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ORIGINAL RESEARCH



Exploratory study on the adaptation of online services offered to people with disabilities, in the context of the COVID-19 pandemic

Dylane Labrie^a, Nolwenn Lapierre^{a,b,c}, W. Ben Mortenson^{c,d,e} , Anne-Sophie Allaire^a, Marie-Ève Schmouth^a and François Routhier^{a,b} 

^aCentre for Interdisciplinary Research in Rehabilitation and Social Integration, Centre intégré universitaire de santé et de services sociaux de la Capitale-Nationale, Québec, Canada; ^bDepartment of Rehabilitation, Faculty of Medicine, Université Laval, Québec, Canada; ^cDepartment of Occupational Science and Occupational Therapy, University of British Columbia, Vancouver, BC, Canada; ^dInternational Collaboration on Repair Discoveries, Vancouver, Canada; ^eRehabilitation Research Program, GF Strong Rehabilitation Research Lab, Vancouver, Canada

ABSTRACT

Aim: During the COVID-19 pandemic, many community organizations offering services to people with disabilities (PWD) changed their service delivery, switching from in-person to remote services. However, little is known about what it was like for organizations to quickly pivot their service delivery. The study explored barriers and facilitators to access community services for PWD and identified potential improvements to these services.

Methods: The study used a mixed method, multiple case study design, which included a convenience sample of 27 participants recruited from four community organizations delivering services to PWD. Participating staff and members participated in six different focus groups and completed a questionnaire about their level of satisfaction regarding the evolution of the services. Inductive thematic analysis was conducted on the focus group data and the data from the questionnaires were descriptively analyzed.

Results: The thematic analyses revealed four themes: “Succeeding in adapting the interventions to continue providing services”, “Enjoying a lot of new things about the new online modality”, “Key elements that have facilitated the transition” and “Facing some difficulties implementing online services”. The median satisfaction score demonstrated that the participants were satisfied with the services. The success of these organizational changes relied on the adoption of new methods and approaches to service delivery.

Conclusion: Through this study, barriers and facilitators that the organizations and their beneficiaries have experienced during the pandemic were identified as well as suggestions for improvement. The organizations consider maintaining online services beyond the pandemic to offer PWD easier access to community services.

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Disability; community; services; organization; COVID-19; online services

> IMPLICATIONS FOR REHABILITATION

- People with disabilities and professionals were satisfied with online community services developed during the pandemic.
- Individual with disabilities were more satisfied about the accessibility and the way of delivering online services than the staff.
- Facilitators for online service delivery included the choice of low-risk services to offer to their members, the use of the Zoom platform to deliver the service and the flexibility of the internal organization.
- Barriers to online service delivery included challenges related to communication, both among members and between staff and members, composing with a small screen for the staff and the members and for organizations to reach all their members – especially the oldest ones.

Introduction

Most of the world’s population is likely to experience a form of permanent or temporary disability during their lifetime and 15% of the world’s population is currently living with some form of disability [1]. According to the World Health Organization [1], disability corresponds to the negative interaction between the health condition and the individual’s contextual factors. People with disabilities (PWD) encounter various obstacles in terms of access to community activities and face reduced access to health services [2]. PWD are likely to experience depression and social

isolation because of these barriers to access their environment [3]. These barriers can thus reduce their social participation as well as their involvement in the community. Many community organizations offer interventions and resources to facilitate social participation among PWD. They provide support, among other things, for daily routine activities (e.g., meal preparation or personal hygiene), community participation (e.g., social, and recreational activities) and respite for caregivers and family members [4].

However, since March 2020, the services offered by these community organizations in many countries have been heavily impacted by the COVID-19 pandemic. Many organizations were forced to

implement rapid organizational changes to comply with preventative regulatory requirements. The isolation measures associated with the pandemic caused drastic changes in the lives of the general population [5]. However, not everyone was affected equally by these restrictions. It had more profound effect on PWD who relied on public and adapted transport, had regular healthcare or rehabilitation appointments, and needed close contact with caregivers to complete daily routine activities. In most countries, governments restricted access to these community services to prevent the spread of the virus. These measures reduced contact between PWD and their caregivers. Additionally, some PWD experienced communication challenges because of medical masks [6–8].

To reduce the negative impact of COVID-19 related prevention measures, many community organizations developed new delivery methods and approaches. The pandemic brought an acceleration to their digital transition: many of them moved their services online using platforms such as Zoom[®] and WebEx[®] to reach their members [9]. Before the COVID-19 pandemic, few studies explored participants' perception of online community services. However, one study that explored the use of telerehabilitation technology to deliver in-home rehabilitation services, showed that these interventions were feasible and also appreciated by patients and therapists [10]. There are limited studies in the Quebec region (Canada)¹ regarding the accessibility and participation of online community services offered to PWD during the COVID-19 pandemic. Studies conducted in other countries demonstrated the benefits of incorporating online support among people living with intellectual disabilities [11] or with direct support staff [12]. Some organizations identified benefits to this transition, such as improved accessibility for people unable to attend on-site activities [13]. For example, one study found telehealth could provide opportunities for caregivers to delivery care and education for individuals with syndromic intellectual and developmental disabilities during the COVID-19 pandemic, however these tended to be accessed primarily by those living in urban and suburban areas [13].

Concerns still exist about access to these services for people who are more isolated, live in rural areas, or have difficulty adapting to changes [14]. A study conducted in the US found that rural

adults, who tended to have lower incomes were less likely to have a broadband connection at home than suburban adults, and less likely than urban adults to have a smartphone or tablet [15]. Also, some groups face higher risk of low income than others, such as recent immigrants, aboriginal people, single parents, people living alone, and people with a disability [16]. According to a 2020 Canadian survey, the rate of Internet use among adults living without disabilities was 92%, while it was only 84% among PWD [17]. Several online resources exist, representing a potential source of opportunities and increasing the sense of self-determination for PWD [18].

Therefore, it is paramount to consider how the remote resources developed by community organizations serving PWD in the context of the COVID-19 pandemic could be improved and become sustainable. The aim of this study was to explore barriers and facilitators of online delivery of services for community organizations in order to understand how to improve their accessibility for PWD.

Methods

This multiple-case study [19,20], follows a concomitant embedded mixed methods approach with a postpositivist paradigm [21,22], to provide a comprehensive portrayal of the online service delivery, as shown in Figure 1.

This multiple-case study was part of the first stage of a larger action-research partnership with not-for-profit organizations that received funding from the Social Sciences and Humanities Research Council (SSRHC, Partnership Grants). The goal of the partnership was to support community organizations and municipalities to develop, evaluate, and implement evidence-based interventions to contribute to the development of barrier-free communities dedicated to people living with sensory, cognitive, or physical disabilities. Emphasizing community engagement, co-creation and mobilization of knowledge, this partnership follows a research action approach to support the implementation of novel interventions addressing PWDs' needs that can be integrated into daily

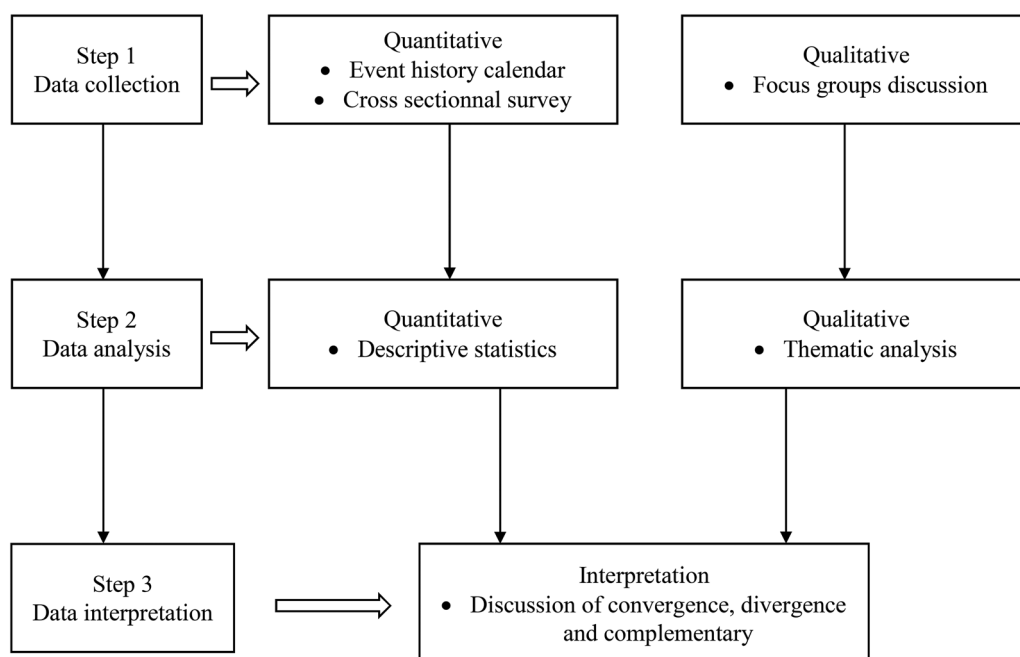


Figure 1. Methodological flow chart.

practices. The study was approved by the local ethics committee: Comité d'éthique de la recherche sectoriel en réadaptation et intégration sociale. Methods and results are reported in accordance with the Good Reporting of A Mixed Methods Study (GRAMMS) [23]. This framework provides guidelines on how to comprehensively report mixed methods studies, as well as issues related to methodological choices.

Participants

Participants were recruited among the stakeholders of community organizations that were members of our research action partnership. Convenience sampling was conducted among the 4 community partners who wished to participate in this study to recruit two types of participants: 1. PWD that were members of the organization and received online services from them and 2. professionals or volunteers (staff members) from these organization, providing online services to PWD. Staff members of the organization recruited participants by direct contact during their online intervention, by phone calls to their members (whether they participated or not in the online activities), by e-mails and message in their newsletters. Inclusion criteria were to be either an individual receiving online services from one of the partners or a volunteer or a professional providing these services. Potential participants were excluded if they were (1) under 18 years old, or (2) unable to give consent. Each of the four organizations recruited members who received the targeted service.

Four services were targeted by the heads of the partner organizations (one service per organization) because they saw potential for improvement. More specifically (1), an organization dedicated to people with visual impairments (VI organization) chose its "Coffee-meeting" service (2), an organization dedicated to people with Parkinson's disease (PD organization) chose its motor skills, balance and flexibility workshop (3), an organization dedicated to people with traumatic brain injury (TBI organization) chose to target all services offered online, and (4), an organization dedicated to people with general functional limitations (FL organization) selected their online registration service. The characteristics of the twenty-seven ($n=27$) participants from these four organizations of the Quebec City region (Canada) are represented in Tables 1 and 2.

Participants gave written consent by providing an electronic signature and were compensated for their time (\$25). To increase anonymity and security of participants' information, data were anonymized during the transcription phase: participant codes were created (beginning by M for members of the organization and S for staff).

Data collection

Data collection was carried out using virtual focus groups by Zoom[®] [24]. At least one focus group per community partner gathering staff and individuals receiving the services was held; they included staff providing online services and PWD receiving these services. Four to six participants per community partner were targeted to take part in each focus groups [25]. Focus groups were held using a video conferencing platform. They were led by one research professional and one undergraduate student who were independent of the organizations. The members of the research team do not have lived with experience of disability; however, they are all involved in accessibility research. Focus groups were conducted using a list of open-ended questions regarding the changes made in the delivery of programs, the

level of success of the organization's modifications, the facilitators and barriers organizations experienced with COVID-19 related changes in their services (e.g., what changes have been made because of the pandemic? What prompted these changes?). An online survey (Lime survey[®]) was used to collect demographic data including age, language, gender (i.e., female, male, other, prefer not to answer), and role within the organization. Satisfaction of both the staff and the PWD receiving the services regarding the adapted services was measured using a 5-point Likert scale. The survey was the same for the members and the staff, except for two questions where the members were asked how long they have been receiving the service and how often, and the staff were asked how long they have been involved within the organization and how many years of experience they have with PWD. The surveys included one question about the general satisfaction and another questions about satisfaction with accessibility of the service, its frequency, the media used to deliver the service, the level of response to their needs, the duration and how the services were offered.

Analyses

The five phases of analysis described by Braun and Clarke (2006) were applied. For phase 1. Becoming familiar with the data, audio recordings of the focus groups were transcribed into verbatim to become familiar with the data. For phase 2. Generating initial code, transcripts were coded following an inductive approach: text segments specifically related to the research objectives were identified and labeled into codes [26]. For phase 3. Searching for themes, transcript was then regrouped into sub-themes and ultimately themes [26]. Then, for phase 4. the themes were reviewed. Finally, for phase 5, the themes named, and a thematic map was created [27]. Two researchers independently coded transcripts from three different focus groups. This method makes it possible to integrate complementary perspectives into the analysis to take advantage of the multidisciplinary nature of the research team [22,28]. The coded data were then compared to see if there was agreement to ensure consistency of coding. To promote trustworthiness further there was an ongoing dialogue during the analysis as well as a consultation with a co-author who was experienced in qualitative research [29]. The triangulation, possible by using multiple people performing the analysis, allowed to provide rich complementary perspectives [22,28]. For member checking, participants indicated if they were interested in receiving a summary of the findings and if they wished to provide feedback on preliminary themes. The five participants who agreed to provide feedback indicated that the themes identified reflected their experiences. Qualitative analysis was performed with the NVivo[®] software.

Second, quantitative data were analyzed descriptively to characterize the sample with Excel[®] software. Measurements of central tendencies and frequency analyses were carried out to give a general portrait of each organization and the satisfaction associated with their service. Median satisfaction scores for each organization were calculated, as well as a global one, which combined the general satisfaction score of the four organizations.

Third, the last step of analysis involved the interpretation of the themes and quantitative data of each organization as individual cases [21]. Triangulation of quantitative and qualitative data in interpreting the results enhanced the credibility and confirmability of the results, as well as providing rich complementary perspectives [21,22,30]. To reach a cross-case conclusion and

support the transferability of the results, the entire data set was analyzed qualitatively [19,22]. Analyses were completely made in French, language used in the focus groups. Only the themes and verbatim chosen to illustrate them in the results were translated. Several co-authors were involved in the translation to ensure preservation of meaning.

Results

Organizations and participants characteristics

All 27 participants were native French-Canadian speakers. Three participants were from the PD organization, six from the VI, four from the FL organization and fourteen from the TBI organization. Details of the composition of the focus groups are presented in Table 1. Professionals included in the studies were advisors to members, clinical coordinators, specialized educators, and kinesiologists. Of these participants, two (7.1%) were assistant directors. Professionals were involved for an average of 6.9 years (± 6.2 ; minimum = 2 years, maximum = 15 years) in their respective organizations. Four of the staff members (14.8%) had been working for their organization for at least two years prior to this study, i.e., during the pandemic, while four others (14.8%) had been working in their respective organizations for more than 15 years. On average, members had been receiving the respective services for 7.6 years (± 4.6 SD) (minimum 1 year; maximum 15 years), as detailed in Table 1.

Results from the satisfaction questions were available for 23 out of the 27 participants and, are presented in Figure 2.

Qualitative results

Four main themes emerged from the focus groups, which are described below and in Figure 3. Some themes were specific to one organization while others were common to several.

Table 1. Participant characteristics^a.

	N	%
Age		
19–24	1	3.7
25–29	2	7.4
30–34	4	14.8
35–39	2	7.4
40–44	4	14.8
45–49	4	14.8
50–54	1	3.7
55–59	2	7.4
60–64	4	14.8
65–79	3	11.1
Gender		
Female	17	62.9
Male	10	37.1
Role within the organizations		
Director / President	1	3.6
Participant	13	46.4
Staff members	12	42.9
Deputy director	2	7.1
Type of participants within the focus groups	Members	Professionals
Visual impairment (Focus group 1)	4	2
Functionnal limitations (Focus group 1)	2	2
People living with TBI (Focus group 1)	1	5
People living with TBI (Focus group 2)	4	0
People living with TBI (Focus group 3)	0	4
Parkinson's disease (Focus group 1)	2	1

^aParticipants were invited to choose the category corresponding to their age. One of the participants represents themselves as having a dual role (i.e., director and staff member as a specialized educator).

^an = 27.

Succeeding in adapting the interventions to continue providing services

Each organization partially maintained its service offerings by applying different changes quickly. One organization took six months to offer this new modality while others made those changes within a month. The organizations decided to modify and adapt the already existing service offerings because of the new imposed health measures, as this participant highlighted “[...] our respite services that we were doing face-to-face, as we could no longer do them, we transformed them into online or telephone respite, depending (S01)”. Organizations reduced the duration of their activities to accommodate the new online format. For the VI organization, the new remote modality has facilitated the access to the Coffee-meeting service while increasing access to more speakers invited to this activity, for multiple reasons such as the one highlighted by this participant “[...] it's easier to bring a speaker from Montreal by Zoom, than to bring him down by bus” (S03). The PD organization has tried to improve the experience of its motor skills, balance, and flexibility workshop by adding an online registration system. As for the FL organization, before the pandemic it had already set up an online registration service in addition to its in-person registration. Since the COVID-19 pandemic, this organization favoured its online registration and changed its method of prioritizing members' choices because the group sizes and schedule restrictions, coupled with the difficulty of finding premises to continue its services:

The thing is, I arrived with a registration system already in place that was “first come first served”. I personally found this system uh, not good [...] that's why we had set up the system of choices and then when I processed the information, I considered the time of arrival, because I still wanted to give priority, but also the priority of choices. (S04)

Enjoying a lot of new things about the new online modality

All four organizations maintained their activities by using virtual modalities. These modalities allowed participation to remain constant in terms of the number of participants per activity. Members

Table 2. Organizations characteristics.

Organization	Studied service	Number of focus group participants	Number of members ^a	Studied service modality
TBI organization	All services offered online	14	700 to 900 members	Videconference (Zoom) Social media
PD organization	Skills, balance, and flexibility workshop	3	400 to 600 members	Videconference (Zoom)
VI organization	Coffee-meeting service	6	200 to 300 members	Videconference (Zoom)
FL organization	Online registration service	4	700 to 900 members	The online registration was completed via a Google form distributed by email, on telephone or on the website of the organization.

^aA range is given to preserve confidentiality of the included organizations and therefore their participants.

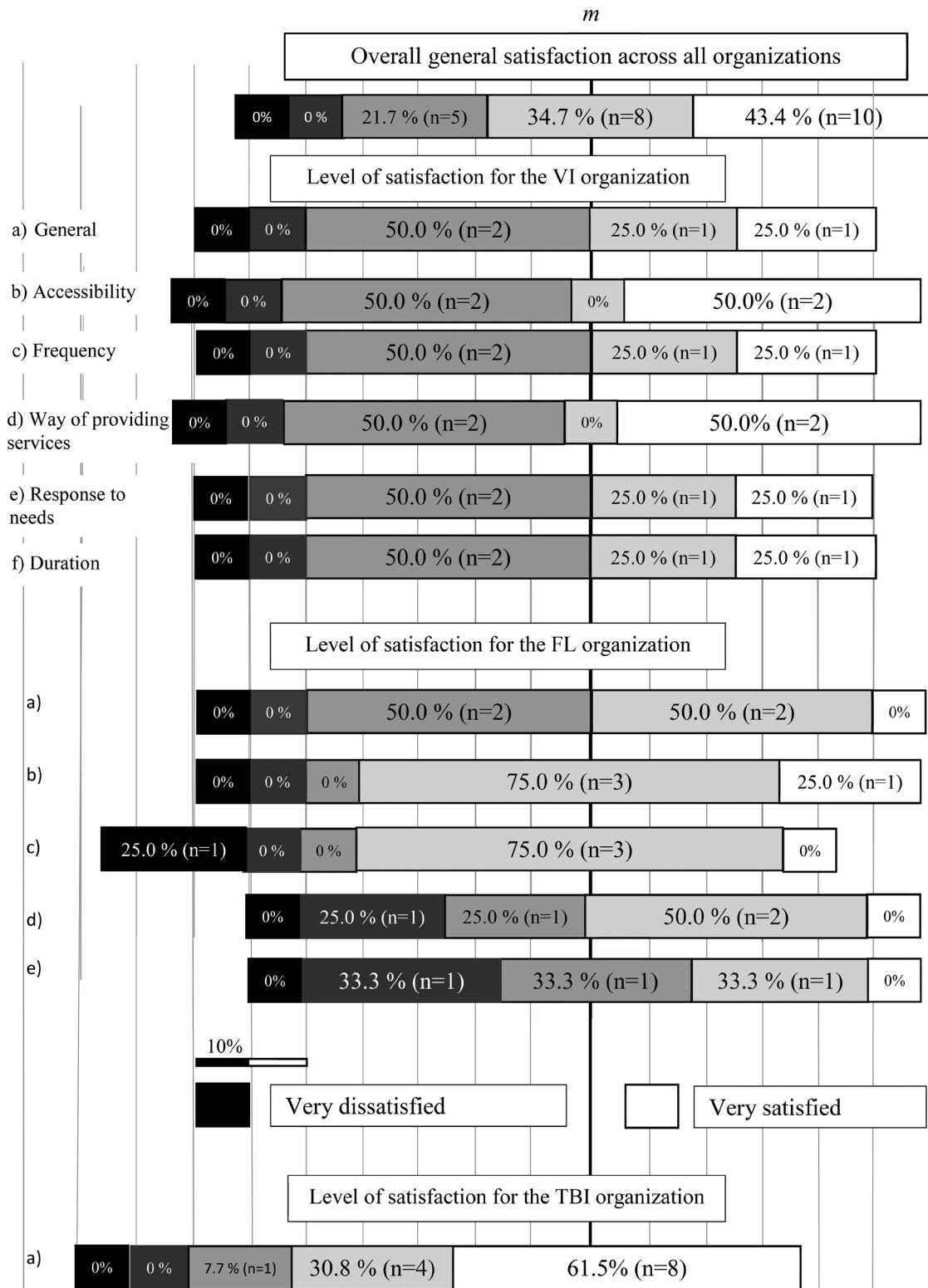


Figure 2. Different level of satisfaction (general and specific) towards the adaptations to the services that the four organizations delivered during the COVID-19 pandemic. Results from the Likert scale showing the different level of satisfaction of six variables (General satisfaction, Accessibility satisfaction, Frequency satisfaction, Satisfaction of the way of providing services, Satisfaction of their response to your needs in time of pandemic, and Satisfaction of the service duration) from the four community organizations presented in this study.

who participated less in face-to-face activities migrated to these online activities, as this participant reported:

Then, even with the resumption of face-to-face classes, the response was good. We had a lot of registrations then we realized that participants who preferred the virtual would not necessarily come in person.

[...] So, we also realized that we were responding to another customer request. (S02)

Some of these members and professionals appreciated the easy access to online services as it avoided in person visits to the organizations as this member reported "[...] but I live far [from the

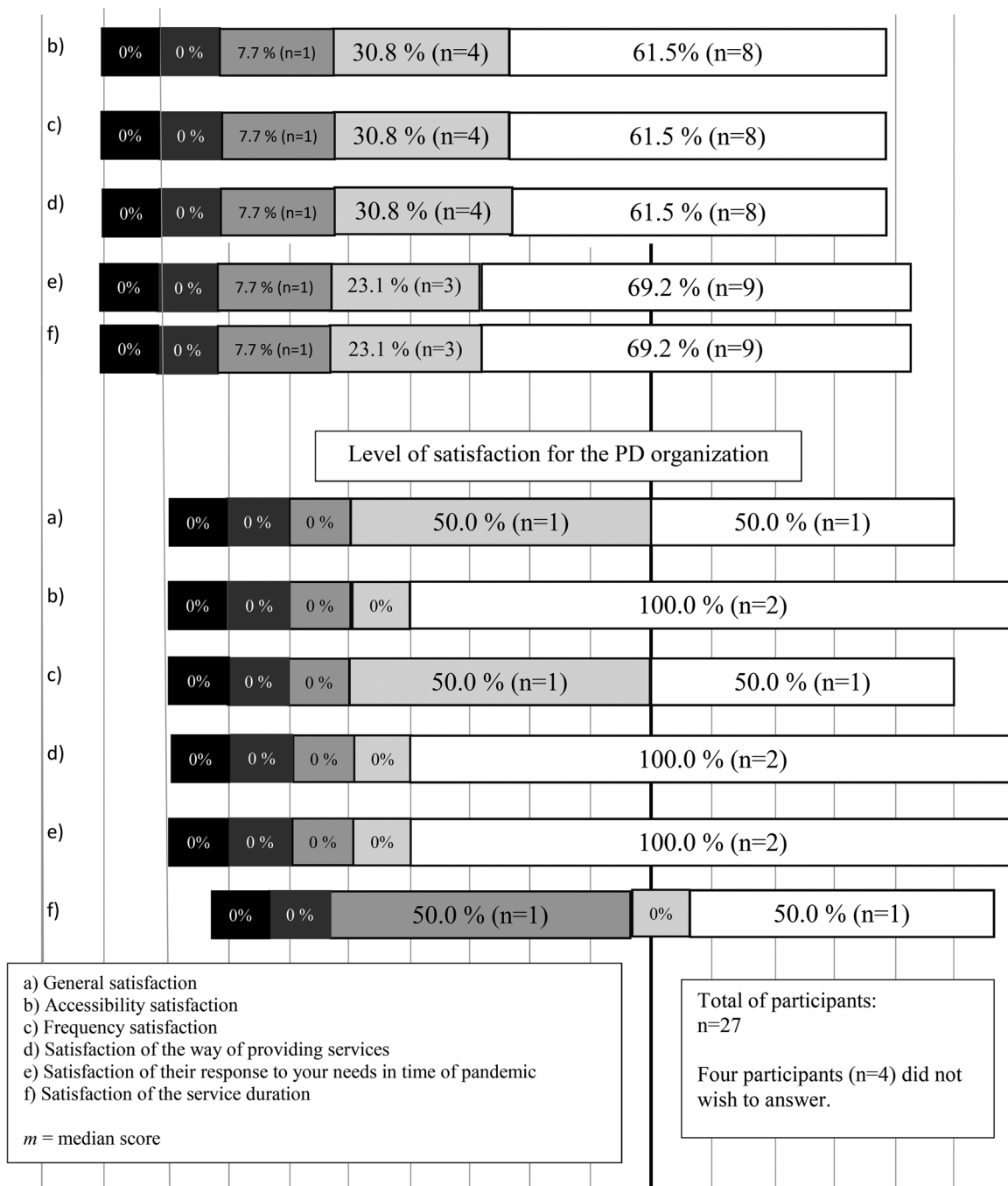


Figure 2. Continued.

organization] and it was more or less easy for me to get to the activities before. They did everything to accommodate me, but by zoom it was a charm" (M01). Also, the online modality succeeded in serving a larger territory for the TBI organization, as affirmed by this participant "[...] they really like the formula, the support groups by Zoom. It's still a big territory North Shore et South Shore then when we have dinners [...] the Zoom allows us to have bigger groups" (S01).

Key elements that have facilitated the transition

Professionals from the PD organization highlighted their partner's [association with whom they collaborated] attentiveness to their needs. They also appreciated their open-mindedness to a new virtual modality:

I just think that our partner is really inclined to give virtual lessons and for us it was a facilitator. Since they had already shared the information with their members, we just had to create the Zoom groups from that. (S02)

The communication between the PD organization and their partner's allowed a better transition towards Zoom®. The PD organization gained confidence to offer the best possible service while adapting to the different phases of the pandemic, as this participant reported "[...] on a logistical level, at the beginning, we made small modifications along the way, but we took confidence at that point" (S02).

One of the activities offered by an organization was described as a low-risk activity, unlike their boxing course, for instance, another service that represents a greater risk according to the

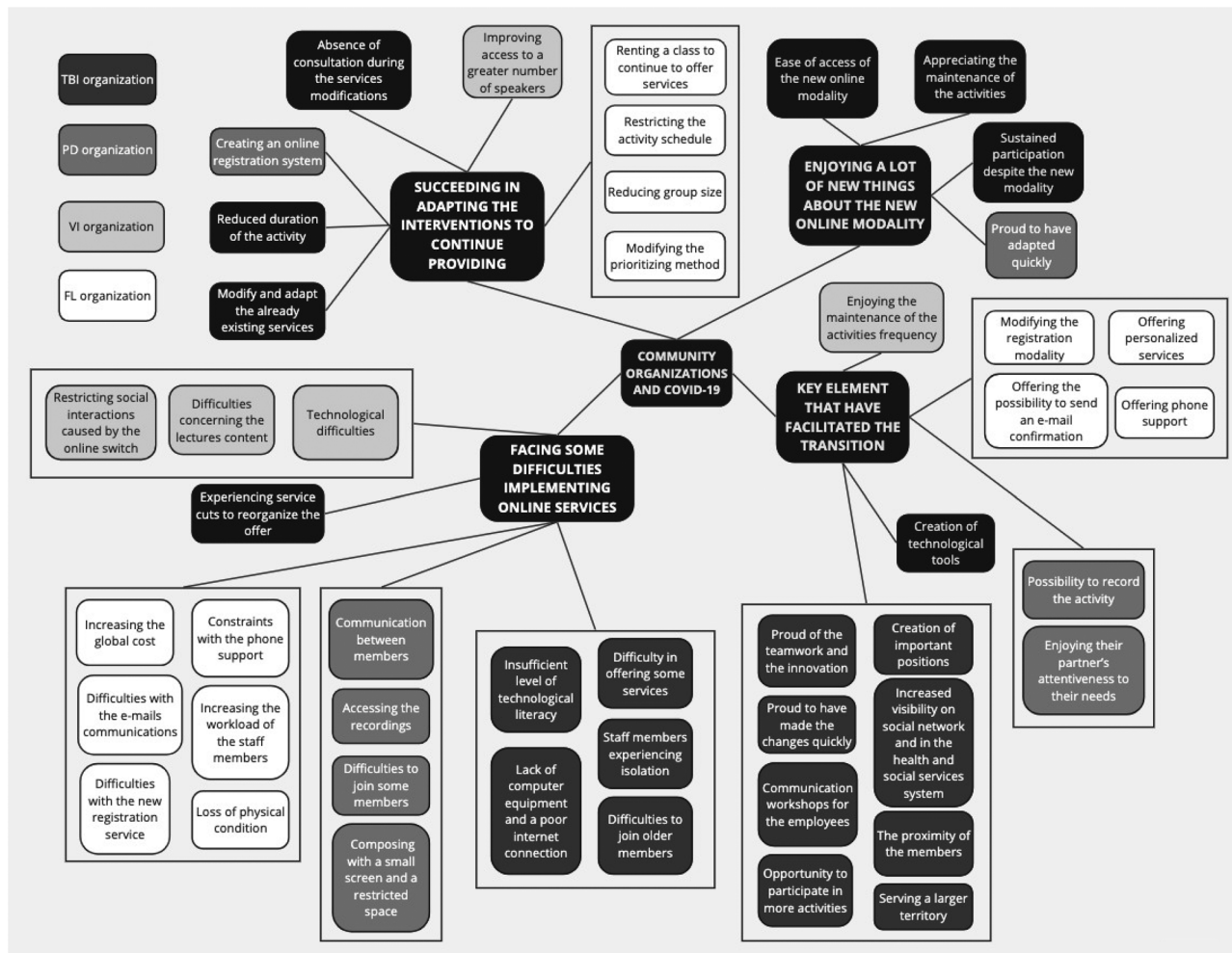


Figure 3. Codes that emerged from the focus groups.

two members. The motor skills, balance and flexibility workshops were perceived to be low risk enough by the PD organization to be offered virtually. This provided an opportunity to record these sessions, which was appreciated by members who could practice the exercises at one's own pace:

For the workshop I'm taking right now, I think that's wise in a way, we're limited in our space, so I don't see any real risk. [...] This would not be the case for other more intense courses, where it would seem a little daring for me. (M02)

Two organizations reported to have acquired new technologies, such as Zoom® or new tablets and implemented a rental system and developed guides for their use. User guides were developed for the new technological equipment as well as for the Zoom® platform. In addition, the TBI organization offered communication workshops for its employees to improve supervision of online activities. For this organization, the proactivity and teamwork of the professionals facilitated a quick return of the members to their services through on a new platform. Also, the proximity between professionals and their members allowed the organization to clearly identify the needs of their members and to maintain activities to address them, as this participant reported:

Basically, I think that a thing that has also facilitated a lot was the closeness that we already have with the families of members with brain

injury. [...] because we were able to quickly identify who was in most need, we were able to quickly branch off precisely because we knew that some families were really in certain situations. (S01)

Some organizations maintained the frequency of their activities, keeping their members active thus facilitating sustained participation. Finally, the FL organization facilitates access to its service (i.e., registration for activities) by sending registrations by email, which was appreciated by their members "Well, I love that, it's much simpler [...]" (M04).

Facing some difficulties implementing online services

The organizations faced some challenges caused by the implementation of the new service delivery methods. Firstly, some organizations encountered difficulties regarding the communication between the different members during the activities:

[...] it's like a closed circuit, it all leads us to be fixated on the instructor. We forget the others, we don't even see them, and we vaguely hear some hellos when everyone connects themselves. (M02)

For example, each session of the service from the PD organization was recorded; however, the members did not have had access to the recordings, due to confidentiality. The members also experienced difficulties participating because of screen size and

space restrictions. On one hand, participants had to perform their exercises in close proximity to their electronic device so that they did not lose sight of the instructor. On the other hand, the staff had difficulty seeing the whole body of the member on a small screen, especially when the groups were larger. While many members of the PD organization have made the transition to the new online modality offered, two other different organizations have still encountered difficulties in reaching some members, especially older ones. The TBI organization experienced difficulties in offering some of their services with the use of the online modality, such as home support, *"I had this at home before the pandemic [laughs] then, they came to meet me once a week at home, [...] but now by Zoom it's more to know if I need medical, personal help"* (M01). Members were also constrained because of an insufficient level of technological literacy, leading to difficulties in managing the group for the professionals. Finally, a lack of computer equipment and a poor internet connection represented additional constraints for this organization, *"[...] but not everyone has a computer, so there are a lot of people who can't participate because they don't have a computer at home"* (M01). Secondly, the VI organization has experienced constraints regarding the conferences offering. Some of the speakers invited to do an online presentation had difficulty delivering interactive, dynamic, and long enough lectures for the time allowed. Moreover, with the use of Zoom®, social interactions between the members had to be restricted due to the cacophony that it caused. Thirdly, one organization experienced different constraints, first with the registration system, which was hard to understand and fill, then with telephone support, which was supposed to be less time-consuming but actually increased their workload. They had difficulties with email communications because they were not always read. Members didn't always finish the registration process so some of them didn't get the chance to participate in activities and then experienced physical deconditioning. Because of the difficulties that the members experienced, the professionals saw their working time increased during the period when the members could register for the services. This organization, like some others, also experienced service cuts at the start of the pandemic to reorganize its service offerings.

Quantitative results

As illustrated in [Figure 2](#), the participants rated their overall satisfaction from "neutral" to "very satisfied". The combined median score for the general satisfaction of the staff and the members from the four organizations highlights that they were satisfied. Members were more satisfied, compared to the staff, regarding accessibility and the way of providing services. This overall satisfaction reinforced a theme that emerged from the focus groups: participation has been maintained despite the pandemic. The FL organization is the only one to have identified in the questionnaire a dissatisfaction in terms of the frequency of services, the way of providing services and the response to needs in times of a pandemic. Regarding the frequency, there were service cuts to reorganize the service offer. The difficulties related to the way of providing services were experienced through the registration software, telephone support and e-mail communications constraints. The VI organization is the only one that has general and specific satisfactions below the median scores. The PD organization is the one that seemed to have satisfied its members the most, in terms of its accessibility, way of providing services and response to needs in times of a pandemic. The TBI organization seems to have satisfied its members the most in terms of general satisfaction, frequency, and duration of service, shown in [Figure 2](#).

Discussion

In this study, professionals, and members of four community organizations providing services to PWD described service delivery changes following the COVID-19 pandemic. This study is among the first to deeply explore these changes in community organizations dedicated to PWD in the Quebec region (Canada). Our findings resonate with a Dutch study that demonstrated the usefulness of offering online support because of the COVID-19 pandemic, but only with people living with intellectual disabilities [11]. In fact, our study adds that this usefulness could also be extended to services to people with physical disabilities. The median score of the level of satisfaction for accessibility and the way of providing services seems to be higher for the members compared to the staff. Staff could have difficulties evaluating those two variables and then give them a lower score of satisfaction, since these are fewer objective variables. Or the members could have appreciated the effort that organizations put to keep the accessibility and to figure out a way to provide services. The two organizations that seems to have higher general satisfaction scores also have higher specific satisfaction scores (i.e., the frequency of the service, the response to the needs in time of pandemic and the duration of each online activity) compared to others. Services provided by larger organizations in this study did not seem to have satisfied their members the most compared to the smaller ones. Unlike another study where larger organizations could have been expected to satisfy their members because of a larger number of staff; less important lack of personnel for various reasons, including staff testing positive for COVID-19 [31]. Furthermore, Zaagsma et al. [11] have recommended that organizations should include online support in addition to onsite support to increase their responsiveness toward changes during a crisis like the COVID-19 pandemic. Unlike the Zaagsma et al. study [11], which already had this service before COVID-19, the online services explored in this study were not all already up and running when the COVID-19 pandemic started, highlighting a quick adaptation. Our study shows that organizations had the flexibility to set up these adaptations. As in the Embregts et al. study [12], professionals of the community organizations, included in our study have also expressed creativity in the way they adapted their services. Direct support staff of Embregts et al. study [12] also highlighted the time pressure and the frustration and disappointment, which were not barriers mentioned by the staff members of the present study.

In Quebec, following the implementation of the health officer directives, some of the organizations under study transferred their services to the Zoom® platform. This platform facilitated the virtual transition and accessibility to various services during a pandemic crisis (e.g., members could participate in more activities). Finding that this software is the most accessible, aligns with a survey held in 2020 of people with a variety of disabilities, where 92% the participants indicated that Zoom® was the most accessible platform [32]. The functionality of the platform is accessible to people with VI using screen readers, magnification, and captions [32]. The simple task of logging into meetings can become a barrier for some users if the software or platform was not designed with accessibility in mind [32]. However, Zoom® offers the option to simply click on the link and immediately connect the participant [32]. Zoom® also allows you to join the call by phone, which is commonly used by the participants of the VI organizations. According to a study comparing the Zoom® platform to another software, BigBlueButton, Zoom® has the advantage of being a Windows program, where the interface seems to facilitate the screen reader, making it easily accessible [33]. Therefore, Zoom® seems to be the platform of choice for PWD, but other studies

could be carried out to compare it with other software, such as Teams[®]. According to a study conducted in the province of Quebec and British Columbia, Teams[®] and WebEx[®] softwares were also used, to deliver services as well as for internal meetings, by some organizations during this online transition [9]. Although these softwares were accessible for people with VI, the organization providing services to people with this type of disability experienced communication barriers, namely the cacophony generated by discussions through electronic devices and the lack of understanding of software functioning. To counter these barriers, a facilitator guide could be created to improve the user-friendliness of the various services that use Zoom[®], such as the service. The guide could include technical aspects for the animator, but also for the members. With the support of such a guide, members could feel more confident for their activity and could perceive a greater ease of use, perhaps leading them to use this modality more often in the future [34].

All included organizations recorded their online sessions. Concerns about confidentiality have been previously identified, as well as in other several studies: since the increasing rate of online community services, a few challenges for obtaining consent, protecting participants' privacy, and maintaining trust have emerged [35–37]. In all activities involving recordings, participants must not feel watched, and the host must establish a relationship of trust with their participants in addition to using tools that are safe, non-invasive and easy to use [37]. To maintain the confidentiality of the discussions held within the framework of the online session, the recording could be stopped just before the start of a period dedicated to the discussion, with the consent of all. They could also record the presenter and not the participants. The organizations do not want to limit the members in their discussions. In fact, the use of technology has been shown to be an effective way to protect and improve the mental health of PWD [7]. Dedicating a period for this socialization without being recorded might promote participation.

A possibility that was raised in our study was the fact that members could do the activity alone while viewing the recordings. By sending these recordings, participants might be able to listen to advice and exercises again at their own pace, which could lead to better understanding of information and repeatability of exercises or advises. These programs, mainly the physical activities, could therefore be more accessible to this population, which would make it possible to minimize deconditioning while ensuring their safety in a case of social isolation [7]. These workshops do not represent a big risk for the health and safety of their participants, compared to other classes, such as boxing classes, where the risk of falls is higher. Several studies have been carried out on patient safety following the increase in telerehabilitation and recordings. One of them recommended that the identification of the different obstacles can help clinicians recognize the risks and ultimately suggest methods to reduce the impact and improve adherence [38]. Another one suggested that therapists work individually with participants and set goals with them using a standardized participants specific measure (e.g., COPM or GAS). A survey could be carried out beforehand to gauge the anxiety of the participants, and the availability of others who can help them while listening to the recording. Thus, a recording of the sessions could be offered to participants, such as the one living with Parkinson's disease, by respecting some precautionary measures such as the presence of relatives during the online sessions to improve access to online services.

Regarding future use of the technology, the participants from the TBI organization reported that virtual services could be improved by pairing it with in-person services because members do not want

to lose this new format, which benefits them in a way. However, people belonging to this organization had experienced brain injury, which may triggered post-concussion symptoms such as headaches [39]. As a result of the COVID-19 pandemic, it has been recognized that the use of technologies has greatly increased across the population, according to a survey held by the INSPQ (Institut national de santé publique du Québec), 75% of Canadians aged between 15 to 49 said they spend more time on the Internet [40]. Prolonged use of electronic devices can cause headaches, migraines, blurred vision, and many other symptoms [41]. More vulnerable people such as PWD, and more specifically people with TBI, are more susceptible to these symptoms and more likely to develop them [41]. In order to maintain both ease of access and member participation, while reducing the fatigue of some people, bimodal services, including both face-to-face and virtual, could be a possible avenue for some organizations. Moreover, a study from the Netherlands suggests that organizations can increase their responsiveness towards online services and compensate for onsite changes during crisis like the COVID-19 pandemic [11]. This supports a prior study's findings that show that online services could adapt more easily than traditional onsite services to meet the needs of their members [42].

Finally, a lack of understanding of the different technological software in some organizations led to a lack of social interactions in some members who were unable to register in time for the available time slots, for example. For some, these problems may have created some anxiety over the loss of their spot for the activity [9]. Indeed, there are other potential sources of anxiety in older adults and PWD, such as the inability to access support services since the onset of the COVID-19 pandemic [9]. During the pandemic, the deconditioning, and the loss of the routine of PWD have been important issues. Already restricted before the COVID-19 pandemic, accessibility has further decreased with the application of health measures, along with the accentuation of predispositions to isolation, physical inactivity, and sedentary lifestyle, conditions that induce loneliness [9].

Strengths and limitations

This study has some limitations, such as the focus groups themselves (e.g., social desirability bias) and the recruitment method. In fact, by recruiting their members with direct contact, organizations may have put pressure on their members to participate. We tried to manage those limitations by involving group moderators who were independent of the organizations and working to create a safe and open environment [43]. Also, as mentioned by Krueger et al. (2009), focus groups should include four to six participants. However, the VI organization only recruited three members, which could have had an impact on the future commitment in the research action study. Along the same lines, the TBI organization represented nearly half of the study respondents. The predominance of this group in the study limits the transferability of our results. Perhaps, results may have been different if more participants from the VI organization were represented half of the participants, although data were not analyzed depending on the type or the number of disabilities of each participant. People with visual impairments tend to have limitations mostly regarding technicalities (e.g., The task of logging into meetings can become a barrier for some users if the software or platform does not include accessibility tools targeting people with visual impairments [44]). In order to meet an inclusiveness criterion with a small sample size, it would have been desirable to carry out a sampling for variation. In our study, other variables such as diagnosis or cultural diversity (e.g., immigrants with traumatic brain injury who have to learn a new language) were not considered to maximize the inclusiveness

of the study [42]. Despite these limitations, two data sources were used (quantitative questionnaires and focus group for qualitative data) to allow a triangulation of the data collection [21,43]. Moreover, the multiple case study design allowed for an in-depth analysis of each case within its context [21]. Furthermore, the researchers who completed the thematic analysis consulted with a co-author who was experienced in qualitative research [21].

Conclusion

Following the COVID-19 pandemic, several organizations began offering services virtually. This study provides an in-depth portrayal of the initiatives developed by four community organizations in the context of the COVID-19 pandemic and suggests way to improve these initiatives and make them sustainable beyond the context of the pandemic. Therefore, future studies will focus on assessing the new improvements implemented by the organizations, as well as the commitment and satisfaction of PWD with the intent that PWD will have easier access to community services beyond the pandemic.

Note

1. Quebec City and its suburbs represents approximately 820,000 inhabitants.

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ORCID

W. Ben Mortenson  <http://orcid.org/0000-0002-0183-6163>
François Routhier  <http://orcid.org/0000-0002-5458-6233>

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