	11-15
14	20s	Hispanic/Latinx	High School/GED	1-5
15	50s	Black	High School/GED	16-20
16	50s	Hispanic/Latinx	College Degree	11-15
17	60+	Black	No Diploma/Degree	16-20
18	60+	Hispanic/Latinx	College Degree	16-20

described the commitment of the researchers that all published details would be anonymized and asked participants to not share any of the discussions that were held in the group.

Since the study occurred during the COVID-19 pandemic in 2020, and HCWs are healthcare workers who worked with populations vulnerable to the disease, the study was conducted remotely, including recruitment and consent. Focus groups were held via video or voice conferencing.

Participants were compensated $25 for each session they attended, for a maximum of $150. All procedures were discussed in advance with our community partners at 1199SEIU and IRB approved.

3.5 Data Collection and Analysis

Focus group discussions were recorded and professionally transcribed. Discussions were held with a moderator and a note-taker who also performed a retrospective after each session to highlight interesting topics and themes. Retrospectives were recorded in the session notes.

Qualitative analysis was conducted using MAXQDA [72]. Two coders engaged in open coding with a focus on our research questions, meeting regularly to discuss the codes. Existing codes were modified, merged, and renamed as additional transcripts that were coded. Codes that were previously too large and vague were also selectively re-coded to better characterize the data.

Using a thematic analysis approach [13], we then examined the codes and related codes to each other in the formation of larger concepts and narratives from the data. We reread coded segments within related codes and wrote memos to further refine themes and validate our understanding of the data. This approach allowed different concepts and themes around peer support to emerge from our dataset. These themes and their memos form the basis of our findings.

4 FINDINGS

We found that HCWs participated in existing mentorship programs that helped address on-the-job training needs of newcomers. Peer support between HCWs also helped workers perform the emotional labor of home care work and supported the strategic framing of the profession as skilled and essential. Finally, we describe challenges of power and technology adoption and their implications designing technology-enabled peer support.

4.1 Existing Mentorship Programs for Peer Support

One of the most direct and apparent ways HCWs supported each other was through formal mentorship programs. Some of our participants had experiences with mentorship programs which were offered through agencies and described a typical agency-run mentorship program as lasting 90 days to acclimatize newcomers to the home care profession. Mentors connected with mentees through scheduled calls up to multiple times a week, and some mentors also opted to make themselves available through SMS or WhatsApp to offer advice as needed. Participants described this as helpful as it offered mentees a venue for addressing immediate concerns.

Formal programs were funded by agencies and paid mentors for their time to call mentees. Such programs required mentors to report when they met with mentees, and all participants were required to provide regular feedback on the program. We discuss the value of these programs, the significance of mentorship to both mentors and mentees, and how these programs, though limited, were one of the few opportunities for HCWs to meet and interact with peers.

4.1.1 Mentors Address Newcomer Needs. Mentorship programs were generally designed to help newcomers transition. The first day on the job for a HCW did not allow for a slow learning curve. Recounting their own experiences as newcomers, our participants remembered feeling nervous, uncertain with how to perform aspects of care, and overwhelmed as they acclimatized to the patient's environment and learned about their condition and routine.

Mentors provided a degree of informal on-the-job training. While HCWs receive onboarding training, this may not be specific to patient contexts, and newcomers may forget particulars. One participant described frequently calling her mentor for support as she had trouble working complex machinery. Another described how newcomers often lacked many skills, from critical tasks to more perfunctory aspects of home care work, such as how to clock in and receive their pay.

Participants who were mentors also emphasized that an important part of their roles was to transmit norms around acceptable behavior and practice to newcomers. New HCWs found themselves in particularly vulnerable positions where they could not resist unreasonable patient demands because of both a lack of context for what constituted reasonable work and inexperience with approaches to refuse politely. Mentors provided perspective to help newcomers understand the scope of their work and encouragement and suggestions for how to approach demanding patients. This is described in more detail in Sections 4.2.3 and 4.3.4.

Mentors were also often more available and responded more quickly than HCWs' managers, or *coordinators*, and could help newcomers resolve their concerns in real-time. Even when coordinators could be reached, many of our participants considered coordinators to be unable to offer effective solutions to issues faced by HCWs due to a lack of practical experience:

> *If you had somebody, a mentor, to call and say, "Hey, I'm in this case, this situation, have you ever experienced that?" They can say, "Oh yes. I had a case like that. Just don't worry. Do whatever, whatever." And then that'll probably help you more than you sitting around waiting for the coordinator to get back to you.* (P9)

4.1.2 Benefits to Mentors. Mentees were not the only ones to benefit from involvement in a mentorship program. Our participants who were mentors described the experience as gratifying and related instances where they were thanked by their mentees. In addition to direct appreciation, mentorship also empowered mentors to develop their network of contacts, with increased access to information, coordinators, and agency management, which made mentors more central and able to serve as a clearinghouse for resolving issues. Being a mentor was also a form of social capital and prestige that located an HCW as a master of their practice.

Participants also described being a mentor as an opportunity to learn and develop interpersonal skills. One participant liked how her role as a mentor allowed her to interact with peers from diverse backgrounds. Another participating mentor reported that mentoring helped her develop her ability as an active listener. Finally, some formal mentorship programs compensated HCWs for acting as mentors, such as providing additional stipend and a laptop to help keep track of mentees.

4.1.3 Limited Opportunities to Meet Other HCWs. While participants found them valuable, mentorship programs were not widespread. About half of participants did not have a mentorship program offered by their agency. Beyond mentorship, HCWs described having few opportunities to connect with peers and being constrained by their isolated work environments.

Training was one of the few places to meet other HCWs. HCWs in our study were typically required to attend *in-service training* at their agencies two to three times a year, as a form of continuing medical education. These training sessions, and other professional development courses offered by 1199SEIU, provided a rare opportunity to interact with peers:

> *The only time I meet other [HCWs] is during in-service. I'm just sitting in the classroom for hours together. You kind of start making those conversations, and you learn that you have a lot of common grievances when it comes to the workplace, and that is kind of how you will start that friendship.* (P8)

However, in-services trainings were infrequent, which required HCWs to actively follow up to maintain those relationships. Furthermore, participants described how over time these trainings were reduced or transitioned online, preventing them from being social spaces.

Other informal settings where HCWs interacted with peers include church gatherings, education unrelated to home care, or public settings. One participant described how the medical uniforms worn by HCWs allowed her to identify and strike up conversations with other workers while waiting for public transportation. Finally, participants described introducing friends to the home care field and thus had existing relationships with a peer. Unlike other workplaces where employees have access to each other, social connectivity at work for HCWs depended on workers being able to identify and actively seek out HCWs, requiring more maintenance work. Mentorship programs remained one the few venues available for HCWs to meaningfully connect with peers.

4.2 Emotional Labor in Home Care and the Role of Peer Support

Mentors were able to support mentees during their stressful and uncertain first few months and provide advice for interacting with patients. These forms of peer support were not just valuable to newcomers but featured prominently in HCWs' interactions with peers of all experience levels. We now describe the types of *emotional labor* [37, 44, 48] that HCWs performed and the ways that peers aided each other in collaborating on or creating strategies for conducting this labor.

4.2.1 HCWs Perform Emotional Labor. HCWs faced socially and emotionally challenging situations in patients' homes. Patients could be distrustful of HCWs and become emotionally or physically taxing or abusive. One participant described being struck by a patient, while others recounted instances of rude and disrespectful patients and families who caused emotional distress. Patients could also get angry and object to part of the HCWs' duties:

> *One of my patients falls constantly and every time they come to get him, he refuse.... "Don't call your agency. Don't do this, don't do that." I say, "Calm down.... This is a part of my job to report that you fell. You can call your doctor and let them know you fell as well." "Oh, I can?" So it gives them a little sense of independence.... So I try and engage them as much as possible because they get very mad when I have to report this.* (P2)

Despite these challenges, HCWs were required to regulate their emotions, act in a professional manner, and provide empathetic care. As described above, HCWs had to find ways to frame their duties—whether reporting falls, or requiring patients to take their medicine, eat, bathe, or exercise—in engaging and persuasive ways to obtain patient cooperation. The effort to meet these requirements constituted the emotional labor for HCWs.

Because HCWs were in contact with patients much more than a traditional physician, they often developed deeper relationships with their patients. One participant described experiencing depression since the recent passing of two of her long-term clients. 1199SEIU recently instituted a new training program focused around grief and loss due to such experiences. Because of the inherent risk and responsibility of home care, participants also described situations where they were fearful of doing something wrong and potentially harming the patient.

These challenges were compounded by complex social situations where HCWs were often required to coordinate care with family members who were involved in patients' lives. HCWs also had to build working relationships of trust with their patients, who may resent feeling a loss of control or independence by allowing an HCW into their home. Several participants described how some patients could be suspicious or hostile towards HCWs actions, even when those actions were considered good practice, as described further in Section 4.4.2.

Considering these challenges, our participants described the importance of empathy to providing quality care. Participants described how part of being a professional HCW was to be passionate about the work in order to bear the emotional burdens and react calmly and with self-control.

4.2.2   Peers Support Each Others' Emotional Regulation. With few avenues to share about their work, participants often leaned on peers for emotional support and to help them perform emotional regulation. *Venting*, the ability to talk about issues to a peer who would listen and make you feel heard, was described by all participants as beneficial for stress levels. Participants with experience being mentors described the importance of being active and empathetic listeners, and one explained how having a peer listen to their issues validated their experiences and emotions:

> It's just something that you're venting what you're feeling at that point in time, to have a second opinion, to give you support, to make you feel like what you're doing is valid. (P7)

While listening to peers vent and providing reassurances and sympathy, HCWs also encouraged their peers to calm down and relax. HCWs urged peers to use techniques such as slow breathing and counting to address immediate anxiety and improve their affective state. Some participants described calling peers to seek someone to help them calm down. By helping each other regulate their emotions, HCWs were able to collaboratively perform the emotional labor of home care work:

> If you're upset, if you're frustrated, I can tell you, "It's not going to do nothing. Just calm down. Take a deep breath, and then think about what you're going to do tomorrow." (P12)

4.2.3   Peers Share Advice and Techniques for Handling Stressful Social Situations. Through peers, HCWs had access to advice on how to address social problems with patients and families. Sharing this advice constituted a form of peer support aimed at refining HCWs' skill at the emotional labor these workers performed. Participants described experiences where they either gave or received such advice. When an example situation was raised during the focus group, HCWs were quick to suggest different ways to approach the issue to minimize conflict. Example techniques provided by participants included involving patients in decision-making for instrumental activities, such as tasting food for seasoning, or narrating your process as you work.

Generally, these strategies emphasized good communication between HCWs and their patients. Several participants described how patience was crucial to avoid upsetting patients. Participants emphasized how important it was for peers to share techniques to address social conflicts within

the home. Interpersonal skills were an important part of the tacit knowledge that HCWs learned and maintained to perform their jobs successfully, especially in positions of vulnerability:

> *The best to hear is good communication. If there is good communication, there is always mutual understanding between you and the client, and also to exercise your patience because they always have the upper hand. So you being the aide, you have to come down with a good approach or attitude towards whatever happens.* (P10)

4.2.4 Peers Provide Effective Emotional Support Due to Shared Experience. Over other parties, participants preferred venting and discussing their emotional labor with peers due to shared experiences. In describing why a hypothetical HCW would seek support from peers, one participant highlighted the potential for peers to have similar experiences, which could make encouragement and advice more relevant and effective:

> *I think [the HCW] was very smart because she looked for help in the right place of people who might understand her. Because the practitioner did go through also the experience, they have experience in the same thing in some moment, and they are better prepared to give support and some kind of advice too.* (P18)

While HCWs worked with coordinators to provide care, their role was more managerial, and HCWs did not perceive them to be the primary source of emotional support. Our participants had negative experiences with unsupportive agency coordinators. HCWs often felt that coordinators were not empathetic to their concerns and didn't understand the challenges they faced on the job.

The role of peers in providing emotional support may be especially pertinent for issues related to a patient shared between multiple HCWs. One participant described how, because of patient privacy restrictions, she could not discuss her work stresses with family or friends.

4.3 Strategic Framing of Home Care as Skilled Work and the Role of Peers

As described in Section 4.2.3, techniques for minimizing and performing emotional labor were a part of HCWs' tacit knowledge. Despite this, our participants felt that they were often not respected as skilled workers and healthcare professionals. This included respect from a variety of sources, from other medical professionals to the general public and the patients they serve. In response to this, HCWs engaged in several actions targeted at peers to strategically define the scope of their work and promote the perception of it as a skilled and specialized practice.

4.3.1 HCWs Are Not Recognized as Essential and Medical Professionals. HCWs aid their patients by performing medical tasks such as regularly monitoring patient vitals, operating equipment, making appointments, and summarizing and relaying information to doctors to help make informed decisions. While HCWs delivered this care, they felt that public respect and recognition for the specialized and essential nature of their work was lacking. Instead, they felt that public awareness of home care work focused on their peripheral functions, such as housekeeping work:

> *And you have all the knowledge about certain things: taking the pulse, a temperature, other things, setting up the nebulizers, doing this, and yeah. We do all those things, but it's like that section is never recognized. Only the cleaning, and the cooking, and going here and there is all that people think about us.* (P10)

HCWs felt undervalued compared to the rest of the health services supply chain and struggled to be recognized as essential workers by the public. During the COVID-19 pandemic, as popular media honored the role of doctors, nurses, workers in grocery stores or restaurants, HCWs were left out and felt overlooked and further invisibilized.

These perceptions may influence how patients and family members treat HCWs. Though patients and families were supposed to be given information on what they can expect from a HCW, in

reality, there was often lax adherence to HCWs' scope of practice. Participants described many situations where they felt patients didn't recognize their expertise and instead asked them to do housework. HCWs thus felt underutilized and frustrated that patients didn't understand how HCWs contributed to their well-being.

Disappointingly, some of these misconceptions were perpetuated by other healthcare professionals who may also misunderstand the role of HCWs. Doctors and nurses may misassign patients who don't need HCWs or miss out on assigning HCWs because they do not consider HCWs as part of the extended care team. One participant suggested training medical providers to provide more accurate information on the role of HCWs in order to clear up misconceptions with patients.

HCWs also felt like they were not treated as healthcare professionals by other practitioners that they worked with. HCWs were disappointed that nurses sometimes ignored the input HCWs could provide when checking the patients' condition. Most participants had poor experiences with coordinators, who talked down to HCWs or tried to manipulate them to stay with abusive patients or disregarded their preferences for work hours and environments.

In response, HCWs engaged in activities to strategically contest the perception of home care work as unskilled. This occurred in three ways: curating and expanding HCWs' expertise, setting norms on professional behavior, and setting boundaries on the scope of work. By impacting the practice of peers and advocating on their behalf, these activities constituted a form of peer support that was rallied to the contested definition of home care work.

4.3.2   Peers Cultivate Collective Expertise through Teaching and Advocacy. HCWs saw cultivating their expertise as a way to demonstrate that home care work is a skilled practice. This is partly covered in previous sections, which describe how HCWs mentored newcomers on daily practice and how peers helped minimize emotional labor by sharing techniques for resolving stressful situations.

Beyond these two situations, HCWs highlighted the practical knowledge they gained on the job, such as intimate understanding of patients' conditions, tacit skills for highly embodied activities (e.g., moving patients safely), and tacit skills for highly interpersonal activities (e.g., being able to anticipate and interpret patients' needs). One HCW described how a patient's needs could be highly contextual and not necessarily explicitly provided by the patient, and that a good HCW would be able to identify and attend to those needs:

> *Every person has different needs . . . only a professional understand that probably today, I need to sit and only converse. I need to sit to make sure that when she gets up, she don't fall. I need to sit and look around while she eating her food, to turn down the stove.* (P13)

Because of the wide variety of situations that HCWs could find themselves in, all of our participants described the importance of learning from each others' experiences. Participants who had mentor groups on WhatsApp used these to ask each other questions, while some of our participants described calling their friends or discussing issues with coworkers during shift changes. In cases where HCWs shared a patient, physical practices may also be demonstrated during times of handoff. One participant described an example where she and three other HCWs on the same case experimented and shared tactics to care for a patient that became sick:

> *We developed some tricks to help this patient get well by how we try to feed her. Because she didn't want to eat, but we tried to give her soup. We strain the soup, we put straw in it . . . We do all those things. Anybody develop a different style, then we share, and we put this food to this lady for about three or four weeks. She was able to get healthy.* (P5)

Finally, participants advocated for expanding the expertise of HCWs through continued training. This included advocating for more in-service and optional training to equip HCWs with more

knowledge and skills, and reinforce existing knowledge. HCWs, especially those who were mentors, encouraged continued education as a means to expand the scope of home care work or further HCWs' careers beyond home care. In general, participants felt that HCWs could and should handle additional responsibilities and that training would give them the confidence to do so.

4.3.3 Peers Set Norms on Professionalism. However, our participants also recognized that not all knowledge shared by HCWs was correct. All of our participants felt that there were a lot of bad practices conducted by other workers, enabled by infrequent and ineffective supervision, lack of communication between HCWs, or simply inexperience with less common medical conditions. Participants felt that these incorrect practices contributed to a perception of HCWs as unprofessional.

To challenge this, HCWs attempted to set and enforce norms on proper professional practice. They emphasized the importance of having high standards of care, including keeping patients clean, being punctual, following care policies, and reporting on patients' health. HCWs who were mentors described chastising mentees to encourage high standards of practice or professionalism.

Participants also felt it was important for HCWs to present themselves professionally in patient environments. Some participants also described how wearing a uniform publicly signaled their status as a healthcare worker and could contribute to their safety in dangerous neighborhoods. Others described wearing the uniform as a way to create a positive impression with patients:

> *If you come, and you dress like a comedian, [patients'] respect can be diminished. So, we need to show our professionalism in the way we work, the way we dress.* (P5)

4.3.4 Peers Encourage Boundary Setting on Scope of Practice. HCWs frequently faced problems with patients who wanted workers to perform tasks that were beyond the scope of practice. This was exacerbated by "overachieving" peers that accepted these requests to please patients but could produce and perpetuate unwelcome expectations for subsequent workers. In response to this, HCWs encouraged each other to reject unreasonable requests, report issues to formal channels for redress, and to set consistent standards on what would be appropriate to expect of a HCW.

This encouragement was particularly evident when there was a structured relationship between two HCWs, such as with a mentor and mentee, but also happened between experienced HCWs in less formal settings. One participant described how, without peers consistently enforcing boundaries, HCWs wouldn't be able to address violations of their scope of practice:

> *Don't be afraid to complain because when we complain about something in our job, [the agency] know[s] that something is wrong; it has to be fixed.* (P4)

4.4 Marginalization Affects Conduct of Peer Support

Despite collective efforts of encouragement and cultivating norms, HCWs had to work within the constraints of power that marginalized them relative to both patients and other healthcare professionals. In this section we describe the effects of marginalization in more detail, how this affected HCWs' priorities for mobilization, and how this mobilization should be conducted.

4.4.1 Exploitation and Lack of Power. As the lowest rung in the healthcare hierarchy, HCWs were pressured into doing extra work by both patients and coordinators. HCWs described how some patients would interview them and refuse service if they were not willing to cook certain dishes or do out-of-scope cleaning tasks. Because a patient may have multiple HCWs, one participant described how family members pressured each worker to do extra tasks, resulting in an accumulation of exploited labor. Coordinators often encouraged HCWs to do out-of-scope services and stay with exploitative patients, emphasizing hours the HCW could lose by changing cases.

At the same time, HCWs were aware that they would be held responsible for any negative consequences of deviation from policy, such as leaving a patient alone while being sent to pick up groceries in violation of the care plan. Agencies encouraged HCWs to report any such occurrences, but attempting to reinforce policy by raising issues with coordinators or patients often comes with its own repercussions in the form of loss of hours and cases:

> *A lot of agencies stress report, report, report, but here she is reporting, and you're threatening her as far as removing her from the case. So it's like, you tell me to report, and when I do report, you threaten to take my job, so I'm not sure what you can do to better that.* (P9)

In this way, HCWs are stuck between poor choices of either performing extra work beyond their scope of practice or losing hours or the job. One participant described her choice to report and risk losing hours, but she also understood a peer in her situation might have acted differently:

> *But I just think, in case this happened to another co-worker, they don't do anything, they feel intimidated, they feel afraid, and they stop calling, stop complaining. The family, clients start taking advantage of her job.* (P3)

4.4.2 Chilling Effects on Information Sharing between Peers. The lack of power and HCWs' precarious socioeconomic positions had *chilling effects* on HCWs' willingness to share information with peers or the agency. In Sections 4.2.3 and 4.3.2, we described how HCWs shared techniques and skills for patient care. HCWs also shared information for handoff purposes to maintain awareness of a patient's health and important events or appointments made while in the care of a peer.

Despite the value of peer information sharing, patients could be hostile to this practice due to sensitivity around confidentiality. HCWs were well aware of HIPAA laws that protect the patient, and incorporated patient confidentiality into their practice, for example, by never referring to their patient's names in their notes. Despite this, participants described many patients being uncomfortable seeing HCWs write notes in a care diary and preferred to do their note-taking during breaks or on the bus to avoid these situations, though it meant extra work for them.

In addition to making it difficult for HCWs to record information for themselves, the potential disapproval of patients also influenced HCWs' decisions on how to share information with other workers during handoff. A couple of participants expressed that they would rather share information with their coworkers verbally instead of in a written record, and others described making sure they were not around patients who could listen in before asking their coworkers questions.

Recording information in shared case notes or reporting issues, especially through official channels, was especially dangerous if HCWs did work that was not in the care plan or outside of their scope of practice, as this exposed workers to potential negative consequences:

> *They're not going to put in what they're not supposed to do on that, because you have to follow the care plan. They're not going to put they picked up nobody's kid on no app.* (P7)

This environment of suspicion and potential retaliation silenced HCWs and invisibilized many of the concerns and policy violations they faced. This made it difficult to do their jobs as healthcare professionals and potentially impacted the quality of care that HCWs could provide. Participants also recognized that peers were unlikely to volunteer to discuss their complaints in public, which further reduced HCWs' power and made it difficult for them to protect their scope of practice:

> *A lot of people are afraid to sign things because of their name being put out there. That's one big thing that I felt. Like a lot have to get that fear out of their head: fear of losing their job, if they don't do this. Fear that if they speak up, they're going to get fired.* (P9)

4.4.3 Social Mobilization and Challenges. Participants saw solidarity as a way to support each other to reduce exploitation. This included large acts of collectivization, such as union participation

and marching for a higher wage and better benefits, but also smaller, individual acts, such as a willingness to stand up to or walk away from abusive cases, and encouraging peers to do the same.

Actively engaging the mediation processes provided by the union gave HCWs one of the few recourses for addressing uncaring coordinators or exploitative patients. By protecting the boundaries of their scope of practice, more formal structures of collective action served as extensions of less formal practices of peer support addressing the same goals.

However, participants described mobilization as difficult to achieve in their current environment. HCWs often declined to discuss their problems with the union because it was additional effort or a risk to their job. Participants recognized that union participation sometimes required sacrifice, particularly in time and travel costs. HCWs already had very busy schedules and may work multiple jobs, so making time and paying to travel to union events was often a difficult barrier to overcome.

4.4.4 Implications for Technology-Enabled Peer Support for HCWs. Participants identified different ways in which ICTs, specifically virtual meetings and e-petitions, could enable information sharing, collaboration, or mobilization for HCWs. First, these tools had a potential to increase participation by lowering the barriers of travel time and cost. Secondly, broader participation could mean additional input to identify common issues within the HCW population and broader awareness of these issues. One participant offered a more concrete solution and suggested that sending HCWs petitions via automated calls using interactive voice response systems:

> *What about making a phone call announcement? Like they give you options... [L]ike if you agree on something press one, press one or two, if you want something.* (P12)

Because HCWs worked in economically and politically precarious positions, deploying these tools could cause unintentional harm to HCWs. Participants discussed different ways to protect users and avoid harm. For example, while discussing the value of a technological aid that could provide advice in socially challenging situations, participants described the importance of advice that minimized risk to HCWs. They were particularly wary of the potential for technology to set undesirable precedents with patients such as non-adherence to the plan of care.

Limiting participation in online spaces designed for HCWs and the potential for users to be anonymous are other potential ways to protect HCWs. While inviting influential outsiders might enable HCWs to reach and engage potential allies with their problems, a closed membership might result in more honest discourse that better supports peers. Some participants argued for involving only those with past experience as HCWs to create an understanding and sympathetic environment:

> *If it's just between coworkers, then maybe they will be more prone to write exactly what's happening as opposed to being afraid of the agency seeing what they're writing.* (P9)

Participants were divided on the value of anonymity. In spaces sympathetic to the needs of HCWs, having names attached made for more personal and authentic interactions. However, in public forums, anonymity might make some HCWs feel more comfortable participating.

Finally, participants noted that writing case notes and records in an electronic diary instead of a physical one might lend a sense of officiality and impartiality that a HCW could then refer to and use to give themselves cover when discussing problems with coordinators, nurses, and doctors.

4.5 Existing Technology Adoption among HCWs is a Mixed Bag

To better understand how technology for peer support might be received by HCWs, we also asked participants to discuss their existing use of ICTs for home care work. We found that technology use was prevalent and embraced by agencies and unions. HCWs used video conferencing and mobile instant messaging apps to connect with peers, coworkers, union members, family and friends for

support in home care work and beyond. At the same time, ICT adoption and familiarity was very uneven and many concerns remained around the adoption of technology for peer support.

4.5.1 Existing Uses of Information Technology. Participants described familiarity with a wide variety of apps. Agencies used apps such as HHAeXchange, to offer and schedule on-demand and one-time patient cases [42], and Santrax, to verify HCWs visited patients and clock in [97]. 1199SEIU also provided a way for workers to sign up for notifications via SMS or phone calls about union events.

With the COVID-19 pandemic, trainings were increasingly held via video conferencing with Zoom. One participant described how an app provided by her agency had videos on how to perform tasks including and beyond what is covered through regular in-service training. One HCW described using YouTube to learn how to use a computer. Others used video conferencing to join community events such as online church service, and some HCWs mentioned that embracing technology resulted in cost savings due to reduced need to commute to different locations.

The distributed nature of their work meant that, even before the pandemic, HCWs predominantly connected through calls, text, or instant messages. Participants described using messaging platforms, such as WhatsApp or Facebook Messenger, and voice or video calls to connect with peers.

4.5.2 Concerns about Technologies for Peer Support. Participants were apprehensive about conducting peer support through a computer-mediated platform and the future role of ICTs in home care. They said that some HCWs might not be familiar with ICTs and would need training to make peer support accessible to them. A few participants expressed concern about online security, fraud, and identity theft. A lack of equipment and resources may also prevent adoption. Participants felt these challenges created headwinds to any technology-enabled peer support system:

> *Whatever that you decide, it's always a problem. You're going to hear "I don't have a computer, I don't have a smartphone, is they paying for my Internet? ... We're not computer savvy, we don't know how to use this, we don't know how to use that...." That's a given, that's going to be in everything.* (P7)

As this study was also conducted virtually, significant effort was made to ensure participants had access to a capable device, either their own or provided by the union, and training users in how to use it to connect to Zoom. Despite this, many participants still elected to connect via basic phone line. Some HCWs joined the sessions while commuting from their patients' house. For these participants, video-based participation over mobile internet connections may be less desirable.

Most participants preferred to interact with peers in-person. One participant described how her reliance on virtual interactions during the COVID-19 pandemic felt more isolating. Another believed that virtual interactions lacked honesty as individuals can turn away from the screen. In general, while HCWs today rely on a broad range of information technology to do their work, very few such technologies provide unequivocally positive experiences.

5 DISCUSSION

We discuss how our findings on the role of peer support among HCWs, and how the challenges these workers face, relate to concepts of exploitation in crowd work, research on emotional labor, and efforts to expose tacit and invisible knowledge through computer-mediated mentorship.

5.1 Peer Support in Platform Capitalism versus Distributed Labor

Our paper focused on HCWs, an isolated and distributed workforce. We found that HCWs have peer support needs that were similar to those served by CoPs in other domains, including mentorship, enforcing boundaries, shaping professional norms of practice, and mobilizing towards common goals. However, HCWs needs were only served in piecemeal and ad hoc ways as described in

Sections 4.1 and 4.3. To this end, we seek inspiration from how isolated workers in other contexts have sought to create communities via computer-mediated technologies.

A prominent example is in crowd work, where peer-to-peer workers sell their services through an online marketplace. These workers exist in systems of *platform capitalism* [89] which rarely include affordances for workers to interact and provide peer support. Crowd workers face similar problems of invisibilization and have turned to online websites, social networking apps, and forums to collectivize around common work-related interests [49, 69, 96].

One issue that these communities have tried to address is the surveillance and information asymmetries built into platform capitalism that favor the employer rather than the worker [49, 96]. However, surveillance, though perhaps easier to accomplish via a platform, is not exclusive to them. For example, technology-enabled surveillance has been used to create information asymmetries in other industries with isolated workers, such as long-haul trucking [65]. We see such surveillance in the HCW context with the use of electronic visit verification systems which monitor when a worker is with a patient and whether they perform certain activities in the care plan [97].

Beyond surveillance, platforms work to make themselves immune to risks that are borne by the workforce through policy and language [36] and rely on an excess of potential workers to treat them as replaceable. Thus, industries that require higher skilled labor or longer-term relationships, such as HCWs, are less likely to pursue the platform capitalism model [114]. Indeed, despite the existence of ad-hoc scheduling apps like HHAeXchange [42], our HCWs were formally employed by agencies, can have consistent schedules with the same patients, and are represented by a union. Thus, these HCWs likely had more job security than a crowd worker in a contractor position.

Despite this, we found that HCWs were subject to many of the same problems of unbalanced power relationships that made it difficult for crowd workers to mobilize around common interests. A common theme in our discussions was a fear of losing cases and hours. This fear and perception of being replaceable, regardless of actual job security, was a strong motivator for HCWs to perform labor that they would not have otherwise. This fear also made HCWs hesitant to share information with each other and other members of the care team, even when allowed by HIPAA restrictions, for fear of angering a suspicious patient. In other contexts, recording notes in electronic devices bolstered the legitimacy of a clinician [28], but it is questionable whether this would have the same effect when the power dynamic between the care worker and patient is reversed.

In considering the ethical and social challenges of crowd work, Kittur et al. explicitly left out what they called "offline crowd work" as these structures are not as scalable, and thus the potential for exploitation may be smaller [59]. We see offline crowd work as another way to describe distributed and remotely managed workforces such as HCWs. HCWs should not be excluded from the crowd work conversation because they are one of the largest medical workforces in the US [104] and experience similar treatment as *"exchangeable and untrustworthy, having low or static skill sets, and strong motivations to shirk"* [59].

Furthermore, we believe that HCWs' highly-relational work, where they may serve the same patient for years and build a deep relationship with them, leads to further challenges that other crowd workers do not experience. Far from being a reprieve from platform capitalism, the fact that HCWs were in long-term, subservient relationships with clients made it difficult for HCWs to engage in peer support by silencing information sharing.

Thus, it is difficult for peer support tools and programs designed in other contexts to be implemented for HCWs. In traditional clinical contexts, doctors and nurses are less threatened by an unequal power dynamic with their patients and have the advantage of physical co-location for seeking peer support and building CoPs. In other contexts that we traditionally think of crowd work, such as rideshare drivers and food delivery, workers are not embedded in long term relationships with their clients that can affect their interactions with each other.

Instead, our results on how HCWs use peer support to contest issues of unequal power and dominance in their workplace might similarly be applicable to other distributed labor contexts where workers are close to clients but isolated from each other. These might include domestic workers, extension workers, tutors, and social workers. Domestic workers, for example, may not meet professional peers if employed directly or through a platform. Extension workers and social workers may spend the vast majority of their time away from peers and engaging with clients.

Thus, these worker populations may also benefit from tools designed to empower HCWs. For example, in Section 4.4.4, we described the need for safe spaces to enable discussion free from agency or client repercussions, record-keeping to support worker narratives and provide cover for workers, and opportunities to interact with peers to set strategic norms around practice. However, recontextualizing these tools will require an understanding of the forms of dominance and power dynamics that affect worker populations in different contexts and what aspects of peer support these tools rely on to be effective.

5.2 CMCs for Collaborative Emotional Labor

As described in Section 4.2.1, the emotional labor of care work was a large part of HCWs' job. Hochschild divides emotional labor into two components: *surface acting*, where a worker controls their emotional expression despite mismatched felt emotions, and *deep acting*, where a worker puts effort into creating and feeling emotions to fulfill occupational expectations [44].

We saw both forms of emotional labor in our study. We see surface acting when HCWs provide empathetic, patient, and friendly care despite weathering abuses and frustrations from patients and families. Surface acting, due to the strain of emotional dissonance, is considered to have a particularly strong influence on worker well-being [48]. HCWs also perform deep acting due to their long-term relationships with patients, as many HCWs care deeply about their patients. While this avoids emotional dissonance, it leaves HCWs emotionally vulnerable when a patient dies.

In health care, clinicians engage in both generating empathetic emotions and acting empathetically in the absence of such emotions, and emotional labor is an important part of medicine [62]. Empathetic deep acting can result in more honest interactions with patients, higher patient satisfaction, and better job satisfaction [48, 62]. Empathy may be cultivated to improve medical practice [38], and training programs may be designed for empathy and related skills [10, 95].

Researchers have also discussed how crowd workers (e.g., rideshare drivers) perform emotional labor to provide a good experience for clients and are often held accountable for this labor by platform review systems [90]. This has led researchers to argue that emotional labor is a form of control enacted by the platform on its distributed workers [37]. HCWs are also evaluated on their work primarily via patient satisfaction. As HCWs interact with patients much more than clinicians, how well they perform emotional labor may play an even bigger role in patient satisfaction.

In our findings, we discuss how HCWs support each other by sharing the burden of emotional labor. Some researchers have argued for the concept of *interpersonal emotional regulation*, where one regulates their own emotions through social interactions such as venting, or seeks to regulate the emotions of a peer through cheering or calming statements [6, 80]. Because regulation can be made easier with social support, peers can help each other perform emotional labor [79].

We observed stories of similar interpersonal emotional regulation. As HCWs are a distributed workforce, they may represent an opportunity to design for computer-mediated and collaborative emotional labor. Such tools might include affordances to demonstrate active listening in online interactions, or finding someone who will validate and advise on emotional experiences, as described in Sections 4.2.2 and 4.2.3. This form of CSCW is distinct from more traditional forms of knowledge seeking and artifact co-production and may also be valuable in other contexts for isolated service

workers. By making it easier for workers to collaboratively perform and regulate emotions, such technologies may increase worker job satisfaction and client satisfaction with the work.

5.3 Exposing and Sharing High-Quality Tacit Knowledge in Communities

To gain recognition as skilled professionals, HCWs were concerned with how to grow knowledge in their community: by mentoring newcomers, teaching each other skills and practices, or participating in training. Situated learning, particularly via apprenticeship and sharing of tacit knowledge, are central parts of CoPs, and research has explored how computers can facilitate these forms of teaching in large-scale collaborative environments (see Sections 2.1.2 and 2.1.3). Similar tools may be relevant in home care, but we also saw challenges around knowledge quality and tacit knowledge.

For example, research on fanfiction writers has discussed how online communities can provide distributed mentorship for newcomers and help them develop skills via peer feedback [19, 31]. Research found that aggregating responses and interactions with multiple reviewers created more substantive feedback than individual reviewers and enabled members to identify broader themes that helped them develop as writers [31]. In our study, we saw how HCWs, both new and experienced, found suggestions from a knowledgeable peer helpful to resolve patient care concerns. Similarly, aggregating advice from HCWs may create distributed mentorship that improves home care practice.

However, more research is needed on how to identify quality advice. HCWs shared how peer advice may fall short when peers lack of relevant experience. HCWs were also concerned about spreading bad practices that reduce perceptions of professionalism. Thus, in distributed mentorship models, it will be important to both identify quality knowledge and provide ways to filter this knowledge and avoid teaching harmful practices. In addition, because HCWs' knowledge is often tacit and difficult to explain succinctly, it may be especially important to match a knowledge seeker to an appropriate expert to enable a longer-term learning relationship.

There is substantial literature on computer-mediated knowledge systems in medical domains, including the use of peer-generated content in wikis [12] or voice recordings used in training [115]. These may be applicable in home care contexts, and explicating and exposing the knowledge in the HCW profession might help to de-invisibilize the labor that HCWs perform. However, since our participants desired recognition and appreciation for HCWs' specialized knowledge and skills, care should be taken to avoid enabling the deskilling and automation of home care work, for example, through decision-support systems [16, 21] which might be deployed to remove control and knowledge from HCWs. Designing technology tools that acknowledge and respect their tacit knowledge and invisible work may better serve the interests of HCWs [108].

6 LIMITATIONS AND FUTURE WORK

Since our study was remote due to COVID-19, our participants may have had above average levels of technology expertise. Participants' affiliations with the 1199SEIU union may also mean they are more engaged in political issues facing HCWs and supporting other workers.

Our study was exploratory and only briefly touched on different aspects of peer support. We encourage further work in any of these aspects and others besides. There is also room for design work focused on tools for training or knowledge growth in home care. More consideration could be given to how peer support relates to mobilization and activism. The nature of home care work, as in-between crowd and traditional labor and in-between strong-tie CoPs and weak-tie *networks of practice* [18, 41], could provide a useful lens for interrogating those concepts.

Future work might examine the tensions and use of power within a CoP. For example, sanctioning a peer for poor practice may lead to a collective and strategic good, but may harm that peer and create conflict. The definition of best practices in a CoP is an example of the production of a

hegemonic understanding of home care which can push certain peers to the margins. Exploring who gets to define such practices may require an intersectional lens, as HCWs consist of a diverse mix of ethnic minorities and immigrant populations.

7 CONCLUSION

Though it has the potential to empower workers, peer support is broad and can be defined in many ways. We examined how HCWs in New York City conceptualized and valued peer support. We find that peer support helped HCWs perform some of the most demanding aspects of their jobs, including the emotional labor of care work and addressing the politics of professionalization. We considered how the power dynamics of home care contexts influence priorities and discussed design implications for tools to foster peer support for HCWs. Finally, we situated our results in broader discussions around crowd work, immaterial labor, and computer-mediated mentorship.

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A   SCENARIOS

A.1   Week 2: Online Groups as Safe Spaces

- **Narrator:** Debbie gives a sigh of relief as she gets out of the building. Today was a rough day. Her client, Mr. Nowak, can be picky and difficult, and today she got into an argument with him. He didn't like her cooking and said it was bland and tasteless. He made her cook it again and then made her reclean the kitchen!

- **Narrator:** Debbie fumed as she waited for the train. She really wanted to vent! Her husband would listen to her, but he wouldn't really understand. "Well, I like your food," he'd say, but Debbie had to make meals with low-salt for Mr. Nowak's heart condition. Her patient didn't really understand that she wasn't just there to cook and clean, she was there to look after his health!

- **Narrator:** Debbie glanced up at the board. Her train was 6 minutes away. She opened up her phone and went on Facebook. There's a private group she joined that is only for home care workers like her.

- **Narrator:** Debbie writes a short post venting about her day. She doesn't mention her client's name, but she talks about how her client made her redo his meal, breaking his care plan. She says she feels angry when he treats her like a maid!

- **Narrator:** Debbie submits her post before the train comes. The moderators will have to approve it before anyone can see it. They'll check it to make sure she didn't write anything inappropriate.

- **Narrator:** When Debbie gets off the train that night, she sees her post has been approved, and several people in the group have already given it a thumbs up.
- **Narrator:** Another person responded, "I feel this way too!"
- **Narrator:** Reading this makes Debbie feel a bit better as she walks home.

A.2 Week 3: Diary Apps for Reflective Practice

- **Narrator:** It's the middle of the afternoon on a Tuesday and Rylee's doing some minor cleaning in Mrs. Davis's kitchen when she hears her call.
- **Mrs. Davis:** Rylee! Go pick up Sam from school.
- **Narrator:** Sam is Mrs. Davis's grandson, and he's attending middle school nearby. It's only a 15 minute walk, but Rylee is hesitant to leave Mrs. Davis alone. Rylee comes out to the living room wiping her hands.
- **Rylee:** Mrs. Davis, I'm not supposed to do those kinds of things.
- **Narrator:** Mrs. Davis scowls.
- **Mrs. Davis:** Go on, you have to do what I tell you, and what are you doing otherwise anyway?
- **Narrator:** Rylee sighs. Sometimes it's not worth arguing with Mrs. Davis when she gets like that. Rylee gets her coat and gets ready to go outside.
- **Rylee:** I'll be back in 45 minutes, Mrs. Davis.
- **Narrator:** On the way over, Rylee's phone buzzes. Rylee pulls it out to check, and it turns out to be a reminder to put in a diary entry. Rylee has been using this new diary app that occasionally asks her what she's doing throughout the day. It asks her about her work, and at the end of the week, it gives the entries back to her so she can review and think about her work.
- **Rylee:** I guess I'll write about picking up Sam.
- **Narrator:** At the end of the week at home, the app prompts Rylee to review her diary entries from the week. There are notes about chores and pictures of meals that Rylee's cooked. There's a couple posts about her errands to pick up Sam.
- **Narrator:** The app asks Rylee some questions to help her think back on her work that week. "What is your biggest concern or challenge this week?" the app asks.
- **Rylee:** Mrs. Davis keeps asking me to do these errands that aren't in my job description. I don't mind doing a little cleaning here and there, but telling me to pick up her grandson isn't right!
- **Narrator:** The app asks her a follow up question to try to get Rylee to think about her problem. "Why is this a problem?" the app asks.
- **Rylee:** It's not really my job, and it feels disrespectful to me. I'm supposed to take care of Mrs. Davis's health. What if something happens to her while I'm gone?
- **Narrator:** The app asks her where the problem is and how she might solve it.
- **Rylee:** I could ask Mrs. Davis to not send me to pick up Sam, but she's always grumpy. I'm afraid I'll lose my job.
- **Narrator:** The app asks if there are other ways for Rylee to solve the problem.
- **Rylee:** Well, I guess the problem is that I have to be with Mrs. Davis. If I'm with Mrs. Davis, it would be okay. Maybe I could convince her to come with me while picking up Sam and make it into an outing. He only needs to be picked up on Tuesdays, and Mrs. Davis needs to get out at least once a week anyway.
- **Narrator:** "Who do you have to talk to and what should you say to them?" the app asks.
- **Rylee:** I have to tell Mrs. Davis that I can go with her to pick up her grandkids, but she can't be alone for her own health.

- **Narrator:** The diary entries are automatically deleted after a couple weeks for patient privacy, but Rylee can make separate reminders for herself. The app asks Rylee to make some notes about things she could try to solve her problem. They might not work, but at least Rylee feels like there's a way forward.

A.3 Week 4: Video Calls for Remote Mentorship

- **Narrator:** It's late in the evening on a Thursday, and Imani is at home. It's almost dinner time, but first, she needs to make a phone call. It's been almost 8 months since she became a home care worker. At the end of the onboarding training, her agency had offered her to have a mentor assigned to her. It seemed like a good way to build a stronger relationship with someone more experienced, so Imani had accepted.
- **Narrator:** Imani grabs her phone and clicks the icon she had saved earlier to start the video call. The call connects faster than she expected.
- **Imani:** Oh, hey, Sofia. Let me get somewhere quiet.
- **Narrator:** The screen shows a glimpse of a busy kitchen as Imani gets up from the dining table.
- **Sofia:** Hello, Imani. What cooking is your mom doing tonight?
- **Narrator:** Imani smiles as she describes the chicken and lentil stew that Mama's cooking in the kitchen. Sofia usually asks about her dinner. Imani thinks it's because Sofia's also a mom and cooks a lot, though Sofia's Columbian food is a lot different. Most of the time, this is how their calls go: talking about random things or sometimes complaining about their week. This week, though, something was worrying Imani that she wanted to bring up with Sofia.
- **Imani:** Actually, I have a question about this letter I got.
- **Narrator:** Imani grabs the letter she received from the agency and holds it up so the camera can see it.
- **Sofia:** Oh that, on the COVID policy? The new one?
- **Imani:** Yes, it says that now we have to wear a new mask for inside with our client and a different one out on the street? That's crazy. I'll be going through my masks twice as fast!
- **Sofia:** Yes. I think they're worried about complaints from clients. But you should be getting masks from the agency. A few days ago, I heard that they're giving everyone a fabric mask for outside.
- **Imani:** What, I haven't heard this! Am I supposed to go into the office? I don't really want to travel more than I have to.
- **Sofia:** Yes, but if you call your coordinator, they can mail them to you. You can probably ask for more than one fabric mask too. I asked for two.
- **Imani:** Huh, okay. Thanks so much for the information. I'll call tomorrow.

A.4 Week 5: E-Petitions for Collective Needs and Mobilization

- **Narrator:** Virginia is finally back home after her first day on the job with a new client. First days are always a bit touchy because you never know what to expect. She really wants to talk about it, so she decides to call up Alexis, another home care worker that she met a couple years ago when they shared a client. These days, they work for different agencies, but they're still friends, and Alexis is often available to chat.
- **Alexis:** Hey, Virginia, what's up?
- **Virginia:** Oh hey, Alexis. Listen, I just got back from my first day with my new client.
- **Alexis:** Oh okay, how did it go?
- **Virginia:** Eh, I don't know. He seems like a nice guy. Quiet, mostly keeps to himself. And I took the case because it's close to where I live.

- **Alexis:** You don't sound super happy, though.
- **Virginia:** Mmhmm.... Yeah, it's just that he's overweight and needs help getting up out of his bed and chair to do just about anything. He's way too heavy for me to lift!
- **Alexis:** Oh wow. How heavy are we talking about here?
- **Virginia:** I'm sore everywhere! My arms hurt, and I'm getting old. I don't think I can do this!
- **Alexis:** Yeah, you shouldn't push yourself like that. Are you going to ask them to change your case?
- **Virginia:** I guess so. I just feel bad about it. The client, he's a nice guy, and the location is convenient. It's a hassle for everyone. I just wish they would have told me that I'd have to be lifting the client.
- **Alexis:** Well why don't you ask your agency to tell you these things?
- **Virginia:** Are you kidding? There's all these agency policies. They're not going to tell me.
- **Alexis:** Sure, but they really shouldn't be giving you clients that you can't take care of. And if lots of aides are having the same problem, maybe that will encourage the agency to change their policy.
- **Virginia:** How am I supposed to get a bunch of aides together?
- **Alexis:** You know, there's this online website for workers to make petitions. Let me send it to you. I think if you write something, and get other aides to sign it, that will get agencies to pay attention. You could probably even ask your union rep to help get the word out.
- **Narrator:** Later that night, Virginia clicks on the link that Alexis texted her. To create a petition, it asks her what agency she works with and to briefly describe what she wants the agency to do.
- **Virginia:** "I want my agency to tell me if a case requires me to lift the patient because I'm not strong enough to lift patients."
- **Narrator:** The petition site allows home care workers to sign petitions by writing their name, email, and selecting their agency. The site assures Virginia that names and contact information are not shared, only aggregated information by each agency. Virginia spends some time browsing through some petitions by other home care workers and signs a couple.
- **Narrator:** A few weeks later Virginia's petition has a few hundred signatures. The site allows other aides to make comments on Virginia's petition, and these comments can also be signed by other aides who agree.
- **Narrator:** The top comments on Virginia's petition talk about other important types of information that aides should get about potential cases, such as whether the client lives with family or is diagnosed with or at risk of COVID-19. The union might use Virginia's petition to make the case for changing the policies at her agency.