Examining the Technology Experience Profile of Individuals with Disabilities from Sexual and Gender Diversity in Quebec, Canada

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Abstract

This study examined technology use among 30 people with disabilities identifying as LGBTQIA+ in Quebec, Canada. The sample demonstrated substantial diversity in gender identity, sexual orientation, and disability status. Participants showed moderate to high technology experience, with mean scores indicating competency to expert levels. Frequent use was reported for mobile phones, computers, email, and social media. Conversely, health-related technologies, such as blood pressure monitors, health management software, and medication reminder devices, were used less often. Findings suggest that people with disabilities identifying as LGBTQIA+ may prioritize technologies that support communication, connection, and socialization over those focused solely on health management.

1. Introduction

People with disabilities who identify as lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual, and other sexual orientations and gender identities (PD-LGBTQIA+) encounter multiple challenges to social participation stemming from the intersections of different systems of inequality. Technology can create safer spaces and offer different possibilities to increase social participation of this community. The literature on LGBTQIA+ populations has largely focused on how technology can foster identity development, relationships, and social supports (Berger et

al., 2021). In contrast, research on disabled people has tended to center on assistive technologies designed to compensate for function loss and support interaction with others, such as hearing aids, canes, and screen readers (Crawford et al., 2023). Yet assistive technology is not limited to specialized devices; everyday technologies, including smartphones, can also function as important forms of assistance and access (Barbareschi et al., 2019). However, little is known about technology use among PD-LGBTQIA+. For some disabled people, even widely used technologies, such as smartphones, can be inaccessible because of cost (Scherer, 2005). Even LGBTQIA+ disabled individuals who have access to technology often hesitate to use it due stigma, including within LGBTQIA+ digital spaces (Crawford et al., 2023).

The objective of this study is to describe the familiarity with, and experiences of, PD-LGBTQIA+ with different technologies in Quebec, Canada. This knowledge is crucial to improve their social participation.

2. Methods

2.1. Participants

A total of thirty French-speaking PD-LGBTQIA+ (mean age = 38.7 years, SD = 13.6) took part in the study. As shown in Table 1, the sample was highly diverse regarding gender identity, sexual orientation, and disability status. Most participants were born female (73.4%), identified as a cisgender woman (28.6%) or as gender fluid or non-binary (31.4%). The most common sexual orientations were queer (21.5%), lesbian (19.6%) or pansexual (19.6%). Most participants were White (83.3%), had pursued higher education (70%), were single (66.7%), and were physically disabled (53.3%). Examples of physical disabilities include motor, visual, and hearing impairments, while mental disabilities included autism spectrum disorder, posttraumatic stress disorder, and adult attention deficit hyperactivity disorder.

Sex at birth, n (%)	
Female	22 (73.4)
Male	7 (23.3)
Prefer not to answer	1 (3.3)
Gender identity, n (%)	
Cisgender woman	10 (28.6)
Cisgender man	4 (11.4)
Transgender woman	1 (2.9)
Transgender man	3 (8.5)
Gender fluid or non-binary	11 (31.4)
Does not know	1 (2.9)
Other	5 (14.3)
Sexual orientation, n (%)	
Asexual or aromantic	3 (5.9)
Bisexual	8 (15.7)
Homosexual or Gay	4 (7.8)
Lesbian	10 (19.6)

Pansexual	10 (19.6)
Queer	11 (21.5)
Demisexual	3 (5.9)
Abrosexual	1 (2)
Two-spirit	1 (2)
Race/Ethnicity, n (%)	
Black	1 (3.3)
Middle Eastern	1 (3.3)
White	25 (83.3)
Other	3 (10)
Education, n (%)	
Secondary school diploma	6 (20)
Registered apprenticeship or trade certificate/diploma	1 (3.3)
College or other non-university certificate/diploma	9 (30)
Undergraduate degree or some university education	6 (20)
Postgraduate degree or professional designation (e.g., Master's, PhD, MD)	6 (20)
Special education school	2 (6.7)
Marital status, n (%)	
Married	1 (3.3)
Common law	7 (23.3)
Single	20 (66.7)
Divorced	2 (6.7)
Type of disability, n (%)	
Physical disability	16 (53.3)
Mental disability	6 (20)
Both physical and mental disabilities	8 (26.7)

Table 1: Participants' sociodemographic characteristics (N = 30).

2.2. Measures

The Technology Experience Profile (TEP) is a self-reported questionnaire of 36 questions addressing individuals' familiarity and experience with different technologies over the past 12 months (Barg-Walkow et al., 2014). For each technology, participants were asked to rate on a five-point scale how much they have used the technology in the past year (1 = not sure what it is, 2 = not used, 3 = used once, 4 = used occasionally, 5 = used frequently). The technologies are separated into six categories: a) Communication technology, b) Computer technology, c) Everyday technology, d) Health technology, e) Recreational technology, and f) Transportation technology. A version in French was used in this study. The total possible score ranges from 36 to 180. Individuals' scores correspond to different levels of technology experience as follows: a) « Novice technology experience » with a score of 36 to 54, b) « Novice to beginner » with a score of 55 to 71, c) « Advanced beginner » with scores from 72 to 90, d) 'Advanced beginner to competent » with a score of 91 to 107, e) « Competent » with scores between 108 and 126, f) « Competent to expert » with a score of 127 to 143, and g) « Expert » with scores over 144. These categories complement those suggested previously (Hongyang, 2020). Also, the TEP revealed very good

reliability through internal consistency (Cronbach's alpha $\alpha > .8$), inter-rater reliability (Cohen's Kappa $\geq .80$), and test-retest reliability showing stable scores over the study period (Cronbach, 1951; Harris & Rogers, 2023). Evidence of good content validity comes from experts in gerontechnology and user feedback involved in the formulation of the items (Harris & Rogers, 2023). A factor analysis proved the construct validity of the TEP, showing that the items grouped coherently with the subscales of each dimension (Harris & Rogers, 2023). Concurrent validity with the Technology in Caring Questionnaire showed strong and positive correlations ($r = .578$, $p < .001$) and good criterion validity (Kiselica et al., 2024).

2.3. Procedure

The current study was approved by the Research and Ethics Board of the CCSMTL. Participants were recruited through community services and networks serving disabled people and individuals of diverse sexual orientations and gender identities, using posters, emails, and radio announcements. To be eligible, participants had to be non-heterosexual, be at least 18 years old, report having a diagnosis of a permanent physical or mental disability, and be able to provide consent. Interviews were conducted by members of the research team in person or via Zoom. When needed, a translator was invited to support individuals with hearing or communication disabilities. Participants completed the TEP based on their previous experiences with different technologies and received CAD$50 in compensation for their participation.

3. Results

The mean total score suggests that the cohort falls between the competent and expert levels in terms of technology use ($M = 136.5$, $SD = 13.6$). Indeed, most participants scored between 144 and 162 ($n = 12$, 40%). As higher scores indicate more frequent use of technology, these results may suggest that participants in our sample were relatively proficient (Hongyang, 2020). Table 2 presents the descriptive statistics of the sample's technology experience. An average of 3.8 ($SD = 0.4$) on the scale indicates that most of them are occasional technology users. Descriptive analysis revealed that the lowest level of technology use included health technologies ($M = 3.0$, $SD = 0.7$), transportation technologies ($M = 3.4$, $SD = 0.7$), and recreational technologies ($M = 3.7$, $SD = 0.6$). The highest levels of technology were in areas of computer technologies ($M = 4.5$, $SD = 0.4$), followed by communication technologies ($M = 4.2$, $SD = 0.4$), and everyday technologies ($M = 3.9$, $SD = 0.4$). Mobile phones ($M = 4.8$, $SD = 0.6$), computers ($M = 4.8$, $SD = 0.6$), email ($M = 5.0$, $SD = 0.0$), and social media ($M = 4.9$, $SD = 0.3$) were used frequently. In contrast, technologies such as blood pressure monitors ($M = 2.8$, $SD = 1.1$), health management software (e.g., for diet and exercise) ($M = 3.0$, $SD = 1.4$), and medication reminder devices ($M = 3.0$, $SD = 1.3$) were used less often, with mean ratings corresponding approximately to "used once."

TEP Domains	Mean (SD)	Min	Max
TEP Total Score	3.8 (0.4)	2.9	4.4
Communication technology	4.2 (0.5)	2.8	5
Computer technology	4.5 (0.4)	3.5	5
Everyday technology	3.9 (0.4)	3.2	4.5
Health technology	3.0 (0.7)	2	4.7
Recreational technology	3.7 (0.6)	2.3	4.5
Transportation technology	3.4 (0.7)	2.3	4.7

Table 2: Participants' mean scores for the Technology Experience Profile categories (N = 30).

4. Discussion

We have described familiarity with, and experiences of, different technologies among a group of 30 PD-LGBTQIA+ in Quebec, Canada. In this sample, the lowest level of technology use were reported for health, transportation, and recreational technologies, whereas the highest levels were found for computer, communication, and everyday technologies. These findings are notable given that the sample primarily consisted of individuals with physical disabilities (53.3%), for whom health-related technologies might be expected to play a more prominent role. This is not surprising, as Barbareschi et al. (2019) suggest that communication and computer technologies can function as assistive technologies for disabled people. Other studies have also shown that technology plays a role in sexuality and in the pursuit of romantic relationships (Crawford and Hamidi, 2025; Patel et al., 2025). These findings suggest that PD-LGBTQIA+ may prioritize technologies that facilitate social connection over those designed for health-related purposes. This preference could be leveraged to promote social participation, particularly within LGBTQIA+ spaces, by using technology to foster inclusion, engagement, and community building. However, as this was not directly measured in the study, this interpretation should be treated with caution. Lower use of health-related technologies may also reflect lack of access, cost, lack of perceived need, accessibility barriers, stigma, or differences in disability type and health status. LGBTQIA+ individuals with disabilities can experience higher rates of poverty and underemployment, which prevents them from purchasing many health technologies, such as specialized Apps, telemedicine hardware, and wearable monitors. Those technologies are prohibitively expensive and may not be covered by insurance. Accessibility barriers can also be a potential explanation. Digital tools and health platforms are frequently designed without considering the needs of users with sensory or cognitive disabilities, including lack of screen-reader compatibility, complex navigation, or insufficient accommodations. Many LGBTQIA+ people with disabilities may not feel the need to use health technologies. Given that frequently health technologies are often developed with a "one-size-fits-all" approach that ignores intersectional identities., these tools are rarely tailored for LGBTQIA+ people with disabilities. Finally, the specific type of disability and overall health status may have an influence in technology experience. For instance, individuals with chronic fatigue or mobility challenges may rely heavily on telemedicine, while others may find certain technologies incompatible with their physical or mental health conditions.

5. Conclusion

This study aimed to describe the technology experiences of PD-LGBTQIA+. We found that health technologies were often reported as being used only occasionally, whereas computer and communication technologies were used more frequently. These findings carry important implications. On the one hand, they highlight the importance of technology in the lives of PD-LGBTQIA+, particularly as a means of facilitating social participation through connections with online communities. On the other hand, they also point to how technology can act as a barrier to social participation, including through stigma surrounding its use. However, the present study has several limitations: a small sample size, a mostly White and highly educated sample, and a focus on a limited geographical area, which restricts generalizability. These findings are therefore exploratory and descriptive. Considering the sample characteristics, the findings must be considered as exploratory and descriptive, rather than as evidence of broader patterns.

Future research should examine differences in technology use across disability groups within PD-LGBTQIA+ populations and consider the influence of living environments, such as urban and rural settings. To enhance social participation through technology, it is important to involve PD-LGBTQIA+ in the co-design of new technologies and better understand their perceptions and lived experiences of technology use. This could be achieved by following the notion of "radical accessibility" in co-design, which embraces intersectional experiences and creates a space that aims to provide safety, allowing participants to define the terms of their own participation and needs (Drysdale et al., 2026). Overall, technology represents both a challenge and an opportunity, making its inclusive development crucial to supporting social participation among PD-LGBTQIA+.

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