



ORIGINAL ARTICLE

Wearable Activity Technology And Action-Planning (WATAAP) to promote physical activity in cancer survivors: Randomised controlled trial protocol



Chloe Maxwell-Smith^{a,*}, Paul A. Cohen^{b,c,d,e}, Cameron Platell^{f,g}, Patrick Tan^f, Michael Levitt^f, Paul Salama^f, Gregory B. Makin^h, Jason Tan^e, Stuart Salfinger^f, Ganendra Raj Kader Ali Mohanⁱ, Robert T. Kane^a, Dana Hince^d, Ruth Jiménez-Castuera^j, Sarah J. Hardcastle^{a,c}

^a School of Psychology, Curtin University, Kent Street, Bentley, Australia

^b Bendat Comprehensive Cancer Centre, Salvado Road, Subiaco, Australia

^c School of Medicine, University of Western Australia, Stirling Highway, Crawley, Australia

^d Institute for Health Research, University of Notre Dame, Fremantle, Australia

^e Women Centre, McCourt street, West Leederville, Australia

^f St John of God Subiaco Hospital, Salvado Road, Subiaco, Australia

^g University of Western Australia, Stirling Highway, Crawley, Australia

^h St John of God Murdoch Hospital, Murdoch Drive, Murdoch, Australia

ⁱ Hollywood Private Hospital, Monash Avenue, Nedlands, Australia

^j Universidad de Extremadura, Spain

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Abstract

Background/Objective: Colorectal and gynecologic cancer survivors are at cardiovascular risk due to comorbidities and sedentary behaviour, warranting a feasible intervention to increase physical activity. The Health Action Process Approach (HAPA) is a promising theoretical framework for health behaviour change, and wearable physical activity trackers offer a novel means of self-monitoring physical activity for cancer survivors.

Method: Sixty-eight survivors of colorectal and gynecologic cancer will be randomised into 12-week intervention and control groups. Intervention group participants will receive: a Fitbit Alta™ to monitor physical activity, HAPA-based group sessions, booklet, and support phone-call. Participants in the control group will only receive the HAPA-based booklet. Physical activity (using accelerometers), blood pressure, BMI, and HAPA constructs will be assessed at baseline, 12-weeks (post-intervention) and 24-weeks (follow-up). Data analysis will use the Group x Time interaction from a General Linear Mixed Model analysis.

* Corresponding author. School of Psychology, Curtin University, PO Box U1987, Perth, Western Australia, 6845.
E-mail address: chloe.maxwell-smith@curtin.edu.au (C. Maxwell-Smith).

PALABRAS CLAVE

Oncología;
rastreador portátil;
actividad física;
autocontrol;
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cuasi-experimental

Conclusiones: Physical activity interventions that are acceptable and have robust theoretical underpinnings show promise for improving the health of cancer survivors.

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Pulseras inteligentes de actividad física y plan de acción (WATAAP) para promover la actividad física en sobrevivientes de cáncer: protocolo de un ensayo aleatorizado

Resumen

Antecedentes/Objetivo: Los sobrevivientes de cáncer tienen riesgo cardiovascular debido a la comorbilidad y al comportamiento sedentario, lo que justifica desarrollar una adecuada intervención para aumentar la práctica de actividad física. El Enfoque del Proceso de Acción de Salud (EPAS) constituye un marco teórico para el desarrollo de conductas saludables y los dispositivos electrónicos de actividad física son nuevas herramientas de automonitorización para los supervivientes de cáncer.

Método: Sesenta y ocho sobrevivientes de cáncer colorrectal y ginecológico serán aleatorizados en grupos de intervención y control. Los participantes del grupo de intervención recibirán un Fitbit Alta™ para monitorizar la actividad física, sesiones grupales y aplicación de un folleto de EPAS, y una llamada telefónica de apoyo. Los participantes del grupo control únicamente recibirán un folleto basado en EPAS. Al inicio del estudio, a las 12 y 24 semanas, se evaluarán la actividad física (usando acelerómetros), la presión arterial, el Índice de Masa Corporal (IMC) y los constructos EPAS. El análisis de datos utilizará la interacción Grupo x Tiempo a partir de un análisis del Modelo Mixto Lineal General.

Conclusiones: Las intervenciones de actividad física son factibles y tienen fundamentos teóricos que auguran mejorar la salud de los sobrevivientes de cáncer.

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Cancer survivors are at increased risk of secondary cancers, cardiovascular disease (CVD) and other comorbidities compared to those without a cancer history (Rock et al., 2012). Despite cancer survival rates improving, survivors of colorectal and gynaecological cancers continue to be at cardiovascular risk due to their physical inactivity. Up to 70% of endometrial cancer survivors are obese (von Gruenigen et al., 2008), and these survivors are twice as likely to die from not meeting the government's physical activity guidelines of 150-minutes of moderate-intensity physical activity per week (Fisher, Smith, & Wardle, 2016). Fifty-eight percent of colorectal cancer survivors are overweight or obese, and 83% are insufficiently active (Grimmett, Bridgewater, Steptoe, & Wardle, 2011), putting survivors at CVD risk. Given that these two cancer types have a high survival rate, and a significant proportion of these individuals have comorbidities resulting in increased CVD risk (Loprinzi & Lee, 2014), interventions to increase physical activity in these patients are important.

Although cancer survivors are at increased CVD risk and recurrence, clinicians may be optimally positioned to capitalize on the 'teachable moment' (Demark-Wahnefried, Azid, Rowland, & Pinto, 2005) or post-traumatic growth (Ochoa, Casellas-Grau, Vives, Font, & Borràs, 2017) created by the cancer diagnosis and play a central role in guiding survivors toward positive health behaviours that improve overall health and physical well-being.

Interventions that incorporate behaviour change techniques including goal-setting, counselling and feedback to increase physical activity and improve quality of life in survivors have yielded promising findings (Bennett, Lyons, Winters-Stone, Nail & Scherer, 2007; De la Torre-Luque, Gambará, López, & Cruzado, 2016). Based on the effectiveness of these interventions and our recent qualitative work (Hardcastle, Glassey, Salfinger, Tan & Cohen, 2017; Hardcastle, Maxwell-Smith, et al., 2017; Maxwell-Smith, Zeps, Hagger, Platell & Hardcastle, 2017), addressing support needs and facilitating self-monitoring strategies for survivors are important components of successful interventions (Hardcastle et al., 2015).

Wearable trackers

Wearable activity technology (WAT) holds great potential as a self-monitoring tool to increase physical activity in survivors. WAT and associated 'apps' use many of the techniques employed in physical activity interventions (i.e., self-monitoring, feedback, goal-setting) (Lyons, Lewis, Mayrsohn & Rowland, 2014). Thus, WAT presents a feasible opportunity for widespread physical activity promotion (Sanders et al., 2016). Previous physical activity interventions for cancer survivors have used pedometers as self-monitoring tools (Bennett et al., 2007). WAT is hypothesised to be more

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