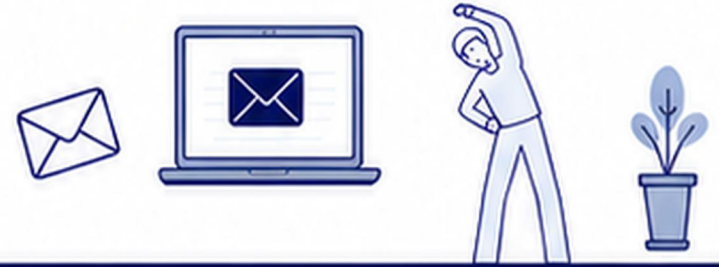


CAN EMAIL-BASED WORKPLACE INTERVENTIONS IMPROVE PHYSICAL ACTIVITY AMONG PROFESSIONAL EMPLOYEES?

EVIDENCE FROM PUBLIC-SECTOR LIBRARIANS IN BRUNEI DARUSSALAM

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1 WHY THIS MATTERS


A GLOBAL CONCERN

Physical inactivity is a major public health and economic burden, contributing to non-communicable diseases and workplace productivity loss.

 $\approx 1/3$ of adults worldwide are insufficiently active





THE SITUATION IN BRUNEI DARUSSALAM

- 21% of adult males physically inactive
- 34% of adult females physically inactive

 **21%**
 **34%**

HEALTH IMPACT

- Physical inactivity increases risk of NCDs: heart disease, diabetes, poor mental health, and early death.
- NCDs are among the leading causes of death in Brunei Darussalam.


THE WORKPLACE CONTEXT

Workplaces are a key setting to promote physical activity through supportive environments and opportunities.



OUR POPULATION

Public-sector librarians face sedentary work, high screen time, extended sitting, and unique occupational risks.



This study evaluated whether a theory-based, email-based workplace intervention could improve psychological determinants and physical activity behaviour among public-sector librarians in Brunei Darussalam.

3 OUTCOMES ASSESSED

Measured key areas related to physical activity and the factors that influence it.

PHYSICAL ACTIVITY OUTCOMES	PSYCHOSOCIAL OUTCOMES
<p>1. LEISURE-TIME PHYSICAL ACTIVITY</p> <p>Physical activity done outside of work.</p>	<p>3. CONFIDENCE</p> <p>Confidence in your ability to be physically active.</p>
<p>2. WORKPLACE PHYSICAL ACTIVITY</p> <p>Physical activity done during work hours.</p>	<p>4. AWARENESS</p> <p>Awareness of the health risks of not being active.</p>
	<p>5. PERCEIVED BARRIERS</p> <p>Things that make it difficult to be physically active.</p>
	<p>6. BELIEFS</p> <p>Beliefs that physical activity can improve health.</p>
	<p>7. MOTIVATION AND INTENTION</p> <p>Motivation and plans to be more physically active.</p>

These outcomes help to understand not only changes in activity levels, but also the thoughts and beliefs that support lasting healthy habits.

2 METHODS

1. STUDY DESIGN

Quasi-experimental pretest-posttest study

2. PARTICIPANTS

153 public-sector librarians in Brunei Darussalam

- 78 participants received the email intervention
- 75 participants continued their usual routine

3. INTERVENTION

Weekly bilingual email-based intervention delivered over 12 weeks

The intervention included:

- Motivational messages
- Infographic-based content
- Behavioural prompts
- Practical physical activity strategies

4. INTERVENTION GOALS

The intervention was designed to:

- Increase confidence to engage in physical activity
- Highlight the benefits of physical activity
- Reduce perceived barriers to physical activity
- Increase awareness of health risks related to inactivity
- Reinforce beliefs that physical activity can improve health
- Encourage motivation and intention to become physically active

5. THEORETICAL FRAMEWORK

The intervention was informed by established behavioural theories, including:

- Social Cognitive Theory
- Theory of Planned Behaviour
- Protection Motivation Theory
- Transtheoretical Model

4 KEY FINDINGS

The 12-week email programme helped improve physical activity and related attitudes among participants.

<p>1. MORE CONFIDENCE</p> <p>To express the intention to be physically active.</p> <p>IMPROVED p < .001 Moderate effect</p>	<p>2. MORE MOVEMENT AT WORK</p> <p>Participants were more active during work hours.</p> <p>IMPROVED p < .001 Moderate effect</p>	<p>3. MORE ACTIVE OUTSIDE WORK</p> <p>Participants increased their physical activity in their leisure time.</p> <p>IMPROVED p < .001 Moderate effect</p>
<p>4. FEWER BARRIERS</p> <p>Participants reported fewer obstacles to being physically active.</p> <p>REDUCED p < .001 Moderate effect</p>	<p>5. STRONGER BELIEF IN BENEFITS</p> <p>Participants increasingly believed that physical activity can improve health.</p> <p>IMPROVED p < .001 Small to moderate effect</p>	

IN SHORT: A simple 12-week email programme led to more movement, greater confidence, fewer barriers, and stronger beliefs about the benefits of physical activity.

5 KEY TAKEAWAY

- A theory-based, email-based workplace intervention improved physical activity (leisure-time and workplace), self efficacy, reduced perceived barriers, and improved response efficacy among public-sector librarians in Brunei Darussalam.
- Practical, scalable, and low-cost workplace strategies may help support healthier and more active professional employees.
- As librarians share similar desk-based occupational characteristics with other ISCO-08 professional groups, this intervention approach may also be applicable to other professional workplace settings.

IMPROVED OUTCOMES

- Physical Activity (Leisure-time & Workplace)
- Self Efficacy
- Perceived Barriers
- Response Efficacy

Practical **Scalable** **Low-cost**

Similar desk-based occupational characteristics

Librarians → Other ISCO-08 Professional Groups

This intervention approach is applicable to other professional workplace settings within the International Standard Classification of Occupations 2008 (ISCO-08) Major Group 2—such as engineers, health specialists, and business professionals—with which librarians share the same classification.