

Tele-Coaching CBE Study – TEx Study

Piloting an Online Tele-Coaching Community-Based Exercise Intervention Study with Adults Ageing with HIV

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Community Based
Exercise Research
Study



Protocol for the study can be accessed here

BMJ Open, 2023:

<https://bmjopen.bmj.com/content/13/3/e067703.full>



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Tele-Coaching CBE Study Team

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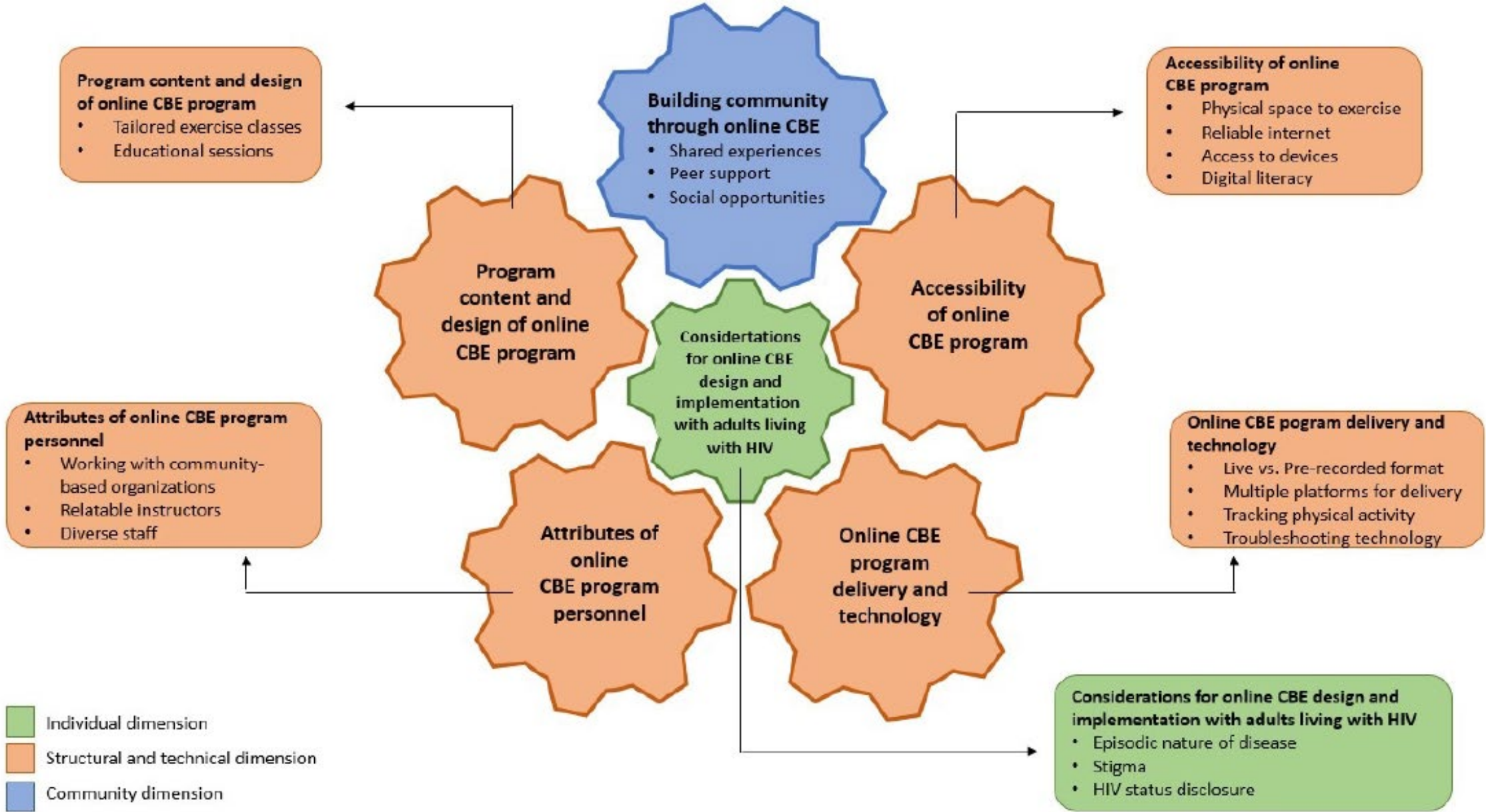
Background

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- **Exercise** can lead to improvements in cardiopulmonary, strength, weight and body composition and quality of life outcomes for adults living with HIV.
- Engagement in exercise among adults living with HIV varies.
- **Community-based exercise (CBE)** can help manage health-related challenges associated with HIV and concurrent conditions.
- Environmental, personal, and social barriers can exist to exercising in gym environments, especially during the COVID-19 pandemic.
- **Online forms of CBE** may be one rehabilitation strategy to help manage disability experienced by adults living with HIV.

Factors to Consider – Tele-Coaching Implementation



Study Aim & Objectives

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To evaluate the implementation of an online tele-coaching CBE intervention for adults living with HIV.

- 1) Extent of participation (**Reach**)
- 2) Impact of intervention on engagement in physical activity (**Effectiveness**)
- 3) Strengths and challenges of implementation (**Adoption & Implementation**)
- 4) Engagement in exercise over time (**Maintenance**)

Study Design, Participants & Recruitment

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Study Design

Longitudinal mixed methods intervention study
Implementation science approach (RE-AIM)

Participants

- Adults living with HIV (≥ 18 years) ~30 participants
 - Consider selves medically stable and safe to exercise
 - Physical Activity Readiness Questionnaire (PAR-Q+)
 - Access to Technology (i) smart phone, tablet, laptop, desktop, ii) data plan/Wi-Fi, iii) web-cam
 - Able to speak, read, understand English
 - Ability to engage in tele-coaching sessions; completion of questionnaires; interviews

Recruitment

- [Ontario HIV Treatment Network Cohort Study \(OCS\)](#)-Sub-study question of interest–Maple Leaf Medical Clinic
- [Recruitment Posters \(MLMC, Community\)](#) - Targeted to individuals who self-identified as facing geographical, personal or structural barriers to exercising in traditional gym environments.
- $\geq 30\%$ cis-women and trans women

Phase 1 - Online Intervention – 6 months

Exercise: Combination of aerobic, resistance, balance and flexibility exercise (**3x/week**)

Online individually tailored one-on-one training exercise sessions with a personal trainer, involving supervision and progression of exercise (**Bi-weekly**)



Online Coaching Sessions



Aerobic Exercise



Resistance Exercise

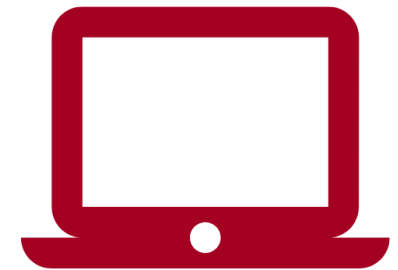


Balance and Flexibility Exercise

Online group educational sessions: topics included sleep, nutrition, goal setting, cognitive health, chronic pain, and other topics related to self-management, health, and physical activity living with

HIV

(Monthly)



Online Group Educational Sessions

Participants were provided with the following:



Exercise App



Wireless Physical Activity Monitor



Home Exercise Equipment

Phase 2 – Follow-Up Independent Exercise – 6 months

Data Collection – Qual and Quant

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Qualitative Interviews (10 adults with HIV and 5 CBE stakeholders)

- Pre (T1), Post-Intervention (T2), Post-Follow-Up (T3)



Phase 1 - Intervention

Phase 2 – Independent Exercise

WEEKLY - Physical Activity Data Collection (Obj. 3: Maintenance):


- Weekly email - CBE Physical Activity Questionnaire
- Wireless Physical Activity Monitor (Fitbit®)



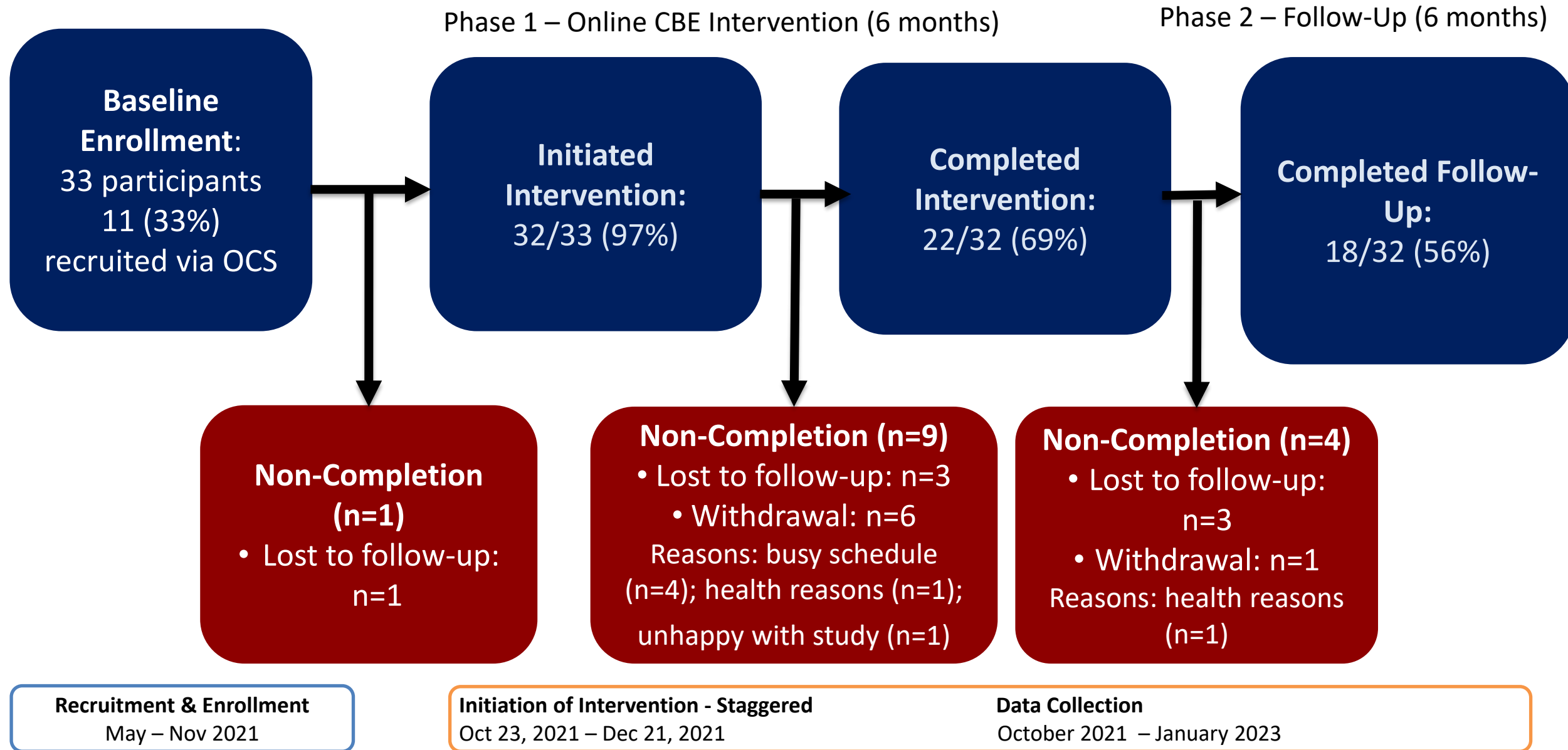
 Goal Attainment Scale Interviews

 Physical Fitness & Questionnaire Assessments

- Physical Fitness & Function
- Physical Activity, Disability, Health Outcomes, Cost

-  Fidelity
- Brief interviews - FOI Check-List Assessment (adults living with HIV) (Month 2 and 6)
 - Feasibility of the tele-coaching intervention – Cost & Telehealth indicators (questionnaires)

Participant Retention



Participant Characteristics

Participant Characteristic at Baseline	Initiated Intervention (n=32) N (%)	Completed Intervention (n=22) N (%)	Completed Follow-Up (n=18) N (%)
Median age in years (IQR)	53 (43, 60)	57 (44, 63)	57 (44, 64)
Gender			
Cis-Man	22 (69%)	16 (73%)	13 (72%)
Cis-Woman	9 (28%)	5 (23%)	4 (22%)
Non-binary	1 (3%)	1 (5%)	1 (6%)
Median year of diagnosis (IQR)	2002 (1991, 2012)	2004 (1989, 2010)	2006 (1989, 2010)
Currently taking antiretroviral medication	32 (100%)	22 (100%)	18 (100%)
Median # of comorbidities (IQR)	3 (1, 7)	3 (1, 7)	3 (1, 7)
Living with ≥ 2 comorbidities	23 (72%)	15 (68%)	13 (72%)
Common comorbidities (>30%) included:			
Gastrointestinal conditions	15 (47%)	11 (50%)	10 (56%)
Mental health condition (e.g. depression, anxiety)	12 (38%)	6 (27%)	5 (28%)
Trouble sleeping (insomnia)	11 (34%)	7 (32%)	6 (33%)
Cognitive decline	10 (31%)	5 (23%)	4 (22%)
Employment status – working full or part time	15 (47%)	11 (50%)	9 (50%)
Gross yearly income <\$30,000 CAD	14 (44%)	8 (36%)	6 (33%)
Currently living alone (n=29; 28; 20; 16)	12 (43%)	9 (45%)	9 (50%)
Cigarette smoking history			
currently smoke regularly/occasionally	5 (16%)	4 (18%)	3 (17%)
Overall general perceived health			
Excellent, very good or good	25 (78%)	19 (86%)	15 (83%)

59% of men completed;
40% of women

Living with concurrent mental health condition ~ third of participants

Goal Attainment Scale @ baseline

Common Types of Goals at Baseline	N (%)
Weight loss/body image/body composition	25 (76%)
Cardio/endurance	15 (45%)
Dietary/Hydration	12 (36%)
Improve Strength	11 (33%)
Increase physical activity	10 (30%)
Improve Flexibility	8 (24%)
Improve mental health or mindfulness	7 (21%)
Balance/falls prevention	4 (12%)
Improve Sleep	4 (12%)
Reduce pain	2 (6%)
Improve medical outcomes (e.g. blood pressure, joint health)	2 (6%)
Other (e.g. help family become more active, sports performance related goals, improve restless leg syndrome)	4 (12%)

Physical

Mental Health

Function

*totals will not add up because many individuals had goals that crossed multiple categories

Goals at Baseline – Qualitative Interviews



Goals are multi-dimensional, spanning physical, mental, and functional health domains

just improving health...overall wellbeing...high blood pressure runs in my family. So if I can manage to be as active as I can and losing weight will be a bonus. But I really want to cut down on the blood pressure medications so that I can improve my health. That's the main thing. And clarity, just mental clarity just to be active and engaged, able to focus more (P2 – woman)

*I want to be fitter... I want to have stronger legs and I want to have stronger arms because my legs are not strong. When I squat to sit down on the toilet or even to squat down to get up, I've got to push up with my arms. My legs are not strong to get me up.
(P25 – woman)*

Engagement – Physical Activity @ Baseline (n=33)

58% (n=19) of participants who enrolled in the online CBE intervention self-reported that they were **engaged in at least some exercise at the time of enrollment.**

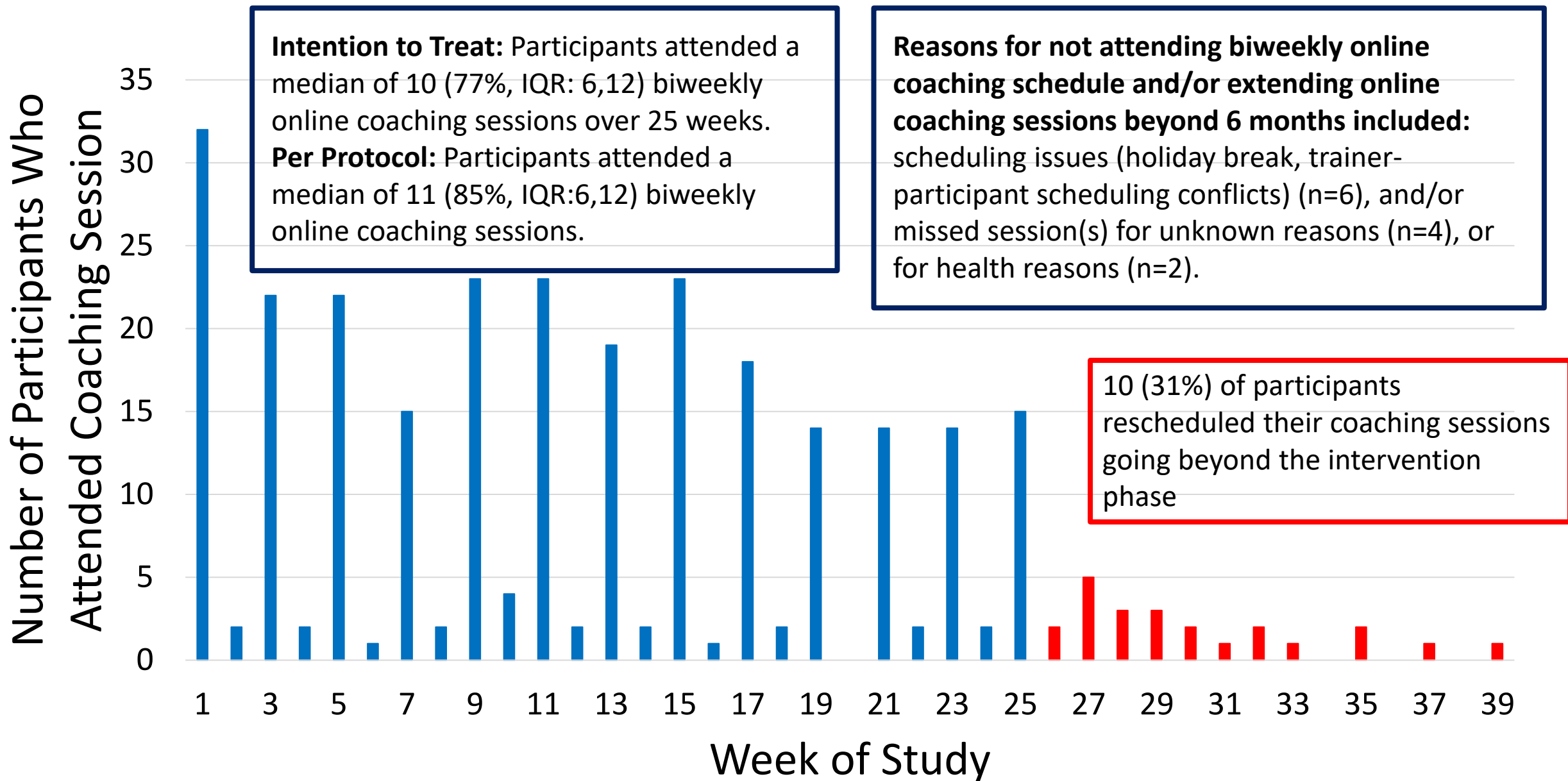


Engagement – Physical Activity

Physical Activity in past week	Baseline	End of intervention (month 6)	End of study (month 12)
RAPA 1— Aerobic	n=32	n=20	n=17
Sedentary	0 (0%)	0 (0%)	0 (0%)
Under-Active	0 (0%)	0 (0%)	0 (0%)
Under-Active Regular- Light activity	11 (34%)	0 (0%)	1 (6%)
Under-Active Regular	5 (16%)	7 (33)	2 (12%)
Active	16 (50%)	13 (62%)	14 (82%)
RAPA 2—Strength / Flexibility	n=32	n=21	n=17
None	16 (50%)	3 (14%)	4 (24%)
Strength Only	5 (16%)	2 (10%)	0 (0%)
Flexibility Only	5 (16%)	2 (10%)	4 (24%)
Both Strength & Flexibility	6 (19%)	14 (67%)	9 (53%)

Exercise History	N (%)
N=32 at baseline	
In the past week, how many days have you exercised?	
0 (none)	11 (34%)
1 day	2 (6%)
2 days	5 (16%)
3 days	7 (22%)
4 days	3 (9%)
5 days	1 (3%)
6 days	0 (0%)
7 days	3 (9%)
In the past week, did you do at least 150 minutes of moderate to vigorous aerobic physical activity?	
Yes	10 (31%)
Did you engage in muscle or bone strengthening activities (resistance activities) at moderate or greater intensity at least 2 days this past week?	
Yes	6 (19%)

Engagement – Biweekly Personal Online Training



Qualitative Data – End of Study - Impact

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*I didn't lose a lot of weight but I lost a good number. I can't remember what the kilos said. Since I was on my own I think about four or five kilos on my own because during the winter time... and when I went home I was walking a lot with the kids. We did a lot of walking. I thought I was going to gain weight but I'm being mindful. So **physically** I can see the... and even **mentally** too. Like once you start exercising, your head is cleared up a little bit more. I find some things that used to frustrate me more, they don't frustrate me anymore. (P2 - woman)*

this whole year, has helped me see myself outside of myself... I know it sounds weird but I think that's important because as a PHA we can stay in our small worlds with our television because that's our safety net, living with stigma... basically I was in a rut.... something like this is wonderful ... what it did for me was it pushed me more and... look at me today. Not only have I gone through this challenging year but I rebuilt my resume, I've met with an employment consultant, I've signed up for computer classes yesterday... what this has done is it has set me up.... to not be basking or relying on things like ODSP. I want to get to a place where I'm self sufficient again in that regard and now I know it'll happen (P20- man)

Qualitative Data – End of Study - Impact

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***It did impact me mentally...** we were isolated during COVID and just the mere fact that you were able to have someone that you could talk to and in a way interact with even though it was on a computer was both mentally, certainly mentally, but also probably because of what we were interacting about...because we were doing physical activity, it had a good and a positive and a meaningful impact on both those areas (P23 – man)*

***I really enjoy walking...** I get into a zone and I just walk.... the walking thing has become a really important component of my daily or weekly activity... the biggest thing is...having the walk routine as an integral part of my life...I know that there's much more that I can do. I'm aware... it heightened my awareness. (P34-man)*

***for the body image one,** that's something that I work on daily. So every night before bed my kids and I we say one good thing about our body that is amazing or nice or unique or whatever. So that's had a huge impact in just my overall view...just focusing on taking the time to move and making that a priority in any way that I can. (P8-woman)*

Summary & Lessons Learned

- Most who initiated, completed the online CBE intervention (69%), and follow-up phase (56%).
- Adherence to the online coaching sessions (77%) - may have been positively influenced by the majority (58%) self-reported as engaged in exercise at enrollment.

Lessons Learned

- Complex intervention with multiple components and technologies
 - Ongoing communication with participants, YMCA staff, research staff - critical throughout.
- Gender, health status (including cognitive and mental health), and economic status may influence engagement in and adherence to online CBE interventions.
- Factors that influenced retention and adherence to the biweekly online coaching sessions highlight the potential episodic nature of health living with HIV, and environmental and social factors influencing implementation to address in future research.

Next Steps – Analysis in progress

- Explore environmental, personal, and social factors influencing retention and adherence to exercise.
- Identify and implement strategies to optimize adherence to and engagement in online CBE interventions.
- Findings may inform larger scale implementation of online CBE interventions for people living with HIV and other episodic health conditions.

Thank you & Acknowledgements

Participants

Community partners

YMCA Team

- Ivan Ilic, Zoran Pandovski, Mehdi Zobeiry
- YMCA Personal Training Team: Annamaria Furlan, Helen Trent, Emilia Przybyl, Dwayne Campbell

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Online Learning Modules: Francisco and Tiz

OCS Recruitment: Raj Maharaj, Mona Loutfy, Tsegaye Bekele, Abigail Kroch

Ambassadors: Shaz Islam, Colleen Price, Joanne Lindsay, George Da Silva

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Videos from YMCA Coaches



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