

Research Bank

Journal article

Physical activity and sedentary behaviour in a flexible office-based workplace : Employee perceptions and priorities for change

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Abstract

Issue addressed: Many Australian employees now regularly work from home in some capacity. This new way of working has not been widely studied in relation to the potential implications for employees' health-related behaviour or workplace health promotion. The aim of this study was to explore office-based employees' perceptions of the impact of flexible work on physical activity and sedentary behaviour; and preferences for associated interventions.

Methods: Three focus groups were conducted with office-based employees (n=28) six months after the introduction of a flexible work policy. A semi structured interview format with open ended questions was used with summary statements to check understanding. Sessions were audiotaped and dominant themes were identified. Findings on intervention preferences were interpreted using a social cognitive framework. An overview of results was provided to a group of managers (n=9) for comment.

Results: Employees reported that physical activity was not impacted, but sedentary behaviour had increased, with flexible work. Intervention preferences focussed on occupational sedentary behaviour, self-regulation, prompts and social connections, and not the physical work environment. Managers agreed with employees' preferences and also wanted interventions to be sustainable.

Conclusions: Self-directed interventions with social components and targeting occupational sedentary behaviour were more acceptable than physical activity interventions in this flexible workplace.

So what: Health promotion for workplaces with flexible work practices may benefit from prioritising strategies that promote self-regulation and social connections rather than being linked to the physical worksite.

Introduction

Large-scale advancement in technology has facilitated a fundamental shift in where and how work is performed (1). This changing work environment enables flexible working conditions that allow employees to adjust work schedules and work 'remotely' in different locations. Almost a quarter of Australian employees report completing at least some hours of work at home on a regular basis (2). Workers with access to flexible work conditions show high levels of job satisfaction and organizational commitment (3).

Contemporary workplace health promotion programs (WHPP) need to consider this shift to flexible work arrangements when planning and implementing interventions. Traditionally, interventions have focused on the workplace as a static environment, with strategies attached to a physical worksite such as prompts to use the stairs at work, fitness facilities and sit/stand desks (4, 5). The flexible workplace presents new challenges for engaging employees in WHPP. Employees are in the workplace at varying times and strategies must be accessible to participants regardless of location. To date, this new way of working has not been widely studied in relation to the potential implications for employees' health-related behaviour or workplace health promotion.

Physical activity may be a focus of WHPP, as it is associated with significant benefits for both the employee and the employer. Physically active workers can deliver tangible benefits to the organisation, such as reduced costs associated with absenteeism, reduction in employee turnover and improved productivity (6, 7). There are also intangible benefits, including improved employee morale, employee engagement and a positive attitude towards the

'caring' organisation (8, 9). Many organisations have therefore come to view physical activity promotion as a benefit in terms of attracting and retaining staff (6).

Few studies have assessed associations between workplace flexibility and physical activity. Grzywacz et al. (10) found that higher perceived work flexibility was associated with a higher frequency of physical activity among employees in a pharmaceutical company over a 12-month period. A recent study found that hospital workers with high job flexibility (ability to change shifts to meet personal demands) were also likely to have adequate levels of physical activity (11). One population level study showed an inverse association between work hours and physical activity (12). It is possible that flexible work conditions, which allow workers to manage their own hours, may positively impact on physical activity by increasing discretionary time. Alternatively, flexible work practices may make physical activity habits difficult to establish and maintain.

Sedentary behaviour is a relatively new focus of WHPP. The office-based workplace is a key contributor to the total time that individuals spend in sedentary behaviour (i.e. sitting time). Thorp and Dunstan (13) reported that Australian office workers were 70% more sedentary on work days than on non-work days and this difference in sedentary time was even more pronounced during work hours. Similarly, Parry and Straker (14) reported that 81% of office workers' time was spent in sedentary behaviour and that sedentary time at work tends to occur in longer bouts (>30minutes) than non-work sedentary time.

The physical impacts of prolonged occupational sitting can lead to increased financial costs to organisations. These include both direct costs such as occupational-related injury, and

indirect costs through absenteeism. A review by Odeen et al. (15) identified that reducing sedentary behaviour was an effective measure for reducing future employee absence, particularly absence associated with musculoskeletal pain. There is also emerging evidence that reducing and interrupting prolonged sedentary behaviour can improve wellbeing in the workplace. For example, Taylor et al. (16) assessed the impact of booster breaks every 15 minutes to interrupt prolonged sitting at five worksites and found the most commonly reported employee benefits were reduced stress, enhanced feelings about the workplace and increased enjoyment in the workplace.

We are not aware of published studies that have assessed sedentary behaviour in employees who have flexible workplace practices. A flexible workplace could potentially reduce sedentary behaviour as employees are not restricted to an office environment. In addition, flexible work provides an opportunity to complete work in short bouts throughout the day, rather than in one set work block. For example, employees working at home may break up occupational sedentary time with domestic tasks.

The primary aim of this study was to describe employees' perceptions of the impact of flexible work on physical activity and sedentary behaviour on work days; and to identify employees' preferences for WHPP targeting physical activity and sedentary behaviour. Managers were also asked to comment on employees' perceptions and the feasibility of employees' intervention preferences.

Method

Research Design and Theoretical Framework

This was an exploratory qualitative study using focus group data. Study results were intended to inform intervention planning. Focus groups are an effective method for exploring employees' perceptions and experiences, particularly where little is known about the topic (17, 18). This method was chosen as it allows for broad group discussions and is a useful tool for identifying group values and norms (19).

The discussion guides were developed by the researchers who have expertise in physical activity and sedentary behaviour research in the workplace (20-22). The guides consisted of key topics for discussion that directly addressed the aims of the study. Inductive data collection techniques (open questions, probing) were used to clarify participant responses. Reflective and summary statements were used to check understanding.

Social cognitive theory was used as a framework to interpret the results relating to employees' preferred intervention strategies. Social cognitive theory is one of the most widely applied theories in health promotion because it addresses both the underlying determinants of health behaviour as well as processes of change (23). The theory acknowledges personal cognitive factors, as well as the relationship between behaviour and the environment. Key constructs include environment, self-regulation, facilitation, behavioural capability, outcome expectations, self-efficacy, reciprocal determinism, observational learning, reinforcements and emotional coping (24). Table 1 provides definitions and practical examples of each construct. This is useful for exploring health behaviours as it provides principles and mechanism that can inform, guide and motivate people through behavioural change (25).

Study protocols were approved in accordance with the ethical review guidelines and processes of XXX [blinded for review].

Participants

Participants were a convenience sample of office-based volunteers from a financial services organisation based in Brisbane, Australia. The organisation had implemented a flexible work policy in the preceding six months that allowed employees to self-manage working hours and to work from home on at least one day per week. To recruit employee participants, three information sessions were held at the workplace to present the study aim and requirements. Employees were also sent an email providing them with study information and a web link where they could register for the study. Managers were identified using the organisational structure and were emailed an invitation to participate in the discussion group.

Procedures

Upon sign-up on the website, employees completed a short survey to assess current physical activity and overall sedentary behaviour on work days. Employees were asked two questions adapted from the Activity Australia survey (26) to report time spent in vigorous activity and moderate activity including walking (excluding gardening) in the past week. These data (minutes) were summed, with vigorous activity weighted by two to account for higher intensity, to determine estimated time spent in physical activity in the previous week (26). Employees were also asked one question to indicate time spent sitting (for work, transport and leisure) on a normal work day in the last week. Data indicated more variation in physical activity (M=467mins, SD=366.78) than sitting time (M=589.2minutes,

SD=103.88). Therefore, employee participants were stratified into three focus groups based on self-reported physical activity level (tertiles of high, medium, low).

All groups were conducted during normal working hours at the workplace and no gratuities were offered for participation. All groups were scheduled for one hour. The three employee focus groups were held over two days and the managers' discussion group was held the following week. Participants were provided with written information about the study and signed a consent form at the commencement of the session.

Employee focus group discussions were audio-recorded and led by one facilitator (HO). Whiteboard notes were taken during the session, which also enabled participants to check researcher understanding of the discussions. All notes were verbally confirmed with the participants for meaning at the conclusion of the sessions to ensure accurate representation of the ideas.

Questions followed a semi-structured format. Employees were asked to discuss their perceptions of the impact of flexible work practices on their physical activity and sedentary behaviour on work days. They were also asked to identify their preferences for workplace health promotion programs to promote physical activity and reduce sedentary behaviour in a workplace with flexible work conditions. Employees were encouraged to group or identify similar ideas during the session. After the focus group discussion, participants completed a short demographic survey to indicate age, gender, and flexible work patterns (i.e. frequency of working at home).

Managers (n=9) attended a separate session (1 hour duration) during which results from the employee focus groups were discussed. Sessions were audio-recorded and led by the same facilitator as for the employee focus groups (HO). Managers were presented with an overview of the findings from the employee focus groups and asked to comment on whether or not they agreed and feasibility, and to provide their views on employees' preferences for strategies and priorities for future WHPPs targeting employees' physical activity and sedentary behaviour.

Data management

Methods to achieve data validity in qualitative studies can include structural corroboration, consensus, interpretive adequacy, theoretical adequacy, and control of bias (27). The following strategies were used to for rigor in data collection and interpretation:

- multiple employee focus groups and a managers feedback session allowed the researchers to corroborate the findings and identify patterns across different sources
- the findings were interrogated by the senior researcher as a peer review process to ensure that the initial interpretation was reasonable
- member checks with participants were achieved verbally and by white-board notes throughout the focus groups
- low-inference descriptors have been included to support interpretive adequacy, and
- management of personal bias through peer review and member checks.

Analyses

A content analysis approach was used to analyse the employees' focus group data. Initial review of the data was completed by the first author using facilitator notes, whiteboard session notes and audio files. The data were analysed to identify recurrent themes between and within the focus groups. Findings were then presented to the senior author (NB) for interrogation. These two researchers then mapped the key themes identified against the list of social cognitive constructs (24) detailed in Table 1. Individual participant quotes were selected by the first author using audio files to provide exemplars of the group narrative.

Results

A total of 28 employees and 10 managers participated (26% of the business unit). Mean age of employee participants was 37 ± 9 years, 62% were female and 86% were working at least one day per week from home. The duration of the employee focus groups was 65mins, 70mins and 45 mins. The majority of participants (80%) met the Australian Physical Activity guidelines of at least 150 minutes of moderate intensity physical activity per week (28). As there was a high level of concordance in discussions among the three employee focus groups (stratified by self-reported PA level) results are presented as combined from these groups. The managers' session lasted for 60mins.

Employees reported that there was no impact to physical activity since the introduction of flexible work. However, there was a perceived negative impact to occupational sitting time and participants expressed a preference for WHPP interventions targeting sedentary behaviour rather than physical activity. Four themes emerged as preferences for these

sedentary behaviour interventions: self-regulation, behavioural prompts, social connectedness, and not being based in the physical worksite. The managers agreed with the employees' perceived impacts of flexible work and supported the employees' intervention preferences.

Employees' perceptions of the impact of flexible work

Employee comments on "physical activity" focussed on recreational exercise, rather than incidental movement or unstructured activity during the day. Overall, employees reported that physical activity was not (positively or negatively) impacted by flexible working arrangements. Individuals tended to plan physical activity regardless of work context (work at the office or work at home day).

"I like to go to the gym near home. It doesn't make a difference if I'm working at home that day, although it means that I can sleep in and go a little later"

Focus Group 1, Participant 7

A commonly identified occupational barrier to physical activity was high workload which was perceived to be not directly impacted by flexible work practices, and able to be managed by personally re-prioritising tasks.

Employee comments on "sitting time" focussed on occupational sedentary behaviour rather than leisure time e.g. recreational screen use. Employees consistently stated that sitting on a 'work from the office day' had increased with the flexible working arrangements.

"[since flexible work] I only get up from my desk for lunch and bathroom breaks. I don't even have to move for meetings anymore, I just put on my headset and log in"

Focus Group 2, Participant 2

This was attributed to an increase in electronic communications (email and virtual meetings) due to the change in the work environment and people working away from the worksite. Face-to-face meetings had reduced and ad hoc interactions (visiting people at their desk) had been replaced with email or phone calls, as it was difficult to maintain awareness of who was in the office at any given point in time.

"It just feels like I never know who is in the office on any given day, so it's easier to email rather than get up to go see if they are at their desk"

Focus Group 3, Participant 2

Employees' intervention priorities

Employees in this workplace identified a clear preference for occupational sedentary behaviour interventions rather than physical activity interventions. They reported that the change to flexible work had a greater, and negative impact on sedentary than physical activity behaviour and were concerned about the potential health impact of this noticeable increase in sitting time. Participants believed that the organisation had a shared responsibility with employees to reduce this sitting time, which had occurred as a result of changes to the work environment. The employees were willing to change their sitting behaviours and were looking for support from the workplace.

"I'm worried about all this sitting I do when I'm working. All I see everywhere is 'sitting is the new smoking', and I'm just sitting more and more"

Focus Group 3, Participant 4

“I need to know that if I’m getting up every hour to go for a walk that my boss is okay with that [being away from my desk].”

Focus Group 1, Participant 9

In contrast, participants were not interested in WHPP targeting physical activity.

Participants believed that physical activity was the individual’s responsibility and they preferred to do exercise/ activities outside the work environment.

Socio-cognitive themes for intervention planning

An overview of the socio-cognitive themes identified from employee discussions on intervention preferences is presented in Table 1. The four major themes from the employee focus groups (self-regulation, behavioural prompts, social connections, and not being tied to the physical worksite) were conceptualised as social cognitive constructs of self-control, facilitation, and the environment (physical and social). In this flexible workplace, participants wanted interventions that were predominantly self-regulated with cues and prompts, enabled social connections and that were not location based. There was little or no discussion on interventions based on knowledge, skills or reinforcement.

Table 1.

Overview of socio-cognitive themes identified from employee discussions on intervention preferences.

Socio-cognitive construct	Definition	Strength of theme	Evidence	Summary
Environment	Factors external to the person (physical and social)	Strong	<p><i>I never know who is in the office on any given day</i></p> <p><i>Things like 'champions' are never going to work, what about the people at home?</i></p> <p><i>Standing desks are okay for the office, we have some that we can use as hot desks. It would be pretty expensive for me to have that set-up at home.</i></p>	Participants stated that interventions must not be linked to physical worksite, but be accessible to all regardless of location.
Self-regulation	Self-management of behaviour via e.g., self-monitoring, goal-setting, feedback, self-reward and enlistment of social support	Strong	<p><i>I don't want someone telling me what to do. I already know what needs to be done, I just need to do it.</i></p> <p><i>Team programs don't work for everyone. What about all the people who are already doing something? I want to be able to set my own goals.</i></p>	<p>Participants stated a strong preference for interventions that allowed for self-monitoring and individual goal setting.</p> <p>Both employees and managers thought that individuals had to take responsibility for their own behaviour change.</p>

Employee priorities for WHPP in flexible workplace

Socio-cognitive construct	Definition	Strength of theme	Evidence	Summary
Facilitation	Providing tools, resources or environmental changes that make new behaviours easier	Strong	<i>I know that I need to get up more but I just need something to tell me when to do it. Even just a pop-up on the computer would be great.</i>	Participants were interested in interventions with cues and prompts. Management wanted intervention resources to be sustainable
Behavioural capability	Knowledge and skills to perform the behaviour	Strong	<i>We know what we need to do...</i> <i>I know I need to get up (from my desk) and move.</i>	Participants stated that they had the knowledge and skills to break up prolonged sitting and be physically active.
Outcome expectations	Beliefs about positive and/or negative consequences of behavioural choices	Moderate	<i>I'm worried about all this sitting.</i> <i>I feel better when I've had a chance to move during the day.</i>	Participants were aware of adverse effects of prolonged sitting and the benefits of physical activity
Self-efficacy	Confidence to perform behaviours	Moderate	<i>.....a bit of support would help</i> <i>It's hard.....when I'm focused on trying to get something finished, time just flies</i>	Participants had mixed confidence. They thought behaviour change was possible, but also identified challenges.

Socio-cognitive construct	Definition	Strength of theme	Evidence	Summary
				A degree of management support for change was considered important.
Reciprocal determinism	Dynamic interaction between person, behaviour and environment	Moderate	<i>Since flexible work, I feel like I just spend all day on the computer.</i> <i>I save all my reading and reviewing up to do on my work from home days. That way, the only interruption is when I get up for a cup of tea or to put the washing on.</i>	Participants described an interaction between the flexible work environment and personal work practices, with an increase in sedentary behaviour.
Observational learning	Learning to perform new behaviours by watching actions and outcomes of others' behaviour	Moderate	<i>We did a program last year that had an online 'chat room'. It was really helpful because we could talk about what we were doing and share our tips with everyone.</i>	Participants wanted interventions that enabled social connections
Reinforcements	Rewards and punishments to modify behaviour	Not mentioned	N/A	Participants made no mention of incentives, rewards, or punishments.
Emotional coping	Strategies to deal with emotional stimuli	Not mentioned	N/A	Participants made no mention of emotions in relation to flexible work practices and changing sitting or physical activity

Employees' preferences for interventions targeting sedentary behaviour

Participants stated that they did not want someone 'telling them what to do'.

There was a strong sentiment that they knew what was needed to create change in their behaviour but some assistance was needed to get started. The employees wanted to be able to set individual goals for change, monitor their own progress and not be limited to generic targets. Participants stated that shared goals or generic goals were not effective when everyone was starting from different levels of behaviour.

"I don't want someone telling me what to do. I already know what needs to be done, I just need to do it"

Focus Group 1, Participant 9

Participants stated that it would be helpful to have prompts or cues to support behavioural change. The preference was for an external prompt or reminder (e.g. electronic pop-up on their computer, sedentary alert) which they could control and integrate into their personal strategies. Participants talked about this type of support as a way to keep the program 'front of mind' instead of a traditional written educational resource.

"It wouldn't work to have us all get up and move at the same time. What if I'm trying to finish something? I just want something that's going to remind me to move..."

Focus Group 2, Participant 1

Employees also reported that they would like to be able to connect and share progress with colleagues as part of any intervention strategy. Participants stated that 'in person' interactions at the office had reduced with the change to flexible work, so it was important

to create other avenues for connecting with colleagues. Social connections had been an enjoyable aspect of previous worksite programs and there was a clear desire for an online community or support group to encourage and support team members remotely, and share tips and personal strategies for sedentary behaviour change.

“We did a program last year that had an online ‘chat room’. It was really helpful because we could talk about what we were doing and share our tips with everyone.”

Focus Group 1, Participant 4

Participants stated that interventions should not be anchored to the worksite location and should allow participation regardless of work context (work at the office or work at home). Employees reported that any programs held at specific times and close to the office excluded individuals who were working off-site. Similarly, onsite workplace champions to promote behaviour change were identified as potentially ineffective; if people were in varying locations many would ‘miss out’.

Managers’ comments on employees’ data

Managers were provided with a summary of results from the employee focus groups, highlighting:

- Perceptions of the negative impact of flexible work on occupational sitting time, and negligible impact on physical activity
- Preference for WHPPs to target occupational sitting time rather than physical activity
- Preference for interventions to be self-directed, include behavioural prompts, enable social interactions, and not be worksite based

There was agreement from management that employee occupational sitting time had increased with the change to flexible work. The managers felt that flexible work had also negatively impacted on their own sitting time. Given this acknowledged impact, managers were supportive of the employees' preference for workplace interventions targeting sedentary behaviour. The managers also expressed agreement that physical activity was not impacted by flexible work: this also reflected their own experiences.

The managers expressed support for employees' intervention preferences and reflected on their own positive experiences of WHPP interventions with these components. There was a consensus that self-regulation was key to successful workplace interventions. There was a strong belief that the managers' role was to support behavioural change and that each individual should 'take responsibility' for their own outcomes.

In addition to these employee intervention preferences, managers also wanted a sustainable intervention. Specifically, it was important that there was no ongoing personnel resource requirement. They were willing to consider small ongoing monetary investment for relevant resources and materials.

Discussion

The office environment is changing and employees are increasingly being offered greater flexibility in the workplace. This change could potentially impact on health behaviours such as physical activity and sedentary behaviour, and therefore have implications for future workplace health promotion. There is a need to better understand the impacts of the

flexible workplace on health behaviors and how to tailor interventions to meet the needs of this new style of working.

Overall, employees in this study reported that flexible working practices had not impacted on physical activity. This is consistent with previous research that found that self-reported physical activity was not impacted by the introduction of a flexible work policy (22). It may also be due to a focus on recreational physical activity by this participant group, rather than incidental movement in the workplace. Incidental movement in the workplace, such as taking the stairs and walking to talk with colleagues, can contribute to energy expenditure and therefore employee health and wellbeing (29).

However, employees did report that occupational sitting time had been negatively impacted by flexible work. This was primarily due to an increase in electronic communication to account for the disbursement of work locations (office, home). Given the already typically high levels of sedentary behaviour in office workers (13, 14), and potentially associated adverse health outcomes (21), this potential increase in occupational sedentary behaviour is of concern. Exploratory research with office-based employees suggests that this increase may be present both when working at the office and working at home (22).

Because of this perceived differential impact, employees preferred workplace health promotion interventions that targeted a reduction in sitting time rather than an increase in physical activity. Managers were also supportive of this prioritisation. Employees were concerned about the associated increased health risks of an increase in sitting time. These perceptions are consistent with studies that indicate high levels of sedentary behaviour are

associated with increased risk of all-cause and cardiovascular disease mortality and metabolic disease (30). However, other studies indicate that these risks may be reduced or eliminated with physical activity, or that there is no association between sedentary behaviour and all-cause mortality (31, 32). Reducing and interrupting prolonged sedentary behaviour is associated with reduced employee absence, occupational injury and mental distress in the workplace (15, 16).

One of the major preferences for intervention approaches was self-regulation. There is emerging evidence that self-regulation (with action-planning) is a significant moderator in interventions to decrease sitting time. A recent study demonstrated a significant reduction in occupational sitting time from an intervention with computer-tailored advice on sitting time, suggestions on how to interrupt and reduce sitting and a SMART (Specific, Measurable, Attainable, Relevant, Time-bound) action-planning module (33). This would suggest that interventions that include self-regulation activities can be effective in a work setting, though the generalisability to a flexible workplace needs to be assessed.

Social connectedness was a desired characteristic of potential interventions. This was a response to the reduced day-to-day social interactions in the workplace since the introduction of flexible work. Recent studies have shown that social support is associated with participation in workplace health activities (34), and social strategies can increase physical activity in workers (35, 36). Interventions that create social connectedness may therefore be effective for changing health-related behaviours in a flexible workplace. Some of the strategies that have been shown to be effective for health behaviour change are buddy systems, walking groups, and instructor-led activities with personal follow-ups (35).

Electronic communication may be the most appropriate communication channel in this setting, so options such as online resources, social media platforms and phone applications could be investigated.

Another preference for interventions was the use of cues and prompts for sedentary behaviour change. Electronic prompts have been shown to be effective in reducing and interrupting prolonged sitting time. Bond et al. (37) found that prompts through a smart-phone application were effective in reducing sedentary time in overweight adults. Similarly, Evans et al. (38) demonstrated that computer-based prompts were effective in reducing the count and duration of sedentary bouts in office workers, although there was no difference in total sitting time when compared with an education-only intervention group. This would indicate that behaviour prompts may be effective in reducing sedentary behaviour in a flexible workplace.

The final preference for interventions related to the physical environment. Employees and managers emphasised that activities should not be site-based. This is clearly the most challenging aspect of the flexible workplace. Workplace interventions for sedentary behaviour such as sit/stand desks may therefore not be feasible in this context as employees are working in multiple locations (i.e. not at the same desk each day) including at their homes. Similarly, site-based information sessions could limit accessibility, though these could be made available online or via video links. As identified by the focus groups, behaviour prompts such as text or email messaging can be used across work sites and times.

A strength of this study was the inclusion of both employees' perceptions and managers' reactions to employee preferences. This is important in applied settings to determine not only what participants desire from workplace interventions, but what will be supported by the organisation. This study was limited by the small sample size, as the researchers were only able to access one business unit for data collection. This sample may therefore not be representative and may be influenced by unit specific workplace factors (e.g. leadership style). For example, many participants were already active, with 80% meeting physical activity recommendations, and this may have contributed to the preference not to have physical activity interventions. The majority (62%) of participants were female and recreationally active, and this may have contributed to a preference for interventions that involve social connections. However, this study was an in-depth analysis of a single work group, which enabled tailored intervention planning directly relevant to the implementation context. Future research could assess potential differences in intervention preferences by factors such as activity level and gender. This study was limited to office-based employees. It is possible that different worksites and settings may experience different impacts on physical activity and sedentary behaviour. Finally, this study used focus group data, which can be limited by the willingness of participants and the ability of the facilitator to manage group dynamics and encourage the depth of discussion. The focus groups did not include an observer, which may have limited the collection of non-verbal data. Despite these limitations, the findings provide a basis to generate future hypotheses with a broader audience, and to inform intervention planning for this type of worksite.

Conclusion

There is a need to better understand the impacts of the flexible workplace on health behaviors and the implications for designing workplace health promotion. In this office-based study, flexible work practices were perceived to have little impact on physical activity but to negatively impact on occupational sitting time. Therefore, workplace interventions for reducing occupational sitting time were more acceptable than increasing physical activity. Health promotion intervention strategies for workplaces with flexible work practices may benefit from prioritising strategies to promote self-regulation including social connectedness and facilitation through electronic prompts. Importantly, strategies should not be linked to the physical worksite, and enable access across varying times and locations. Further research, including quantitative and intervention studies, is needed to understand how to effectively develop and implement health promotion in the flexible workplace.

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