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Abstract #292

Experiences with Technology among Adults Aging with HIV Engaged in an Online Community-Based Exercise Intervention Study: a Longitudinal Qualitative Descriptive Study and Secondary Data Analysis

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Objectives: Our aim was to describe experiences with technology uptake and usage among adults living with HIV participating in a six-month online community-based exercise (CBE) intervention.

Methods: We conducted a longitudinal qualitative descriptive study using interview data from adults aging with HIV in Toronto, Canada. Participants engaged in a six-month online CBE intervention in partnership with the YMCA, consisting of thrice weekly exercise, supervised biweekly with online personal coaching sessions, weekly group exercise classes, and monthly self-management education sessions (via Zoom©). Technology included Zoom© software and webcam; Sweat for Good YMCA App© and YMCA Virtuagym Website©; and participants wore a wireless physical activity monitor (Fitbit Inspire 2©) throughout. Participants completed interviews at baseline and post-intervention. We conducted a group-based content analysis of interview transcripts, focusing on digital access, setup, usage, and perceptions of technology. Questionnaire data describing digital literacy and access to technology provided additional context to the interview data.

Results: Eleven participants completed at least one interview (six women, five men; median age 52 years). Experiences with technology uptake and usage among adults aging with HIV were characterized by four components: i) preparations for technology; ii) interactions with technology; iii) facilitators and satisfaction with technology; and iv) challenges and frustrations with technology, that interacted with intrinsic contextual factors (prior exposure with technology) and extrinsic contextual factors (COVID-19 pandemic, technological and social support).

Conclusion: Experiences with technology among adults aging with HIV engaging in an online CBE intervention varied from increasing ease of use, to increasingly burdensome over time. Results highlight the need to incorporate personal preferences, and ongoing technological support when implementing online CBE intervention with adults aging with HIV.

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Tele-Coaching Community Based Exercise Research Study

Physical Therapy UNIVERSITY OF TORONTO

Introduction

- **Physical activity (PA) and exercise** can mitigate episodic disability and improve overall health outcomes among adults aging with HIV.
- **Community-Based Exercise (CBE) interventions** – supervised, group-based programs promote physical activity support among adults living with HIV and can be delivered online to reduce barriers.
- **Online tele-coaching CBE interventions** use technologies (e.g., web-based platform, applications, Zoom©, PA monitors) to deliver care and promote sustained exercise engagement in adults living with HIV.
- **Limited research** has explored user experiences, or how these experiences have evolved over time.

Objectives

1)To describe **experiences** with technology uptake and usage and the **contextual factors** that might influence experience with technology among adults aging with HIV in an online tele-coaching CBE intervention.

2)To describe how experiences with technology may **change over time** among adults aging with HIV engaging in an online tele-coaching CBE intervention.

Methods

Study Design: Longitudinal qualitative descriptive study using interviews from participants who engaged in a 6-month online tele-coaching CBE intervention.
Participants: 11 Community-dwelling adults aging with HIV who completed at least one interview at baseline (T1) or post-intervention (T2).
Intervention: Online 6-month CBE intervention including: biweekly supervised exercise sessions and monthly self-management education sessions via Zoom©, self-directed YMCA app-based content, and use of a Fitbit© Inspire 2 wearable physical activity monitor (WPAM).

Data Sources:
- **Qualitative:**
  - Interview transcripts at baseline and post-intervention.
- **Quantitative:**
  - Information and Communication Technology (ICT) Development Index (15 items) administered at month 0 to describe participants' digital access, connectivity, use and literacy.
  - Telehealth Indicator Questionnaire (22 items) administered at months 2 and 6 to assess telehealth domains of Usability (7 items), Helpfulness (6), Satisfaction (6 items), and Reliability (3 items).
  - Demographic questionnaire administered at month 0 to describe personal and clinical characteristics of participants.

Data Analysis
- Interview Data: Team-based content analysis.
- Questionnaire Data: Frequency and percentage for the ICT Index, Telehealth Indicator, and Demographic questionnaires. Direction of change assessed in Telehealth Indicator Questionnaire across responses at month 2 and 6.

Results

Table 1. Personal characteristics of participants (n=11)

Participant Characteristics included in secondary analysis (n=11)	
Personal Characteristics	**Median (25th, 75th percentile)**
Age in years	52 (45, 60)
Sex	**# (%)**
Female	6 (55)
Male	5 (45)
Average gross yearly income (CAD)	
Less than $20,000	4 (36)
$20,000 to less than $40,000	3 (27)
$40,000 to less than $50,000	2 (18)
More than $50,000	2 (18)
Education level	
Completed college	5 (45)
Completed university	3 (27)
Post-graduate education	3 (27)
Ethnicity (n=12)*	
Black	6 (55)
South Asian	3 (27)
Latin American, Hispanic, or Latino	1 (9)
Southeast Asian	1 (9)
White	1 (9)

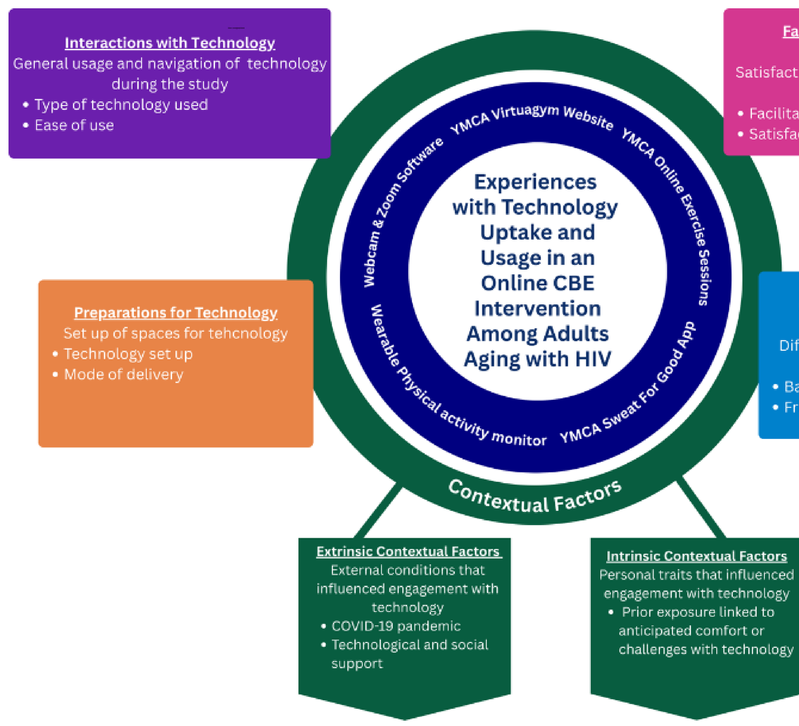
*One participant listed two ethnicities.

Table 2. Access to, Skills and Use of Technology from ICT Index (n=11)

Variable	Responses (n=11)
Access to Technology	
Access to a type of technology	**# (%)**
Cell phone	10 (91)
Laptop computer with webcam	9 (82)
Tablet	5 (45)
Desktop computer with webcam	4 (36)
Most reliable access to internet	
Wi-Fi	9 (82)
Through a wired connection	2 (18)
Skills & Use of Technology	
Comfortable using the World Wide Web with a browser	11 (100)
Comfortable sending and receiving emails	11 (100)
Comfortable using online meeting tools	11 (100)
Comfortable using wireless physical activity monitor	11 (100)
Comfortable using webcam	11 (100)
Comfortable using physical activity apps to track activity	11 (100)

Results

Experiences with Technology Uptake and Usage in an Online CBE Intervention among Adults Aging with HIV



"I'm hoping I can run a Zoom meeting off my iPhone. But I think what I'm going to need is get a cable to connect to the HDMI cable on the TV. So it's just a bit of technical stuff to get all that set up. I've got a little tripod that I can set the phone on. The microphone will work through the phone. It will just be a question of running the display out of the phone with a cable into the HDMI connection." (P5, T1)

"I like wearing it [Fitbit] but not for the reason for exercise because I don't understand anything on it. I like it for two reasons; number one, I can see steps and number two I can see time […]. Besides that, because I don't know technology, I didn't really benefit from the usefulness of having a Fitbit that it can tell you more stuff. But for these two reasons it was good enough for me". (P11, T2)

"I like it [Fitbit] for two reasons; number one, I can see steps and number two I can see time. It's like a watch… I can usually see time and I never thought I'd miss the watch but when I don't have it, if I don't have it or if I took it off for a shower, oh where is it. So it's almost like I got used to wearing a watch again when I had forgotten the watch for the longest time. Then the other thing is if I do this it tells me steps." (P11, T2)

"The biggest demotivator for this whole thing is that The biggest demotivator for this whole thing is that stupid Fitbit that they gave us, utterly useless, good for nothing, utterly useless. The only thing I use it for is to count whether it's counting the number of steps. That's it. Every month since I got it there's been some issue with it. For some reason it went into some other country time on its own and then at some point it just completely the screen was blank and it dimmed on its own at some point. Every time it does something on its own." (P7, T2) stupid Fitbit that they gave us, utterly useless, good for nothing, utterly useless." (P7, T2)

Experiences with Technology Over Time

Interview Transcripts:
- Participants had varying experiences with technology overtime. Initial attitudes towards the technology did **not** always **predict** participants' **engagement** with the technology.
- Some participants described technology **burden** and **fatigue** that emerged over the course of the intervention (P5,T2).
- Other participants had **neutral** attitudes towards the technology across T1, and T2
- Some participants were **optimistic** and had intention of continuing use post-intervention (P8,T2).

"This synching up for the Fitbit© and the recording on what's gone on over the week, it gets to be a bit of a pain to be honest." (P5, T2)

"And even giving this Fitbit©, like I will use it. If it is damaged, I'm going to buy another one because Fitbit© gives all that report." (P8, T2)

Table 3. Summary of direction of change in responses at month 2 and 6 of the 22 item Telehealth Indicator Questionnaire (n=8).

Comparison between participants' responses	Comparison between individual items
75% (n=6) showed **NO CHANGE** in direction in most of their responses across all domains in the Telehealth Indicator Questionnaire .	Across 14 of 22 items, most participants (50; 88%) showed **NO CHANGE** in direction Two **exceptions**: • 63% (n=5) showed a **POSITIVE** direction of change for *usability* and *helpfulness* of self-directed learning modules • 50% (n=4) showed a **NEGATIVE** direction of change in response to the *usability* of the Fitbit© and *helpfulness* of the YMCA Virtuagym Website

Discussion

Despite **all** participants reporting comfort with the technology, interviews, and questionnaire data revealed:

- **Motivation for engaging with technology** appeared to be linked to physical health goals, not the technology itself, making it difficult to separate tech-driven from intervention-driven engagement.
- **Varied adjustments to technology:** Some participants grew more comfortable with technology over time, whereas others disengaged due to technology issues and limited support.
- **Positive experiences** occurred when technology was seamless, flexible, and aligned with participants' personal health goals.
- While general trends mirroring other older adult populations, HIV-specific factors amplified certain challenges such as stigma, and the importance of community connection.
- **Changes in technology experiences** highlight the need of continuous support and flexibility, as some participants' gained confidence, while others disengaged due to unresolved challenges.

Strengths & Limitations

- Combining interview and questionnaire data provided in depth understanding of participants' experiences with digital tools and processes uptake and usage;
- As a secondary analysis: interviews were not designed to focus on technology, limiting insights into technology-specific experiences;
- Participants were limited to adults with HIV in Toronto, which may limit transferability of findings to rural and remote settings.

Conclusions

- Technology uptake and usage among adults living with HIV in the online CBE intervention was shaped by four components which interacted with both extrinsic and intrinsic factors.
- Experiences with technology among adults aging with HIV engaging in an online CBE intervention varied from increasing ease of use, to increasingly burdensome over time.
- Tailored onboarding, continuous support, and lived experience are key to optimizing digital health interventions for this population.
- Results highlight the need to incorporate personal preferences, and ongoing technological support when implementing online CBE intervention with adults aging with HIV.

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