

**Table S1** Learning objectives of a training program for peer mentors to deliver physical activity behavioural discussions to inactive individuals living with and beyond cancer.

Phase	Week	Session/Module Outline	
		Asynchronous, Online Module (1 module weekly, approx. 1 hours)	Synchronous, Live Workshop (2-hour workshop, once weekly)
Training (Phase I)	<b>Week 1</b> Introduction to Intervention, Physical Activity & Peer Mentorship	<b>Module 1</b> 1. Intervention introduction 2. Benefits of physical activity 3. Physical activity guidelines for individuals living with and beyond cancer 4. Safety considerations	<b>Workshop 1</b> 1. Review of physical activity guidelines 2. Peer support 3. Behavioural counselling skills practice
	<b>Week 2</b> Barriers, Self-Regulation & Behavioural Skills Training	<b>Module 2</b> 1. Barriers to exercise 2. Overview of self-regulation for physical activity	<b>Workshop 2</b> 1. Week 1 review 2. Review of self-regulation w/ a focus on goal setting and action planning 3. Active Listening and Communication skills (informed by Spirit of Motivational Interviewing) 4. Behavioural counselling skills practice
	<b>Week 3</b> Regulatory and Reflexive Processes & Behavioural Skills Training	<b>Module 3</b> 1. Habit formation 2. Intervention logistics (i.e., ethical considerations, adverse events)	<b>Workshop 3</b> 1. Week 2 review 2. Review of habit formation 3. Leadership skills 4. Collaborative brainstorming 5. Behavioural counselling skills practice
	<b>Week 4</b>	<b>Module 4</b>	<b>Workshop 4</b>

Identity & Behavioural skills training	<ol style="list-style-type: none"> <li>1. Identity formation</li> <li>2. Intervention logistics (Navigating Zoom, Peer Mentor Responsibilities)</li> </ol>	<ol style="list-style-type: none"> <li>1. Week 3 review</li> <li>2. Review of identity formation</li> <li>3. Review ethical considerations and peer mentor roles</li> <li>4. Collaborative problem-solving</li> <li>5. Handling Resistance</li> <li>6. Behavioural counselling skills practice</li> </ol>
<b>Assessment (Phase II)</b>	<b>Week 5</b> Peer Mentor Evaluations	<ul style="list-style-type: none"> <li>• Role play of a mock behavioural counselling session with a research team member acting as a mock participant (<i>Time commitment = 1 hours</i>)</li> <li>• Online, 13 Question Knowledge Quiz (<i>Time commitment = ~30 minutes</i>)</li> </ul>

### Knowledge Quiz Items

1. What are the recommended physical activity guidelines for cancer survivors?
  - a. ≥150 minutes/week of moderate-to-vigorous physical activity
  - b. ≥2 days of resistance training for all major muscle groups
  - c. ≥3 days of, at least 30 minutes of aerobic and/or resistance training at a moderate intensity
  - d. **All of the above**
2. To ensure confidentiality of participants information, peer mentors should:
  - a. Not remove peer mentor logs from the OneDrive account
  - b. Not discuss any participant information and peer mentor with anyone other than the research team
  - c. Report any breaches of confidentiality to the research team
  - d. **All of the above**
3. If a participant discloses an adverse event during a one-on-one behavioural discussion, peer mentors should:
  - a. try to deal with it on their own
  - b. report it to the research team in as much detail as possible
  - c. inform the participant that you will be reporting it to the research team
  - d. **B & C**
4. Goal setting should follow SMART guidelines meaning that goals should be:
  - a. **Specific, Measurable, Attainable, Realistic, Timely**
  - b. Specific, Manageable, Attainable, Relevant, Timely
  - c. Suitable, Measurable, Adjustable, Realistic, Tailored
  - d. Specific, Measurable, Adaptable, Realistic, Tailored
5. True or False: Physical activity should be performed all in one bout throughout the day.
  - a. True
  - b. **False**
6. To develop an exercise-related identity, cancer survivors can:
  - a. Prioritize activities aligning with physical activity in their everyday routine
  - b. Share their physical activity goals and progress with others
  - c. No strategies needed, just keep being physically active, it'll happen
  - d. **A & B**
  - e. All of the above
7. True or False: Cancer survivors should wait until faced with a barrier to strategize how to overcome it
  - a. True
  - b. **False**
8. Scenario: Carol was walking on her treadmill at home at a moderate intensity. As she was walking she noticed herself feeling unusually fatigued and nauseous. What should she do?
  - a. Continue walking just at a slower pace
  - b. **Stop walking, rest and wait for the symptoms to pass, call her doctor if it doesn't pass**
  - c. Stop walking, call her doctor immediately
  - d. Stop walking, wait for the symptoms to pass then start walking again once they do

9. Physical activity habits are best formed when:
  - a. **Performed consistently in stable environments**
  - b. Performed regularly for at least 3 weeks
  - c. Physical activity is rewarded
  - d. None of the above
10. Apart from delivering behavioural discussions, my role as a peer mentor DOES NOT include:
  - a. Tracking participant progress and taking notes during behavioural discussion sessions
  - b. Scheduling behavioural discussion sessions with assigned participants
  - c. Reporting any adverse events to research staff
  - d. **Collecting or reviewing survey data**
11. What should a participant do when they are experiencing a lapse in their physical activity behaviours for a few weeks?
  - a. Start at a smaller, more manageable volume by reducing the frequency or duration of physical activity goals
  - b. Get upset with themselves
  - c. Revisit the strategies discussed throughout the trial
  - d. **A & C**
12. Which of the following is NOT a behavioural regulation strategy
  - a. Scheduling
  - b. Planning
  - c. **Identifying benefits of physical activity**
  - d. Self-monitoring
  - e. Goal setting
13. Social support physical activity can look like:
  - a. Holding a family member accountable for physical activity
  - b. Being physically active with a friend
  - c. Talking about physical activity goals with others
  - d. Encouraging your spouse to be physically active
  - e. **All of the above**

**Standardized Mock Role Play Scoring Items**

	Poor	Needs Improvement	Satisfactory	Good	Exceptional
1. Using various behaviour change techniques to discuss physical activity promotion.	1	2	3	4	5
2. Responding to questions about physical activity and behaviour change strategies.	1	2	3	4	5
3. Listening to and understanding participant experiences with physical activity and directing towards appropriate support/resources.	1	2	3	4	5
4. Using previous experiences with physical activity following a cancer diagnosis to inform behavioural discussions and provide advice.	1	2	3	4	5
5. Providing emotional support in addition to delivering the pre-specified intervention content.	1	2	3	4	5
6. Handling resistance to support or intervention content appropriately.	1	2	3	4	5
<b>General Feedback:</b>					

**Table S2** Overview of the 6-week, peer-led PA behaviour change intervention.

<b>Format</b>	<b>Week</b>	<b>Targeted M-PAC Construct</b>	<b>Topics for Behavioural Discussions</b>
Group webinar w/QEP	1	Instrumental Attitudes, Affective Attitudes, Perceived capability	Benefits of physical activity; how to meet guidelines; how to make exercise fun
1-on-1 w/Peer Mentor	2	Perceived Opportunity Behavioural Regulation	Goal setting & action planning
1-on-1 w/Peer Mentor	3	Perceived Capability, Perceived Opportunity, Behavioural Regulation	Overcoming barriers; creating a physical & social environment conducive to regular physical activity
1-on-1 w/Peer Mentor	4	Habit	Habit formation
1-on-1 w/Peer Mentor	5	Identity	Identity formation
1-on-1 w/Peer Mentor	6	Behavioural Regulation, Identity	Identity formation Coping with relapses

## Peer Mentor Semi-Structured Interview Guide

**Preamble** - Today we will be asking you a number of questions about your participation in the peer training program and delivering the physical activity behaviour change program.

As a reminder, all responses will be kept confidential and you are not required to answer any questions you do not feel comfortable with. You can stop the interview at any time by just let me know if you would like to stop or pause. Do you have any questions before proceeding with the interview?

### Warm up

*Feel free to ask some questions just to get to know the participant before diving into the questions. Could ask about why interested in joining as a peer mentor.*

### Interview

#### Questions about training program

1. What did you enjoy or not enjoy about the training program?
2. Could you describe your experiences in the peer mentor training program?
  - a. Did you feel like the peer mentor training program adequately equipped you with the skills and knowledge necessary to deliver behavioural discussions surrounding physical activity?
  - b. What did you find most useful about the training program?
  - c. What did you find least useful about the training program?
3. Is there anything you would change about the peer mentor training program?

Probing questions:

  - a. What aspects of this peer mentor training program would you like to see continue/discontinue about this study?
4. What resources (e.g., checklists, counselling guide, office hours, debrief meetings) did you find useful for helping to effectively deliver behavioural counselling sessions during the intervention delivery? Why?
  - a. Is there anything that you feel would further have helped you deliver effective behavioural discussions?

#### Questions about delivering the physical activity program

5. What did you enjoy or not enjoy about the delivering the physical activity program?
6. Could you describe your experiences with delivering the behavioural discussions to other cancer survivors?
7. What did your relationships look like the with participants that your acted as a peer mentor for?
  - a. Were there any factors that you felt facilitated a better connection between your two?
  - b. Anything that may have hindered your connection?
8. Throughout the intervention delivery, did you feel supported by the research team? Please elaborate.
  - a. What made you feel supported or not supported?

- b. To what extent did the participants you worked with discussed their cancer diagnosis or coping with cancer? Do you feel as though the training program equipped you to appropriately handle these discussions? How do you think the research team and training program can better support you in handling these discussions.
- 9. Were any components of the training program or intervention delivery burdensome on you?
  - a. In future iterations of this program, is there anything you would suggest for reducing burden on peer mentors?

### **General Questions**

- 10. How has participating in this research impacted your own physical activity participation, and thinking about physical activity?
- 11. Are there any benefits you have gained from participating in this research?
- 12. You will receive a \$55 honorarium for completing this research. Given that this research is unfunded this is the largest amount we could provide for peer mentors. Thinking about future iterations of this project, do you feel as though peer mentors should be paid for their work on this study? Why or why not?
  - a. What do you think would be fair payment for this work?
  - b. The Canadian Cancer Society recommends a \$25/hour for patient-partners engaging in research delivery. Does this sound like a fair compensation for this work? Please explain.

**Note:** Items 5-9 were excluded from the interview guide of peer mentors who did not deliver the peer-led PA intervention.