Peer-Assisted Injection as a Harm Reduction Measure in a Supervised Consumption Service: A Mixed Method Study of Client Experiences

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Abstract

**Background:** Peer assistance is an emerging area of study in injection drug use. When Canada’s first supervised consumption site (SCS) opened in 2003 in Vancouver, BC, clients were prohibited from injecting their peers; only recently has this practice been introduced as a harm reduction measure at these sites. In 2018, Health Canada granted federal exemption to allow peer-assisted injection at certain SCS sites, under the Controlled Drugs and Substances Act. Literature pertaining to peer-assisted injection addresses several topics: interpersonal relationships between the injector and recipient; the roles of ritual and pragmatism; trust and assessment of expertise; and gender relations.

**Methods:** In this explanatory sequential mixed-methods study, participants were interviewed about their experiences in a peer-assisted injection program (PAIP) at one SCS regulated by Health Canada. Quantitative administrative data was used to provide context and to describe the study sample in comparison to all PAIP participants.

**Results:** PAIP clients made up only 17.4% of all SCS clients; however, 71% of all SCS visits and 83% of all overdoses occurred among PAIP clients indicating their high service utilization. The PAIP program was utilized infrequently (0.4% of all SCS visits) but was a valuable service as expressed by Program participants. Participants expressed being moved by compassion to help others inject. While their desire to assist was pragmatic, they felt a significant burden of responsibility for the outcomes. Other prominent factors were social connection, trust, safety, social capital, and reciprocity. Participants also made suggestions for improving the PAIP.

**Conclusions:** These findings reveal the humanity within a cohort of at-risk individuals, often dehumanized at the societal level. Relational equity and mutuality were evident, in contrast to other studies. Regular use of the SCS, and access to its resources, enabled participants to make healthier choices and practise lower-risk injections. At the federal level, there is considerable room to advocate for allowing clients to divide drugs safely within the SCS, and to increase capacity for safer alternatives such as inhalation.

**Background**

Insite, Canada’s first SCS, opened in 2003 in response to high rates of street drug use in the Downtown Eastside of Vancouver, BC. At the time, peer injecting was prohibited on the premises by federal law (3–5), meaning any clients requiring assistance with injection remained vulnerable to unsafe conditions offsite. In a further effort to mitigate risks such as syringe sharing, blood-borne infection and overdose amongst this cohort (2, 6), a Vancouver grassroots organization opened an unsanctioned injection site in the same area, wherein peers oversaw and assisted with injections.

Literature pertaining to peer-assisted injecting is scant, but several topics are prominent therein: interpersonal relationships between the injector and recipient; the role of ritual and pragmatism; and gender inequality. Interpersonal relationships between injectors and recipients are a key factor in peer-assisted injection. Bailey, Ouellet (7) found that 63% of recipients were sexually active with their injector,
while McElrath and Harris (2) described how the recipient and injector are often part of a social network, where injections may be reimbursed with cash or drugs. Higher rates of receptive syringe sharing are associated with close social romantic or intimate relationships (2), which may arise prior to regular injection assistance between partners, or during its course (2).

Dechman (8) stated that “natural helpers”—individuals in social, drug using circles whose primary role is secondary distribution of drug use supplies—are frequently requested to inject their peers. Injectors may be sought out on account of their demonstrated expertise in intravenous injection (2); some of these individuals have spoken of a “buzz they received from injecting others... assuming the position of the expert injector” (p. 260). However, injector-recipient relationships can also be characterized by violence, harm and inequality. McNeil, Small (9) found that many PWID experience violence when seeking assistance injecting, particularly when those encounters occur in marginal spaces. Kolla, Kenny (5) found that women were especially at risk for overdose when receiving injection assistance by a partner.

Women are more likely to need help injecting, having smaller veins, and their injectors are more likely to be male partners or dealers (2). Such gendered peer injecting tends to produce unequal power relationships, indicative both of gender power differential and the social context of injecting, wherein male injectors exercise control over female recipients (2, 7). Most PWID—of any gender—receive their first injections from males (2, 10). The commonplace exchange of sex for drugs puts partners doubly at risk, for sexually transmitted disease and blood-borne infections from shared syringes (11). Women recipients are at much higher risk from unsafe injection practices, as their male injectors tend to inject themselves first (2). Wright, Tompkins (12) found that peer injection between intimate, heterosexual couples disproportionately leaves women vulnerable to physical, economic and emotional abuse from their male partners. McNeil, Shannon (13) found that hegemonic masculinity and gendered violence are normative features of drug culture. In relationships characterized by greater trust, egalitarianism and support, peer injecting is more reciprocal (12).

Peer injections can involve both pragmatic and ritualistic aspects. Such injections may be undertaken because the recipient is experiencing withdrawal, shaking, and anxious (2, 14). Wilkins, Bissell (15) found that many PWID do not want to inject others, relenting only through empathy when they see their friends or partners suffering. In these situations, injectors perceived their role as ‘helping out.’ Certain injection rituals may arise in connection with the serostatus of individuals sharing syringes (16). Those with a confirmed seropositive status might allow those who are seronegative (or “clean”) to use first. Refusal to give used syringes to other injectors can be a sign of true friendship (2, 17). Ritual order in peer assistance can have other safety implications, as injectors who use first may subsequently be delivering the drug to others while under its effects (2). Needle fixation—the compulsive need to inject, with or without drugs—is yet another facet of PWID ritualization in need of further study (18–20).

There is abundant evidence that peer-assisted injection is desirable in SCSs. Mitra, Rachlis (21) reported that 32% of potential SCS clients want assisted injection as a standard, operational feature onsite. Peer-
based approaches to drug use have proven cost effective and beneficial to the most vulnerable members of the intravenous drug using cohort (22), and peer education is known to be an effective measure against the spread of blood-borne infections (23). A formalized, peer injection support program could benefit SCS clients through safe injection education and expert assistance, while protecting recipients from exploitive or unsafe relationships with would-be injectors (14). Research to date, however, is insufficient to inform the implementation of peer-assisted injection on a large scale. This study presented an unprecedented opportunity to explore peer assistance within a government-sanctioned SCS.

Methods

Purpose of the Study

Recently, Health Canada exempted a small number of sanctioned SCSs across Canada to allow for peer-assisted injection, as part the Peer Assistance Pilot Evaluative Framework Project. The purpose of this study was to explore the nature of peer-assisted injection at one site in a small city in Alberta. This site was among the first six in Canada to receive the Health Canada exemption, and the only SCS in North America providing oral, intranasal and inhalational alternatives to injection. Through a qualitative, descriptive study design, we sought better to understand: (1) the difference in consumption and overdose frequency between peer-assisted injection and self-injection; (2) the nature of the injector-recipient relationship; (3) the experience, attitudes, conditions, and cultures that contribute to and define peer assistance, inside and outside of an SCS; and (4) how peer-assist programs might be strengthened.

Ethics

Ethical approval was granted by the research ethics office at the academic institution employing the researchers. Research was carried out according to the Tri-Council Guidelines for Human Subjects Research. Participants are identified with pseudonyms throughout this article.

Recruitment

Participants were recruited through purposive, criterion-i sampling, in order to select both recipients and injectors with a varying frequency of peer-assisted use (24). Inclusion criteria for the study were: (1) accessing the SCS during the preceding 10 months; (2) registration in the peer-assist program, as required by Health Canada; (3) age between 18 and 65 years; and (4) identifying either as an injector, a recipient, or both. Participants were excluded from the study if they: (1) were not clients of the SCS; (2) had not participated in the peer-assist program in the preceding 10 months; (3) were under the age of 18; and (4) were acutely intoxicated and/or lacked the cognitive capacity to understand and provide their informed consent.

Operational records from the SCS were scanned to flag a variety of potential participants—female and male; recipient and injector; and frequent and infrequent users of peer assistance and supervised consumption. These individuals were approached in person, during SCS visits, by a trained research
assistant who explained the study and provided a letter of invitation. Those choosing to participate (n = 16) gave signed, informed consent prior to taking part in interviews. Participants were categorized as recipients (n = 5), injectors (n = 5), or both (n = 6) for the sake of analysis. Each participant received a 25.00 CAD gift card, redeemable for groceries and other amenities in the downtown core of the study city; this was felt to be a suitable gesture in light of most participants’ substance dependency and insecure socioeconomic status.

Data Collection

The researchers were granted access to quantitative, demographic data, gathered by SCS staff members in connection with their duties of assessing, supervising and reporting onsite peer-assisted injections, in accordance with Health Canada policy. For each peer-assisted injection, staff recorded a reference code for injector and recipient; gender; age; reason for peer assistance; staff interventions; successful/unsuccessful injection; outcome (e.g. overdose); and any open-ended observations. Staff began collecting this data from the outset of the Peer Assistance Pilot Evaluative Framework Project in June 2018, and continue to do so as of this writing.

Trained research assistants carried out semi-structured, qualitative interviews in January, 2020. Each interview began with demographic details and proceeded through a series of core questions, supplemented with inquiries specific to the participants’ various roles (injector, recipient, or both). Questioning pertained to participants’ experiences of peer assistance, both onsite and offsite; the nature of their partnerships with their peers; histories of peer assistance; precautions against prevent blood-borne disease; rituals; and power differentials within their peer assistance relationships. All interviews were audio-recorded and professionally transcribed. Thematic analysis (25) was conducted by all members of the research team, first independently, then as a team, to build consensus on the emerging themes.

Results

Demographics

A total of 248 unique clients accessed the peer-assist program at the SCS, either as recipients (n = 159), injectors (n = 154), or both (n = 65, at least once) between June 12th, 2018 and December 31st, 2019 (Fig. 1). A total of 1,430 unique individuals accessed the SCS during the same timeframe, meaning peer-assisted injection was accessed by 17% of total SCS participants. Just over half of peer-assist clients identified as female (n = 132, 53.2%), in contrast to the 40% of total number of SCS clients identifying as female.

The mean age of peer-assist clients was 33 (range 18 to 60+) (Table 1), closely aligned with total SCS clients’ mean age of 34 (range 16–60+) during the same reporting period. Three quarters (77.8%) of clients in the peer-assist program identified as Indigenous (First Nations, Metis or Inuit) (Table 2). On this
measure, both the total peer-assist clients and study sample skewed slightly higher than the total number of SCS clients during the same time period, of whom 63% identified as Indigenous.

From June 12, 2018 to December 31, 2019, the SCS was visited 353,331 times, with 1,469 visits involving peer-assisted injections (averaging 77 per month). A total of 2,758 overdoses were reversed at the SCS during this timeframe; among these, only 28 occurred as a result of peer-assistance, meaning the total frequency of peer-assist overdoses was 1.02%. None of the overdoses resulted in death.

Table 1
Age of Clients in Peer Assist Program

| Total Peer Assist Clients | Peer Assist Study Sample |
|--------------------------|-------------------------|
| Age (Years)              | n   | %   | Age (Years) | n   | %   |
| 18–20                    | 9   | 3.6% | 18–20       | 1   | 6%  |
| 20–29                    | 101  | 40.7% | 20–29       | 3   | 19% |
| 30–39                    | 89   | 35.9% | 30–39       | 5   | 31% |
| 40–49                    | 30   | 12.1% | 40–49       | 6   | 38% |
| 50–59                    | 14   | 5.6%  | 50–59       | 1   | 6%  |
| 60+                      | 5    | 2.0%  | 60+         | 0   | 0%  |
| Total                    | 248  | 100.0% | Total       | 16  | 100%|

Table 2
Ethnicity of Clients in Peer Assist Program

| Total Peer Assist Clients | Peer Assist Study Sample |
|--------------------------|-------------------------|
| Ethnicity                | n   | %   | Ethnicity | n   | %   |
| Caucasian                | 46  | 18.5% | Caucasian | 2   | 13% |
| Indigenous               | 193 | 77.8% | Indigenous | 14 | 87% |
| Other                    | 9   | 3.6%  | Other     | 0   | 0%  |
| Total                    | 248 | 100.0% | Total     | 16 | 100%|

Themes

Compassion and pragmatism versus reluctance

Within the interview data, clients repeatedly expressed compassion for their peers’ suffering, which moved them to help with injections. Participants described not wanting to see others ‘dope sick’
(experiencing withdrawal); struggling; hurt; ‘stabbing themselves’; ‘wasting their drugs’; or ‘marking’ (causing tissue damage) through fruitless and often dangerous attempts to find and then stabilize a vein. Injectors particularly empathized with those struggling through withdrawal or inability to locate veins, whether on account of skill or physiology, having themselves undergone these tribulations. “I don’t like to see them stab themselves so many times,” remarked Kyle, “and when they’re really dope sick, I know how that feels too, so then I’ll give them a hand.” Another injector, Tyson, was motivated by concern for his peers’ financial circumstances. “I feel bad that they miss every time and they [have] to keep going on. The drugs cost a lot of money; and if they lose [it], they waste it; [and] they’re going to have to try and go get more.” Still others injected for recipients whom they knew were afraid of needles. Common to all these responses was a willingness to give without recompense, beyond the gratification of providing relief to a fellow PWID in need. “You get him high, and get him over his [dope] sickness,” said Ashley, “and I’m happy; he’s happy.”

The injectors were highly pragmatic about their role, which they saw as unpleasant but necessary. Some acknowledged having acquired reputations among their peers for expertise in venipuncture, and owned the injector role willingly. The more sought-after injectors, such as Justine, explained they could ‘doctor’ their recipients well, and find a vein on the first attempt. These skills could even be connected with self esteem: “I feel good about succeeding at what I do,” remarked Ashley. Others did not always feel up to the task. “I’ll inject people here, [but] there’s a lot of times I just [don’t] feel like it,” said Steve; “I just say no.” Reluctant injectors could also send would-be recipients to the SCS inhalation room, where they could smoke their drugs instead.

Some injectors felt a strong moral imperative to build recipients’ self-reliance, through teaching and encouragement to gain the skills needed for self-injection. Teaching centred on the recipients’ immediate needs, before and during the time of active assistance. Injectors actively coached recipients on the techniques of finding a vein and injecting themselves. “I show them, and I tell them, and then I show them,” explained Steve. “I tell them to watch me when I do it.” Attention to detail was frequently emphasized, especially for recipients who did not grasp the inherent risks. “You’ve got to be responsible if you’re going to do this shit, you know,” Zoë (injector/recipient) chuckled. “That’s dangerous, you know—wrong move, wrong shit—you’ll be gone in a second.”

Reluctance to inject others was connected not with selfishness or indifference, but fear of causing harm; injectors were mindful of missing veins, creating abscesses or other injuries, or wasting recipients’ drugs. Fear of overdosing recipients, however, was paramount. For this reason, many injectors only injected others in the SCS, where they could immediate receive medical treatment. “I’ve had a few OD on the shot that I’ve given them,” recalled Victoria (injector). “Maybe they’ve mixed it wrong... it’s upsetting.” This hazard alone was enough to dissuade erstwhile injectors from continuing the practice, professional supervision notwithstanding. “Lately I’ve been trying not to do it for people,” said Steve, “because when they OD on it, I’ll feel bad for it.” Even those injectors with the skills and knowledge to safely administer a hit actively tried to dodge this responsibility, knowing that failure entailed potentially negative social and emotional consequences. “[The recipient] walks around hating you, because you missed it, and they don’t
have no more drugs, or whatever,” explained Kyle. Tyson was more blunt: “What if they don’t make it through—they die right there? Then I’d feel like it was my fault.”

Safety and risk aversion

Injectors were scrupulous about procedures and safety, regardless of the recipient or the locale. Much like health care workers adhering to universal precautions, injectors proceeded on the assumption that everyone was HIV+/HBV+. Intravascular injections usually began with hand washing, and many injectors wore gloves, provided they did not interfere with locating recipients’ veins. Recipients prepared their own drugs. Injectors invariably saw to recipients’ injections before their own, lest they miss veins and cause tissue damage through intoxication. They also refused to inject peers who were ‘tweaking’ (visibly high on methamphetamine), drunk, unable to sit still, ‘too needy,’ or otherwise at risk. For injectors, these safety measures were yet another measure of personal moral compass. “[Even] if I don’t like them, that doesn’t mean I want them to be hurt or anything,” said Zoë with a laugh. “I’m not a hateful person.”

Despite their engagement in an intrinsically risky practice, injectors were fundamentally risk-averse. Supervised injections at the SCS, while time consuming, were far preferable to the offsite alternatives, where PWID were vulnerable to overdose, contamination, infection, violence, theft, arrest, and social stigma. Some participants had entirely confined their usage to the SCS since its opening in February, 2018. “I really don’t like doing it on the street, because it’s something that you don’t want to show to the whole world,” Zoë admitted. In the participants’ view, SCS safety culture played a significant role in their wellbeing. Nurses and paramedics, on hand to teach safe injection techniques and aftercare, boosted the knowledge base and self-reliance of clients, who in turn paid these benefits forward to their peers.

While the SCS and the peer assistance pilot were felt to be transformational for many clients’ safety and self-reliance, participants pointed out a at least two drawbacks with the program. At the time of the study, Health Canada and the Canadian criminal code defined any transfer of drugs between individuals as trafficking, thereby forcing SCS clients to share and divide their drugs offsite. This application of the law, reviled as arbitrary and unfair, created an unwelcome speed bump in the peer assistance process. “Sometimes I’m really sick, and then that just takes more time of me having to torture myself, walking over there just to give my friend something, and then coming back,” said Justine (injector), who went on to point out that sharing and dividing drugs in the street effectively negated the protection of the SCS from arrest or self-harm. Meanwhile, onsite inhalation rooms in the SCS—a first in North America—represented a safer alternative to many clients reluctant to administer or receive injections, yet the demand for this service far exceeded the capacity of the site. “I try and stick to smoking or snorting, but there’s [not enough space back there],” remarked Zoë. “If there was more safe space, I think there’d be more smokers than injectors… people don’t like [to wait].”

Social connections and the circle of trust

Of the 16 participants interviewed, only two injectors acknowledged intimate relationships with their recipients. The rest characterized their peer injection networks as circles of trust, underlain by kinship or
kinship-like bonds. These clients saw their peers not just as fellow travellers, but as friends and family. The emphasis on kinship amongst Indigenous clients—whether by family or band affiliation—was a significant contributor to this social order, but street life entailed its own loyalties and attachments. Familiarity, mutuality and reciprocity were key factors of the injector/recipient dyads—far outweighing gender, which mattered only to the extent that female injectors were more likely to help female recipients. Injectors would not “say yes to just anyone,” and recipients in turn only sought the assistance of injectors with whom they had a strong social connection. This principle resulted in a semipermeable boundary around the peer network of injectors and recipients.

Injector-recipient relationships were characterized by normative, mutual support—Danny (recipient) felt it was “common courtesy to give someone a hit”—but also tacitly understood as transactional. Injectors helped recipients, knowing certain, unspoken benefits would accrue: social capital, goodwill, and respect, as well as tangibles such as gifts of drugs and other goods. Compensation was a fluid concept; help might be given one day and repaid in a different form on another day. Identity also influenced participants’ attitudes to reciprocity. Gord (injector), who identified as First Nations, remarked he neither expected nor declined recompense from recipients, because “[in] my culture you can't deny an offer, or else they’ll take it as [if] I’m dissing them.” Amongst the participants, injector-recipient reciprocity amounted to a tacit social contract, based on mutuality and trust rather than power.

Discussion

As a cohort, PWID are routinely stigmatized and marginalized by society, but the above findings on peer assistance remind us these individuals are fully capable of empathy, remorse, care, wisdom, loyalty and fellowship. Relieving the suffering of a fellow human being was the primary motive of the injectors interviewed (11). As with previous studies, we found that community bonds, mutuality and trust within this cohort were strong (2), but our sample did not reflect Bailey, Ouellet et al.’s (7) finding that sexual activity was prevalent between injectors and recipients. The Indigenous background of many participants appears to have been a much stronger factor in forming community bonds, as well as solidarity borne of the isolation and prejudice endured by every participant.

Injector-recipient relationships were transactional and reciprocal, but participants had flexible attitudes to reciprocity; some recipients reimbursed their injectors, others paid the favour forward (2), especially in the sharing of knowledge and best practices. While compassion and empathy were the primary drivers of peer assistance, social bonds and trust were equally important prerequisites for each transaction.

Generally speaking, status was not a significant motivator for the injectors who took part in the study, nor were these individuals treated differently within their peer assistance social circles. While a few participants were respected for their expertise in injecting, they were not venerated as ‘hit doctors’ or designated injectors, in contrast to other findings (2). Indeed, this sample was comparatively reluctant to engage in peer-assisted injections, owing to a prevalent fear of causing harm. Likewise, we found no evidence of normalized violence or inequity in the injector-recipient dyads investigated, unlike the findings
of previous studies (2, 9, 12). Our data indicated peer assistance was underlain by a spirit of generosity, reciprocity, empathy and egalitarianism. Gender did not emerge as a prominent factor.

The injectors we interviewed demonstrated a highly pragmatic and methodical attitude towards injection, despite the ritualism (16) and needle fixation (18–20) elsewhere attributed to this role. Walmsley (26) asserts that the concept of needle fixation is an outdated and inaccurate political artifact, and that assuming PWID to be self-regulatory and risk-averse is a more enlightened research stance, in exploring subjective interpretations of risk. Our findings support this position.

Despite the seeming paradox of taking precautions for an inherently harmful practice, safety measures represented a locus of control for participants, who otherwise felt powerless to influence the course of their addictions. Every client had the capacity to wash their hands, wear gloves, and observe universal precautions on blood contamination. At least temporarily, these measures took their focus off those aspects of addiction they could not control: stigma, poverty, withdrawal, and comorbid physical and mental health issues. Moreover, injection safety culture—regardless of locale—appeared to be correlated with SCS use. Even when injecting themselves and others offsite, clients followed the same protocols they learned at the SCS, where these steps were mandatory. This finding is significant, as SCSs are often associated with short-term prophylactic benefits such as preventing overdoses, injuries, infections and clinical interventions. Exploring the ways in which regular usage of an SCS changes the context for healthier choices may be an avenue for further research.

Notwithstanding these encouraging trends, it was also apparent the peer-assist program and other onsite resources did not go far enough in reducing some participants’ risks. The necessity of dividing drugs offsite—owing to a technicality in Canadian drug trafficking law—still left participants vulnerable to violence, theft, or arrest on the street, and some participants suggested the nuisance of leaving and returning outweighed the benefits of injecting with professional supervision (28). Likewise, many participants—in injectors and recipients—viewed supervised inhalation as a much preferable alternative (25), only to be frustrated by the limited onsite capacity for this practice. These deficits highlight the importance of timely and responsive knowledge translation in harm reduction research.

**Limitations**

Although data saturation was achieved, this study was limited by a small sample size. Furthermore, the specificity of local culture—Indigenous beliefs and value systems in particular—may limit transferability of this study to other research settings.

**Conclusion**

The experiences of this small sample of PWID, in a relatively small population center in Alberta, reveal much about the capacity for humanity and fellowship within a stigmatized, and vulnerable segment of society. The long-awaited rollout of supervised peer assistance, with its lingering drawbacks, exemplifies the slow pace at which public perceptions and policy catch up to the frontline realities of this cohort. Peer
assistance culture—long thought tantamount to mutually destructive enabling, exploitation and violence—was here found to manifest values of empathy, compassion, trust, protectiveness, and solidarity. That these values were equally connected with street life and First Nations traditions—also subject to widespread prejudice—shows the extent to which the battle for harm reduction and basic human dignity is a battle of perception. Additional safety measures, such as the redefinition of criminal code restrictions on trafficking and greater availability of supervised inhalation, will come only through advocacy informed by frontline data. This study, we hope, illustrates one research pathway to accelerate the pace of reform in Canadian controlled substance policy and public awareness.

Abbreviations

| Abbreviation | Description                      |
|--------------|----------------------------------|
| HIV          | Human Immunodeficiency Virus     |
| HBV          | Hepatitis B Virus                |
| OD           | Overdose                         |
| SCS          | Supervised Consumption Service   |

Declarations

**Ethics approval and consent to participate**

Ethical approval for this study was granted by the University of Lethbridge Human Subject Research Committee. Criteria of the Tri-Council Guidelines for Human Subjects Research were followed.

**Consent for publication**

Our manuscript does not contain data from individual persons; rather, data is presented as a whole and quotes are anonymous. In our consent letter and process, the research team was transparent about using participants’ words in publications.

**Availability of data and materials**

We are not able to share our research data publicly, because individual privacy could be compromised and because the participants are part of a marginalized and stigmatized group requiring protection.

**Competing interests**
EP, TO, KH: The authors declare that they have no competing interests.

TM, EM, SB, JM: These authors are staff members at the organization where the study took place.

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**Authors' contributions**

| Author | Conception | Design | Quantitative Analysis | Qualitative Analysis | Manuscript | Manuscript Review/Revise |
|--------|------------|--------|-----------------------|----------------------|------------|--------------------------|
| EP     | ü          | ü      |                       | ü                    | ü          | ü                        |
| TO     | ü          | ü      |                       | ü                    | ü          | ü                        |
| TM     | ü          | ü      | ü                     | ü                    | ü          | ü                        |
| EM     | ü          | ü      | ü                     | ü                    | ü          | ü                        |
| KH     | ü          |        |                       |                      |            |                          |
| SB     | ü          |        |                       |                      |            |                          |
| JM     |            |        |                       |                      |            | ü                        |

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**Figures**

![Figure 1](image-url)
Roles of clients in the peer assist program