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# Breaking the chain from the chair: a manager's perspective on reducing employees sedentary time in a home-office context

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## Abstract

**Background** Office workers have the highest estimated daily sedentary time (ST). The Covid-19 pandemic resulted in a switch from office-based work to home-office work or a hybrid of both. Home-office work has been shown to increase ST compared to the office, which may have deleterious health consequences.

**Objective** This study explored managers perspectives on the factors influencing their employee's ability to reduce ST in a home-office context.

**Design** A descriptive qualitative study.

**Methods** Semi-structured interviews ( $n = 20$ ), which were mapped to the COM-B model, were conducted with managers from Ireland, Spain and The Netherlands. Interviews were conducted through Zoom, recorded and transcribed verbatim. A reflexive thematic analysis approach was used.

**Results** Organisational support, management engaging in physical activity (PA) during work and a social element were seen as key to increasing engagement in interventions. Creating opportunities for employees to engage in PA during work was seen as another key element. Leveraging infrastructure put in place during the Covid-19 pandemic was identified as a feasible approach to providing education and encouragement to employees. Lastly, managers feared the impact reducing ST may have on the performance of both employees and the organisation, yet, managers felt an increase in employee well-being would benefit their company long-term.

**Conclusion** These results highlight the need to include organisational support and leadership from management, ensuring a top-down approach. These changes may create opportunities for employees to reduce their ST while working from home, which may benefit both the employees' and organisations.

**Keywords** Sedentary time, Physical activity, Home-office, Health, Employees

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## Introduction

Increased total daily sedentary time is associated with many deleterious health outcomes and all-cause mortality [1, 2]. A large body of evidence suggests that high levels of sedentary time, without meeting the recommended physical activity (PA) levels, is associated with an increased risk of type 2 diabetes [3], cardiovascular diseases [3, 4] and site-specific cancers [3–7]. Recent evidence suggests that 30–40 min of moderate-to-vigorous physical activity is needed to offset the associations between sedentary time and risk of mortality [1]. Furthermore, the sequence in which total sedentary time is accumulated appears to be an important factor. Fragmenting sedentary time with frequent active breaks, when compared to individuals who accumulate equal amounts of sedentary time but in more prolonged bouts, appears to reduce the negative impact on health outcomes [8–10].

Office workers have the highest total daily sedentary time across all occupations, spending up to 72.5% of their day sedentary [11]. The Covid-19 pandemic led to a drastic switch from primarily office-based work to home-office working, due to governmental imposed restrictions (such as lockdowns, travel restrictions and recommendations to work from home where feasible) [12], while a hybrid approach, combining both traditional office-based and home-office work, has persisted and is likely to continue into the future due to the demonstrated efficacy of this work modality [13]. However, home-office working has been shown to further increase sedentary time during working hours compared to an office environment, while those who work from home also have longer uninterrupted sedentary periods [14]. This may be due to environmental differences between the office and home-office working environments (such as office size and layout) and the distance between amenities (such as the printer and coffee machine) [14, 15]. This increase in total daily sedentary time and uninterrupted sedentary time may have further deleterious health consequences unless addressed [16–18].

There are many forms of interventions that target a reduction in sedentary time, including, but not limited to, physical workplace changes, workplace policy changes, information and counselling or multi-component intervention approaches [19]. There is low-quality evidence that single-component interventions, such as the introduction of a sit-stand desk, are effective in the short-to-medium term, with multi-component interventions appearing to be efficacious in the medium-to-long term [19, 20]. Further to this, interventions which applied behaviour change theories appear to be more effective in creating long-term behaviour change [21]. Multi-component long-term behavioural change interventions in the workplace often require changes at both an individual

and environmental level to maximise the impact on the desired behaviour [19]. Despite a study by Shrestha and colleagues highlighting that multi-component interventions are most effective at reducing sedentary time long-term [19], there is currently a dearth of literature which investigates the impact of interventions aiming to reduce sitting time in a work environment which incorporates organisation change and management buy-in as part of a multi-component intervention. This is despite there being a growing body of evidence that this plays an important role in mediating a reduction of sedentary time in this context.

Organisational culture and management buy-in (as part of a wider intervention), including changes at an individual level, have been shown to be effective strategies for a long-term reduction in sedentary time in workplace interventions [21–23]. Due to the nature of their positions, managers play an important role in both organisational culture and buy-in. A previous paper highlighted the impact of organisational culture and management behaviours on employees ability to reduce their sedentary time [24], although this was in an office context, and to the best of the authors knowledge, there is currently no research within a home-office context. With this in mind, it is vital to ensure that the perspectives of managers are taken into consideration when developing strategies to reduce sedentary time in the home-office workplace. Furthermore, qualitative research has recently been identified as an importance element to health-related research for its ability to offer insights and perspectives that quantitative research cannot do [25].

It is important to ensure that qualitative findings are appropriately translated to support and inform future interventions to maximise the potential of intervention success [26]. The COM-B model is a framework for understanding the factors affecting a given behaviour and can be subsequently used in combination with the behaviour change wheel to develop interventions. The COM-B model assesses the factors influencing a behaviour across 3 main categories: Capability, Opportunity and Motivation. These factors are then commonly mapped to the behaviour change wheel to determine what type of intervention is most likely to change the target behaviour [27]. Through utilising the COM-B model, the qualitative findings can be used to identify relevant information needed to inform how to increase the likelihood of successfully reducing sedentary time in this context [27]. Hence, the aim of this study was to explore the factors influencing an employee's ability to reduce their sedentary time in a home-office context from a manager's perspective through qualitative interviews, and to map these findings to the COM-B model for subsequent use in intervention development.

## Methods

### Design

A qualitative study employed semi-structured interviews with managers to capture an in-depth insight into their perspectives and experiences on the factors influencing their employee's ability to reduce sedentary time.

### Participants

Managers aged between 18 and 67 from Ireland, Spain and The Netherlands were recruited between August and December 2022, a time during which the majority of European nations had exited work-related restrictions imposed due to Covid-19. Participants were recruited through various channels, such as an expression of interest email circulated through the European Network for Workplace Health Promotion (ENWHP), social media and through personal contacts.

The inclusion criteria for this study was (i) any person who held a position as a director, part of the management team, human resource manager or occupational risk prevention technician, (ii) managed employees who work from home for at least 1 day per week and (iii) worked at an organisation who had a work-from-home policy. For the purpose of this study, all participants, irrespective of their role, were referred to as “managers”.

Prior to the interview, participants completed a brief screening questionnaire providing descriptive characteristics about their organisations, their role and the length of time in their job. Informed consent was required from all participants, including permission to record all interviews. Ethical approval for this study was granted by the Research Ethics Committee of the Spanish and Irish University.

### Data collection

Semi-structured interview guides mapped to the behaviour change wheel's COM-B model were used to guide the interviews (see supplementary file 1) [27]. This publication forms part of the Click2move project, a European initiative ran across Ireland, Spain and The Netherlands and is intended to form the basis of an upcoming intervention targeting the reduction in sitting time in home-office workers hence is mapped to the COM-B model, a model designed to identify what needs to change for a behavioural change intervention to be effective [28, 29]. The COM-B model for behaviour change assumes that there are three key factors for behaviour change, namely Capability, Opportunity, and Motivation. Consequently, the topics and questions in the interview guide focused on the individual's capabilities, opportunities and motivations to support their employees and gather perspectives on the factors that influenced reducing sedentary time amongst this cohort.

Interviews were conducted online by three researchers, one from Ireland (AC), Spain (IPS) and The Netherlands (PR), and recorded. AC is a PhD student from Ireland with an MSc in sports performance and a background in community-based interventions and nutrition. IPS is a PhD student from Spain with a degree and background in Physiotherapy. PR is an experienced qualitative researcher and has experience in inter-sectoral collaboration within prevention programmes. Prior to completing the interviews, extensive training was undertaken by the researchers such as participating and holding mock interviews as well as completing training with experienced qualitative researchers. Each researcher conducted the interviews in their native country. Interviews lasted between 30 and 60 min (Mean = 43.45, SD = 8.18). It should be noted that in one interview, the manager invited a health and safety officer to also attend, resulting in two participants partaking in this interview. Once all interviews were conducted, each interview was transcribed verbatim in the native language and subsequently translated (by the researcher fluent in the respective language) to English where applicable. Regular meetings were held between the researchers to ensure the accuracy of translation to English. Interviews were de-identified prior to analysis.

### Data analysis

Reflexive thematic analysis was the analysis approach employed in this study. Prior to the commencement of the analysis, a quality assurance framework (QAF) was sought to ensure the validity of the research and was continually assessed against 4 criteria, namely (1) sensitivity to context, (2) commitment and rigor, (3) transparency and coherency and (4) impact and importance [30]. Implementation of the QAF is illustrated below.

### Sensitivity to context

Defined as not imposing pre-conceived categories onto the data but considering the meaning generated by the participants was ensured by implementing a “critical friend” approach whereby the author (AC) and co-authors KD, an experienced researcher in the field and DW, an experienced qualitative researcher, would meet to discuss theme development.

### Commitment and rigor

Demonstrated by in-depth engagement with the topic including data collection and analysis was ensured with a substantial amount of training conducted prior to the collection of data, such as mock interviews with qualitative research experts and regular meetings throughout, and prior to analysis, through 3 workshops with a world-leading expert in qualitative research and further

regular meetings and feedback with experts in qualitative research.

### **Transparency and coherency**

Whereby readers should be able to clearly see how interpretations were derived was ensured through the use of quotes from participants, regularly referring back to the transcripts to ensure the themes were reflective of the content and through a thematic analysis report.

### **Impact and importance**

Referring to the requirement for the research, was apparent due to the lack of research investigating home-office workers and the need for qualitative research in this cohort.

Furthermore, a consolidated reporting framework was also used to ensure appropriate reporting of the interviews (see supplementary file 2– COREQ checklist) [31]. Analysis was carried out by the first author (AC) using the 6-step approach outlined by Braun and Clarke and illustrated below [32]. Coding was completed electronically using MAXQDA software for windows (MAXQDA 2022 Plus, VERBI Software, Berlin, Germany). Coding was carried out by the first author (AC), with a critical friend approach implemented again whereby a co-author (KD) reviewed the coding, sought justification for codes and coded 1 interview for comparison purposes. Furthermore, additional meetings were held with another experienced qualitative researcher (DW) to discuss the coding, providing examples of codes and to review interviews that were coded early in the analysis process, to ensure that codes were consistent and that no codes were omitted or should have been coded differently.

### **6 step approach**

*Phase 1 (Familiarization with the data)* – Prior to generating the initial codes, the author (AC) read through all interviews to gain an initial understanding of the content and to become familiar with the data.

*Phase 2 (Generating initial codes)* – The author (AC) read through the interviews again, this time generating initial codes for each interview and took notes on initial thoughts and patterns recognised. Once all codes were complete, they were printed to allow for a manual approach to developing themes with Fig. 1 illustrating this process.

*Phase 3 (Developing themes)* – following the generation of the codes, AC grouped similar codes together and developed initial themes Fig. 2 illustrates this phase). Subsequently, a critical friend approach was implemented, whereby AC and KD discussed the initial codes and themes for quality assurance purposes.

*Phase 4 (Reviewing themes)* – Once the preliminary themes were developed and discussed, AC referred

back to the transcripts to ensure the themes developed reflected the content within the interviews.

*Phase 5 (Defining and naming themes)* – After ensuring the themes were reflective of the content of the interviews, the themes were defined and named.

*Phase 6 (Thematic report)* – AC completed a thematic analysis report whereby themes were supported with relevant quotes and definitions. The report was reviewed by KD for quality assurance purposes.

### **Background of researcher conducting the thematic analysis**

AC is a 30 year-old PhD student from Ireland. He grew up in a rural Irish village in the centre of Ireland and has over 10 years' experience working as an exercise and nutrition practitioner. Prior to starting his PhD, he completed an MSc in Sports Performance and worked with a multi-national nutrition company in a nutrition and education role. During his time working in this role, he experienced working from home 1 day per week prior to the Covid-19 pandemic. AC was working as a personal trainer, in a face-to-face capacity, during the Covid-19 pandemic and did not experience working from home in this context.

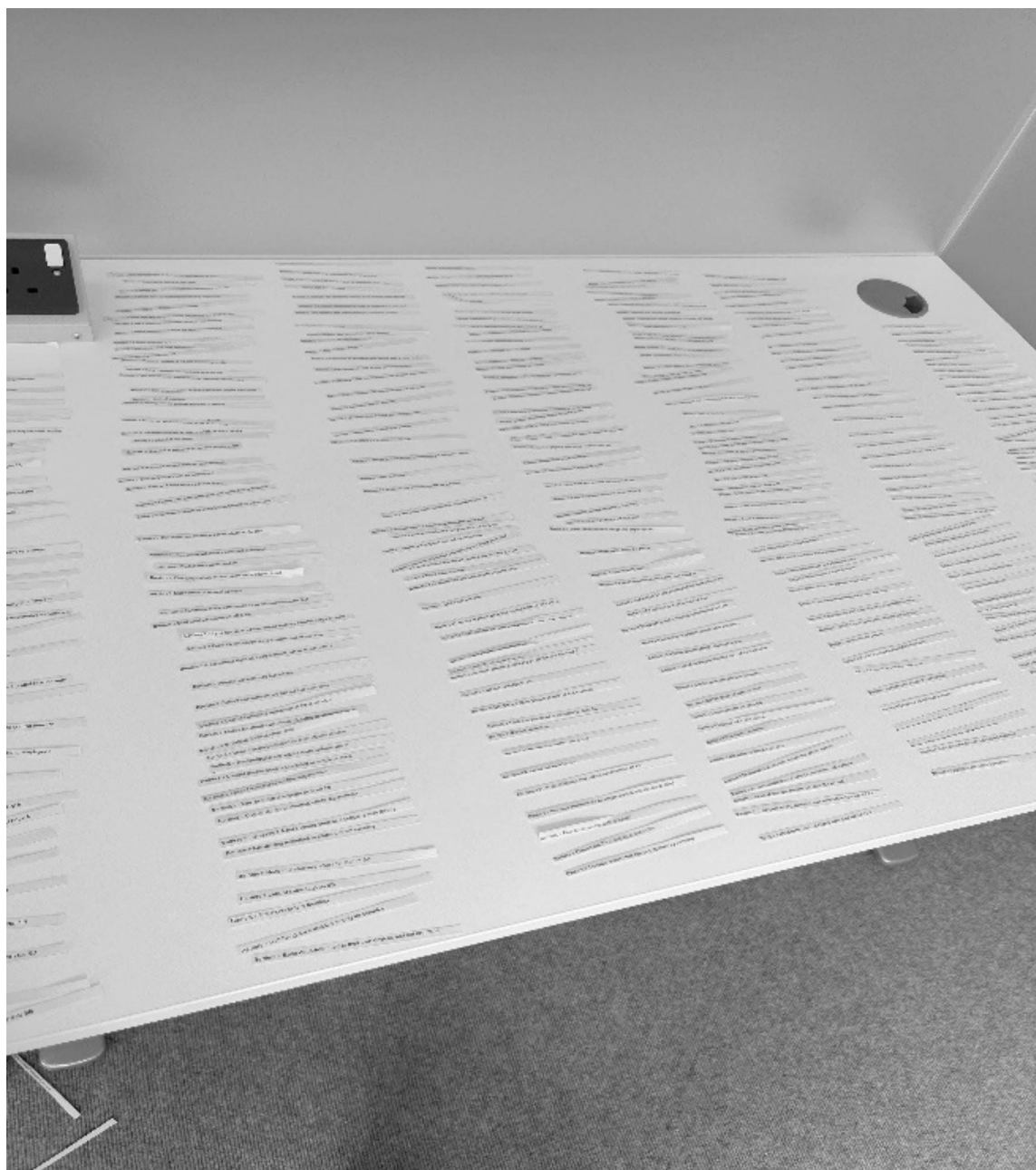
### **Results**

A total of 20 managers from 3 countries (Ireland, Spain and The Netherlands) were interviewed. Of these, 55% of the participants were male, with 45% aged between 36 and 45 years of age. A total of 35% of interviewees were either Head of Departments or in a managerial role. Table 1 illustrates the baseline characteristic of participants.

As part of the thematic analysis outlined previously and through an inductive approach, there were 4 themes developed, each of which had 3 sub-themes. Supplementary file 3 illustrates the thematic map. Each of the themes have been mapped to the COM-B model (Table 2).

#### **Theme #1 - We're all in this together (Opportunity)**

This theme captures the need for a top-down approach to any intervention aimed at reducing sedentary time in the home-office environment. It appears targeting a reduction in sedentary time only at an individual level may not be effective, due to the apparent poor culture that exists within organisations. PA during work hours does not appear to be accepted, while there is a lack of leadership from managers in reducing their own sedentary time. Although reducing an employee's sedentary time occurs at an individual level, ensuring there is organisational support will provide managers with the freedom to promote and lead by example, which may subsequently create the necessary opportunities for employees to also reduce their sedentary time. Furthermore, due to the



**Fig. 1** Codes printed for manual process to theme development

isolated nature of home-office working, there is also an eagerness from managers to create a social element to future interventions.

#### **Support us, so we can support them** **(Social opportunity)**

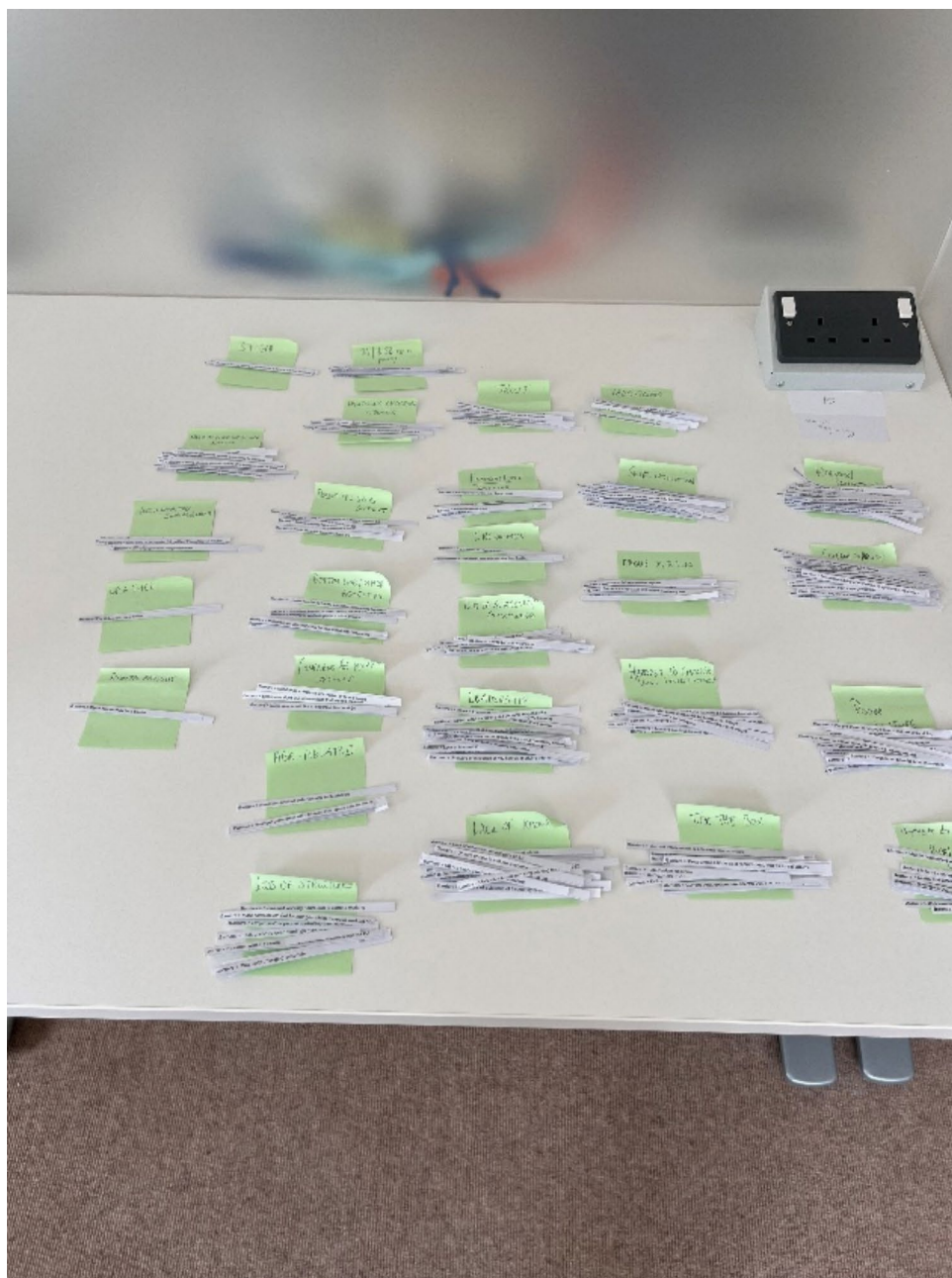
Having organisational support was seen as a key influencing factor on the likelihood of managers promoting an intervention or leading by example in reducing their own sedentary time. Managers appear to be reluctant

to promote PA during working hours in fear of how this may be viewed by senior executives within the company.

*“Because there’s a fine line between promoting something (fitness related) that is organization wide, which is fine and that’s all, as a manager you can do, and it’s promoting something that’s already in place within the organization. So because there isn’t anything in place, it’s a very fine line” (Interview 2, Ireland).*

In addition, managers felt that currently they were not provided with sufficient resources or budgets to support their staff in increasing their PA during work hours.





**Fig. 2** Initial theme development

Managers often felt as if they needed to make things happen themselves with very little support from the organisation.

*"Because time and resources are always limited...I would love to have a budget twice as big as the one I have and be able to dedicate more time and more people, for example, to these things (interventions to reduce ST), but I think I have the minimum resources" (Interview 4, Spain).*

Organizational support was highlighted in giving managers the confidence to engage with and promote interventions, particularly in large multi-national companies.

The diverse nature of large organisations (i.e., cultural differences, national legislation and policy) may create a barrier for managers without organisational support and education on the best practice for such an environment.

*"Yeah, 100% (would promote an intervention that is supported by the company). Because I know that when they bring out those directives company wide, it's considered, and they consider the fact that It's a global company, cross-border, multiple cultures, you know. They're the experts in rolling out these types of programs*

**Table 1** Baseline descriptive characteristics of participants

Characteristic	% (n)	Ireland	Spain	The Netherlands
<b>Sex</b>				
Male	55% (11)	5	5	1
Female	45% (9)	4	3	2
<b>Age (yrs)</b>				
18–25	5% (1)		1	
26–35	25% (5)	4	1	
36–45	45% (9)	5	2	2
46–55	10% (2)		2	
56–67	15% (3)		2	1
<b>Role</b>				
Director	25% (5)	3	2	
Human resource	20% (4)		2	2
Occupational risk prevention	10% (2)		2	
Head of department/manager	35% (7)	4	2	1
Health promotion specialist	10% (2)	2		

**Table 2** Themes mapped to the COM-B model [27]

Factor	Definition	Subdivisions	Themes	Example quotes
<b>Opportunity</b>	Opportunity is defined as all the factors that lie outside the individual that make the behaviour possible or prompt it. Opportunity can be distinguished between physical opportunity and social opportunity.	<i>Physical opportunity</i> - is afforded by the environment. <i>Social opportunity</i> - is afforded by the cultural milieu that dictates the way that an individual thinks about things.	N/A "We're all in this together" "Give them the opportunity"	N/A "I think we (management) also need to lead by example. Because if they're not doing it, staff are less likely to do it" (Interview 1, Netherlands) "Before there was more of a natural lunch break, start and finish time, whereas now people are working all sorts of hours and times" (Interview 8, Ireland)
<b>Motivation</b>	Motivation is defined as all those brain processes that energize and direct behaviour, not just goals and conscious decision-making. It includes habitual processes, emotional responding, as well as analytical decision-making. Motivation can be distinguished between reflective and automatic motivation.	<i>Reflective motivation</i> – involves evaluations and plans. <i>Automatic motivation</i> – involves emotions and impulses that arise from associative learning and/or innate dispositions.	"The invisible asset" "From risk prevention to health promotion" "Give them the opportunity"	"Human capital is really important to us, that's effectively the people that are here. It's integral to everything that we've achieved. So they'll fulfil their potential, but also help the organization meet their goals" (Interview 7, Ireland) "So, well, when you are in an ERT0 (financial assistance), you're not thinking about doing exercise, you are thinking about paying the payroll at the end of the month, right?" (Interview 1, Spain) "Because in the end, we work mainly, we are a company that works in what we like, so, many times the work absorbs you more unconsciously" (Interview 6, Spain)
<b>Capability</b>	Capability is defined as the individual's psychological and physical capacity to engage in the activity concerned.	<i>Physical capability</i> – having the physical capability to engage in the behaviour. <i>Psychological capability</i> – being the capacity to engage in the necessary thought process – comprehension and reasoning.	N/A N/A	

company-wide. So I would 100%, because I'd have a lot of confidence in it." (Interview 4, Ireland).

Furthermore, a stigma surrounding working from home and the potential impact on productivity may reduce the likelihood of managers engaging in or encouraging their employees to engage in PA during working hours. Many managers felt that when they were working from home, it was seen as an unproductive way of working, hence when

considering reducing their sedentary time whilst working from home, they feared that if someone contacted them and they did not respond, this would be seen as them not working. Therefore, it is plausible to assume that if managers feel they do not have the freedom to reduce their sedentary time, an employee, who is not in a senior position within the company, will also experience this.

*"I don't say I'm off for a run now and it is probably because up to now there is a little bit of that, you know, when we used to work from home before Covid, you would get the whole like "Oh, working from home". When we were at that meeting and I said it's changed my life I said something like, oh yeah "I collect my kids and then I go back online if I need to go back online" and he said "oh yeah, you go back online" (Interview 8, Ireland).*

### **We need to lead by example (Social opportunity)**

Managers highlighted the impact their own behaviour may have on the likelihood of their employees reducing their sedentary time. Although most managers were open to encouraging their employees to engage in PA during working hours, it was felt that this would only be effective if managers engaged in PA and reduced sedentary time themselves.

*"I think we (management) also need to lead by example. Because if they're not doing it, staff are less likely to do it" (Interview 1, Netherlands).*

In addition, having a senior figure within the organisation involved at the launch of an intervention may further increase engagement and provide employees with the confidence to reduce their sedentary time.

*"Yeah, so sometimes engagement numbers are low. But, as M105IRE was saying there, the management piece is really important, so like we've seen with events in (their organization) in particular, where, say, if there's a manager who might give an intro to a seminar or if there's some kind of manager involvement where someone that you know within the organization that people know and recognize, they seem to get higher engagement overall" (Interview 5, Ireland).*

Having leadership from managers and senior executives on reducing their sedentary time will in return show employees that it is not only encouraged but acceptable to engage in PA during working hours. Leadership, combined with organisational support, will create a sense of freedom amongst employees and create opportunities that would otherwise not exist.

### **Let's bring back socialisation (Social Opportunity)**

Due to the unique isolated nature of working from home, many managers felt that creating a social aspect, albeit online, to any intervention may help increase engagement. It was felt by many that not only was this an effective way of reducing sedentary time but it could also be an effective way of increasing social interaction amongst colleagues who otherwise may have very little interaction with each other.

*"If it is a Zoom class, or whatever the case is, there's opportunity for people to engage with other people, not*

*just actually sitting at home all day by themselves and, whereas now they'd be active but they'd also be engaging with other people and I've no doubt about it, that will enhance productivity within the organization but will also help people feel better about themselves" (Interview 2, Spain).*

The social interaction, combined with PA during working hours, was often seen as a way of increasing productivity and general well-being of staff who may otherwise suffer from social isolation. There appears to be a percentage of employees who may not be interested in PA and creating a social element may be an easy way of increasing the engagement from a population that may otherwise not engage.

*"We are also very much looking at what we offer and that it also ensures connection with the people. Because working from home and not always meeting each other at the office, we are looking to ensure that we connect and move" (Interview 2, Netherlands).*

*"But you want to see the amount of people that are actually in attendance at these, it's unbelievable, it's all online. So you're getting more people online than you are if it was actually a physical environment....and if you're on one of these calls, people are staying putting in messages, it's really, really good" (Interview 8, Ireland).*

Furthermore, if employees see colleagues also engaging in PA, it may create a sense of freedom to reduce their sedentary time at other occasions as it becomes more socially accepted.

### **Theme #2 - Give them the opportunity (Opportunity & motivation)**

This theme highlights the lack of boundaries between personal and work life whilst working from home. The increase in flexibility around work hours, which is often seen as a benefit to home-office working, may result in extra work hours. In addition to this, the increase in the use of online and instant communication channels (i.e., Zoom, Microsoft Teams) now means that employees have less control over their schedule, which often leads to an increase in workload. Lastly, due to the isolated nature of working from home, it appears that when staff are not in online meetings, they have very little distractions which can result in hours of uninterrupted work and reduce the opportunity for physical activity.

### **Does anyone remember their work hours? (Social opportunity)**

Managers reported that the loss of structure on work hours whilst working from home often results in employees working longer hours. Many managers felt that employees view the ability to work whenever they wanted (due to the flexibility of home-office working) as an advantage, but this often led to an increase in the



amount of time spent working and an increase in overall workload, which both negatively influenced their ability to reduce their sedentary time during work. In an office context, employees usually have a structured break and lunch time, which would result in a reduction of both total and uninterrupted sedentary time. However, home-office working regularly results in employees working through lunch and break times, reducing their opportunity to reduce their sedentary time and engage in PA.

*“Before there was more of a natural lunch break, and there’s more natural start and finish time, whereas now people are working all sorts of hours and times, that’s definitely a challenge for us as a business” (Interview 8, Ireland).*

#### **Losing control of their schedule (Social opportunity)**

It was felt that the drastic increase in online meetings, through improved communication software, appears to have increased the number of overall meetings and in particular, the number of back-to-back meetings. This increase in online meetings likely increases sedentary time. Subsequently, due to the amount of time now spent in these online meetings, it appears employees are often required to work additional hours trying to get through the workload that accumulated during these meetings.

*“I think some of the challenge is where you’ve got people that are on an awful lot of, say, teams call or zoom calls. They could be back-to-back in a lot of cases. That’s a challenge I think where people could have literally very little time in the day to move... because people have kind of forgotten about the traditional, not traditional because there probably isn’t traditional anymore, but the like people taking 15 or 20 minutes for their lunch. What’s happening now in a lot of cases is, people are on a call and they’re eating their lunch at the desk at home” (Interview 9, Ireland).*

The emergence of online diaries that are automatically attached to employees’ emails and the open-access nature that colleagues now have to these diaries means that employees may be losing control over their own schedule, which often results in very little opportunity to reduce their sedentary time.

*“A lot of the time the meetings are outside of the control of, you know the person who is sitting at home. You know where other people are managing diaries and popping meetings in and it happens to me like I mostly back-to-back for the entire day” (Interview 7, Ireland).*

#### **They just become immersed in the work (Automatic motivation)**

The unique nature of working from home means that when employees are not in meetings, they otherwise have very little distractions. Although this may be beneficial

for productivity as it creates a tunnel-vision approach to getting work done, it appears to result in a loss of conscious awareness as to how long they have spent sitting and the lack of PA that they have engaged in. The loss of conscious awareness to the time spent sitting, combined with an apparent increase in workload outside of meetings, appears to result in employees sitting uninterrupted for longer periods of the day.

*“Because in the end, we work mainly, we are a company that works in what we like, so, many times the work absorbs you more unconsciously” (Interview 6, Spain).*

Managers highlighted how reminders were often seen as a useful way of breaking up this uninterrupted period of work by creating conscious awareness on the lack of PA, which may spur employees to act and reduce their sedentary time.

*“There are apps that notify you randomly. You say, listen, notify me once a day, and once a day it notifies you. And you have to do whatever it is” (Interview 1, Ireland).*

#### **Theme #3 – From risk prevention to health promotion (Motivation)**

The Covid-19 pandemic was sprung upon organisations without warning, while the dramatic shift to working from home occurred almost overnight. This theme illustrates how companies initially reacted to a rapidly changing environment and focused on the health and safety of their employees. However, as we progress to a post-pandemic era, organisations may be able to use the infrastructure put in place during the pandemic, such as the use of online educational seminars or ergonomic assessments, to positively impact home-office-based PA behaviours.

#### **We were in survival mode (Automatic motivation)**

The sudden changes in both working and operating environments that all businesses had to endure when the pandemic initially hit created significant instability within organisations, meaning their sole focus was on the financial survival of their company and the health and safety of their employees. This meant many organisations were not in a position to consider the sedentary time of their employees who were working from home. In addition, any initiatives that were ran by companies appear to have been focused on the mental health aspect and not PA, as employees appear to have been distressed by the instability and uncertainty at the time.

*“So, well, when you are in an ERTD (financial assistance), you’re not thinking about doing exercise, you are thinking about paying the payroll at the end of the month, right?” (Interview 1, Spain).*

*“It’s also true that, let’s see, that during the pandemic we had a problem, we had to use the Government furlough*

scheme, we had a very critical situation" (Interview 1, Spain).

*"Covid appeared and it took us to remote working and things didn't go well... the issue of people's emotional health, there were people who had a very bad time and so they expressed it to us and we had to deal with it" (Interview 6, Spain).*

#### **We needed to meet standards (Automatic motivation)**

Most organisations were reactive to the pandemic, trying to ensure that their employees working environment adhered to the required health and safety standards. Most employees were forced to work from home with very little suitable office equipment to ensure they had a safe and appropriate place to work. This resulted in organisations having to prioritize ergonomic assessments, without consideration for PA or fragmenting sedentary time.

*"If you require staff to work from home, you're also required to provide a good home workspace for them" (Interview 3, The Netherlands).*

As companies moved away from the pandemic, they then had to deal with staff returning to the office and "normal working", albeit working from home was, and still is, prevalent to a lesser extent. This meant that the focus switched from ensuring standards were met in a home-office setting to now ensuring they were met as staff returned to the office. This meant that PA during working hours could still not be a priority.

*"Yes, my colleague who is the prevention technician is more in charge and, for example, he goes to do inspections of the workplace. and sees if the chair is properly positioned, if he has the distance from the computer. As for breaks, I doubt I'll say too much" (Interview 2, Spain).*

#### **Now's the time (Reflective motivation)**

Managers highlighted that any initiatives that were undertaken during the pandemic were focused on the mental health of their employees. The uncertainty and instability that occurred during the seismic shift to working from home created mental health challenges. This led to organisations providing mental health initiatives and services where possible, at the expense of many PA interventions.

*"We're more focused on the mental health of staff: social care, talking to one another, talking to a psychologist if you need to. I don't think we've paid as much attention to the physical side" (Interview 1, The Netherlands).*

However, as things return to normal post-pandemic, it appears organisations may no longer need to only prioritize mental health supports, as the social interactions of their employees resume. This means that many managers believe that organisations, and importantly, employees,

are in a position where they can begin to prioritize PA and reducing their sedentary time. Organisations may be able to leverage the existing framework that was used for mental health initiatives, such as educational seminars or talks, to promote PA in the workplace.

*"Now it's more important, I think that the mental aspect is not so important because now you have social contact and now what needs to be planned is the physical aspect, right?" (Interview 5, Spain).*

#### **Theme #4 - the invisible asset (Motivation)**

Initial fears from managers on the implications of an intervention to reduce sedentary time appear to arise from either the impact a reduction of sedentary time may have on profit or the cost of an intervention. This theme highlights how interventions need to be cost-effective and, at the very least, have a neutral impact on productivity. Despite this, managers care about their employees and believe a happy and healthy employee will benefit the company in the long-term. Providing evidence to organisations that reducing sedentary time is beneficial for their employee's health and can be done in an efficient manner, both in terms of time and money and may benefit the company in the long-term, could increase the much-needed organisation support.

#### **What about profit? (Reflective motivation)**

Managers reported being fearful of the potential impact that a reduction in the sedentary time of their employees may have on the performance and profit of the company. Managers stated that the sole concern of companies was the profit and that their performance, and the performance of their employees, are judged off the profit of the business. Managers appear to fear that allowing their employees to reduce their sedentary time may reduce productivity and subsequently the profit of the company. If increasing employee's PA during working hours comes at the expense of profit, managers feel they will not be supported by the company, hence they are currently reluctant to promote or encourage a reduction of sedentary time.

*"We are a company, in the end there have to be results and, and the numbers have to add up" (Interview 8, Spain).*

*"People who decide, they only care about the euros. So if you can say to them: 'Wow, every percent that goes off saves you a euro a year and this is the way to do it,' then you have, you have these people" (Interview 1, The Netherlands).*

### We want to help

#### (Automatic motivation)

Despite the concern over the impact reducing sedentary time may have on profit, there appears to be a genuine eagerness amongst managers to help improve the health and well-being of their employees. Managers seem to be proactive in trying to promote, as much as feasible, a healthy occupational lifestyle amongst their employees. Some managers felt a personal responsibility to ensure the occupational well-being of their staff was looked after.

*"You know, the due care of all employees I suppose within my directorate would be a responsibility for me directly but you do check in with other people just to make sure everything is okay with them" (Interview 7, Ireland).*

Having managers who genuinely care about the health of their staff will be advantageous in creating opportunities for employees through support, leadership and encouragement to engage in PA during working hours. Currently, managers are encouraging staff to get out for walks during their own time, such as at lunch, when there won't be pressure from the organisation.

*"I'd be a big promoter of that and I would always encourage my team to get out, even go for a walk or get out for a run, and even at lunch time take the dog for a walk, or do whatever, but just get some head space" (Interview 1, Ireland).*

### It's in the company's best interest

#### (Reflective motivation)

Managers expressed an appreciation that prioritizing the health and well-being, and subsequently the performance, of their employees would ultimately be beneficial to the company in the long-term. Managers appreciate that employees who are healthy and fulfilling their potential will also be beneficial to the company. Highlighting the benefits of maximising the potential of employees, through PA during working hours and the subsequent increase in occupational well-being, was seen as a useful way of potentially increasing organisational support and creating opportunities to reduce sedentary time.

*"Human capital is really important to us, that's effectively the people that are here. It's integral to everything that we've achieved.....so they'll fulfil their potential, but also help the organization meet their goals" (Interview 7, Ireland).*

Further to maximizing the potential of their current employees, participants suggested that prioritizing the well-being of employees may be a strategy for recruiting the best talent. It was felt that organisations were always looking to recruit the best talent and that by supporting and helping their current staff maximise their potential, through occupational well-being, it may act as a competitive advantage over other organisations when looking to recruit the best talent.

*"Because we need the best people out there...So for us to do that, we need to do that within the organization itself" (Interview 7, Ireland).*

Ensuring that organisations see the potential benefits to reducing employee's occupational sedentary time in the long-term may be an effective way of increasing support for initiatives and providing managers and employees with the freedom to engage in PA during work hours.

### Discussion

To the best of the authors knowledge, this study is the first investigating managers perspectives on the factors influencing their employees sedentary time in a home-office context. The findings of this qualitative study highlight the experiences of managers from Ireland, Spain and The Netherlands. Organisational support appears to be central to most of the changes necessary to reduce employees sedentary time. This support will provide managers with the freedom to encourage employees to reduce their sedentary time whilst also leading by example and showing staff it is culturally accepted, which will create opportunities for employees to engage in PA during working hours that otherwise would not exist. As companies move away from the Covid-19 pandemic, they are now in a position to prioritize the PA levels of their staff, which may also benefit the company through improved employee well-being and provide a competitive advantage when recruiting new staff. One notable consideration worth mentioning is that after mapping the sub-themes and themes to the COM-B model, neither physical opportunity nor capability seem to be influencing sitting time in a home-office context. Instead, social opportunity (culture) and motivation, both reflective and automatic, appear to be the most influential and need consideration when looking to reduce sitting time in this context.

Overall, most managers highlighted the need for a top-down approach to any intervention, as many of the most influential factors highlighted (such as leadership, creating opportunities and boundaries on work hours) may not be achievable in the absence of organisational support. This is linked to the social opportunity of managers from a COM-B perspective, whereby the culture may dictate how an individual thinks and acts. Notably, these findings illustrate how managers often feel unsupported in their efforts to improve the health and well-being of their staff, while also acknowledging the added weight that organisational support would have at encouraging employees to reduce sitting behaviours in the home-office context. This finding aligns with evidence from office-based settings, which emphasised the importance of a change in organisational culture that leads to a top-down approach to support staff in their efforts to reduce their sedentary time [22, 33, 34]. Furthermore, it

appears the visibility of senior leaders participating and communication about interventions creates a sense of permission amongst employees to also engage [35, 36]. Interestingly, although these studies were in office-based workers, it appears that similar factors influence the ability of those working from home to reduce their sedentary time. Future interventions targeting a reduction of sedentary time amongst home-office workers need to consider organisational culture and managerial leadership despite the isolated nature of this environment.

The unique set-up of a home-office has resulted in a lack of opportunities for employees to reduce their sedentary time and engage in PA, due to the absence of boundaries on work space, work hours and meetings. These findings are supported by existing research, highlighting a lack of opportunity as a primary barrier to increasing PA in the office workspace [34, 37]. Both of these studies, as with the majority of research in this area, were in a typical office environment, where a lack of boundaries on work hours and meetings may not be problematic, in contrast to managers' perspectives on the home-office environment presented in this study. Notably, from a COM-B perspective, this again refers to the social opportunity of managers and how the culture in which they work in is influencing their sitting time. However, there appears to have been significant infrastructure put in place during the Covid-19 pandemic to accommodate those working from home, such as online seminars, mental health initiatives and interventions, ergonomic assessments and the provision of information on the importance of correct posture. This infrastructure may provide an opportunity for organisations to introduce employees to the importance of reducing their sedentary time and combine mental health initiatives or interventions with a reduction in occupational sedentary time through walking meetings, an educational website or online seminars on the importance of creating personal boundaries for both mental health and PA opportunities [38, 39]. Furthermore, strategies already implemented in typical office settings may be transferable to the home-office environment. Walking meetings, which is a feasible way to increase PA opportunities, has been ranked amongst the highest facilitators for reducing sedentary time in office settings, while it is also feasible for the home office workers via digital technological advancements (such as smartphones) [40].

Understandably, the financial implications of any reduction in sedentary time were amongst the main concerns for managers. In addition to the concern over costs, managers also stated their hesitancy towards implementing interventions due to fears over the impact reducing sedentary time may have on profit or productivity, highlighting how the reflective motivation (involving evaluation and plans) of managers may be impacting

the likelihood of reducing their sitting time or encouraging their staff to do so. This study extends the findings of a recent paper which identified cost as a barrier to the implementation of workplace interventions [40]. Managers appeared to be fearful over how organisations may look upon a reduction in performance as a result of encouraging their employees to reduce their sedentary time. However, it is important to note that the current body of evidence suggests that a reduction in sedentary time is either neutral or beneficial to work performance [41–43]. Providing information or education to managers on the potential benefit to both the organisation, through an improved or neutral impact on performance, and employees, through better health and well-being, may help overcome this initial hesitancy.

Importantly, managers have an eagerness to help and feel that improving employee's health and well-being will ultimately be beneficial to the company in the long-term, highlighting the automatic motivation (innate dispositions) of managers to want to help their staff. This stance is supported by recent evidence, which identified that improving the well-being of employees was associated with better employee engagement and satisfaction. Interestingly, in line with the other findings of this study, this was achieved through a well-being champion, coupled with organisation support and commitment to employee well-being [44]. Further research exploring the financial and performance implications of reducing sedentary time in a home-office context is merited and will be necessary to support the implementation of future interventions.

One notable observation in the findings presented here relates to the absence of factors relating to physical opportunity. It does not appear that physical opportunities, from a manager's perspective, are a significant factor influencing sitting time in a home-office context. This is despite a large body of evidence now showing that sit-to-stand desks are a potential modality for reducing sitting in the workplace [45–49]. Furthermore, contrary to the managers perspectives within this study, a recent study highlighted how office-based workers experienced many perceived benefits from using sit-stand desks in an office environment [50]. This difference may be, in part, linked to the financial implications for companies, as sit-stand desk would provide a significant financial burden for organisations [51]. As managers, financial considerations are likely to be at the fore when considering interventional approaches within companies.

### Strengths and limitations

This study is, to the authors knowledge, the first study to investigate the factors influencing an employee's ability to reduce their sedentary time in a home-office context from a manager's perspective. The nature of the home-office provides unique challenges and opportunities for

PA during working hours. The unique nature of home-office working now affords organisations the opportunity to, in certain cases, hire employees from anywhere in Europe. This creates cross-cultural challenges for interventions targeting a reduction in sedentary time in a home-office setting. The cross-cultural nature of this study, which included participants from three different countries employed in small, medium and multinational companies, captures the experiences of a sample of managers and organisations dealing with these challenges daily and has real world relevance in today's working environment. It must also be noted that this study represents the opinion of managers only and may differ from that of the employees. The aim of the Click2move Consortium is to conduct a qualitative study also investigating the opinions of employees and to subsequently develop an intervention targeting a reduction in sedentary time.

It must be noted that there are potential limits to the representativeness of the sample. However, the inclusion of managers from three different nations, coupled with diversity amongst the participants included (i.e., roles, age, geographical location), provided a broad range of perspectives. Additionally, as no further new information occurred within later interviews in each nation, it is unlikely that additional factors would have arose. As illustrated in the inclusion criteria, organisations were required to have a remote working policy. Many small-to-medium sized organisations may not have formal policies in place but may still have employees working from home and may face different or additional challenges to larger organisations and should be considered on an individual basis. Further to this, the significant inter-personal variance in home-office environments compromises the ability to draw robust and representative conclusions on an international level. The cross-cultural nature of this study created translational and cultural challenges. To address this, regular meetings were conducted between researchers in all countries to ensure the translation and context of the interviews was not lost between countries. Furthermore, translation/back-translation was not performed after the interviews were translated to English. However, regular meetings were held during the translation phase, whereby the researchers involved discussed the transcripts and tried to ensure the context of the discussions was not lost during the translation or coding.

## Conclusion

A top-down approach with a high level of organisational support and senior management buy-in is needed to create a lasting reduction in sedentary time amongst home-office workers. This top-down approach will allow for policy changes that are also likely needed. Policies on structured work hours and meetings will create

opportunities for employees to reduce their sedentary time and increase PA during working hours. Leveraging the existing infrastructure in place for the health and safety of home-office workers, such as ergonomic assessments, may provide a convenient way of educating employees on the dangers of sedentary behaviours and promoting PA in the workplace. Lastly, providing organisations with evidence that a reduction in sedentary time will not be detrimental to work performance and may be beneficial to the organisation in the long-term may overcome the initial hesitancy often encountered from organisations and improve the health and well-being of employees.

## Supplementary information

The online version contains supplementary material available at <https://doi.org/10.1186/s12889-025-22184-7>.

Supplementary Material 1

Supplementary Material 2

## Author contributions

JBR, KD, KP, CVC, ASM and APR designed the research. AC, IPS and PR conducted the interviews. IPS and PR translated the interviews. AC carried out the reflexive thematic analysis. DW and KD reviewed the themes. AC wrote the initial draft of the paper. All of the authors revised the initial draft and made suggestions. AC wrote the revised draft, which was reviewed by KD. All authors read and reviewed the final manuscript.

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## Data availability

The data collected and analysed during this study is not publicly available. However, it can be made available by the Click2Move Consortium upon reasonable request.

## Declarations

### Ethics approval and consent to participate

Ethical approval for this study was granted by the Research Ethics Committee of the Spanish (250/2023) and Irish University (20221022). All participants were provided with an information sheet and subsequently signed an informed consent form. This study was conducted in accordance with the Declaration of Helsinki.

### Consent for publication

Not applicable.

### Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could influence the work reported in this article.

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