

Worksite health promotion for employees working from home: A vignette experiment examining intentions to participate

Anne C. van der Put¹ | Jornt J. Mandemakers² |
John B. F. de Wit³ | Tanja van der Lippe¹

¹Department of Sociology, Faculty of Social and Behavioral Sciences, Utrecht University, Utrecht, The Netherlands

²Atlas Research, Amsterdam, The Netherlands

³Interdisciplinary Social Science: Public Health, Faculty of Social and Behavioral Sciences, Utrecht University, Utrecht, The Netherlands

Correspondence

Anne C. van der Put, Department of Sociology, Utrecht University, Padualaan 14, 3584 CH Utrecht, The Netherlands.
Email: a.c.vanderput@uu.nl

Abstract

This study explores which factors affect employees' intention to participate in worksite health promotion (WHP) when they work from home. Employees increasingly work from home, yet existing WHP is mainly tied to the workplace. We lack knowledge on what might stimulate employees to make use of WHP specifically when they work from home. Drawing on the theory of reasoned action, we studied whether type of activity, duration, if WHP takes place during work time, how often employees work from home (shaping employees' attitude) and colleague participation (social norms) explain employees' intention to participate in WHP when working from home. To do so, we employed a vignette experiment. Results show that employees' intentions are higher for walking and taking breaks than for an online sports class. Moreover, intentions are higher for shorter activities and when participating in WHP can be done during work time. The more colleagues participate, the higher intentions of employees to do so too. By offering WHP for employees at home, employers can promote

The Utrecht University Faculty of Social and Behavioural Sciences' Advisory Committee on Ethical Issues has declared this study to be in line with ethical requirements. We have no conflicts of interest to disclose.

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employees' health even when these are not present in the workplace. Our study provides leads into how employers may create conditions under which employees use WHP when working from home.

KEYWORDS

employees, health, intention, survey experiment, working from home, worksite health promotion

INTRODUCTION

Many organisations invest in the health and well-being of their employees by providing worksite health promotion (WHP) initiatives. Around 42% of European organisations offer healthy catering facilities in the workplace and 27% promote physical exercise at work (Irastorza, 2019; Van der Put & Mandemakers, 2019). WHP contributes to employees' health and well-being (Rongen et al., 2013) as well as increased productivity and reduced absenteeism (Ott-Holland et al., 2019; Parks & Steelman, 2008), benefitting both employee and employer.

Many WHP initiatives are tied to the workplace; however, employees increasingly work from home. In many countries, this was one of the measures to prevent the spread of Covid-19, but prior to March 2020, the number of employees that worked from home was already rising (Guler et al., 2021). It is expected that working from home is to become even more prevalent in the future (Loef et al., 2022; Oakman et al., 2020). When employees work from home, they can no longer make use of WHP available in the workplace. A main reason for employers to offer WHP is because they feel responsible for the health and well-being of employees (Pescud et al., 2015), and this does not change when employees work from home (Oude Hengel et al., 2021). Few organisations currently offer WHP for employees working from home. As a result, little is known about what employers can do for employees working from home and whether employees intend to participate in WHP in the home context. This study therefore explores whether employees intend to participate in WHP at home.

Previous research shows that not all employees make use of WHP in the workplace: the average uptake is about 33% and there are large differences between organisations (Robroek et al., 2009; Schwetschenau et al., 2008). Main reasons for employees to participate in WHP at work include having time, it not interfering with work tasks, colleague behaviour and organisational support (Ott-Holland et al., 2019; Seward et al., 2019; Van der Put et al., 2021). We explore whether these factors also play a role in WHP use when employees work from home. Working from home can save commuting time that employees can spend on WHP, though many employees that work from home tend to work overtime (Xiao et al., 2021). At home, employees typically have more flexibility and autonomy over their working hours, which could make it easier for employees to prevent WHP interfering with work tasks (Peters & Van der Lippe, 2007). In the workplace, colleagues' participation is one of the main facilitators for WHP use among employees, and it is unclear if this also applies to WHP in the home office, when employees may have less contact with their colleagues (Van der Put et al., 2021). Also, the amount of time employees work from home may play a role. Employees could be more detached from the workplace at home yet still want to show they are committed workers, preventing them from using WHP (Van der Lippe & Lippényi, 2020). We study WHP in the context of working from home and examine

if factors known to play a role regarding WHP use in the workplace are also applicable to WHP use in this different context. To do so, we draw upon the theory of reasoned action which posits that intention to behave can be explained by attitudes towards that behaviour and social norms (Ajzen & Fishbein, 1980). We argue the type of WHP, its duration, whether it takes place during work and how often employees work from home give rise to employees' attitudes. The behaviour of their colleagues shapes the social norm.

In this study, we make use of a vignette experiment. In such experiment, respondents are presented with various descriptions of a hypothetical situation called vignettes, after which they are asked to make a decision, in our case whether they intend to participate in WHP when working from home (Auspurg & Hinz, 2015). WHP at home may become more prevalent when more employees work from home (Oakman et al., 2020; Van den Heuvel et al., 2021), but as currently few employers offer WHP for employees working from home, this may make it difficult for employees to imagine which factors will affect potential participation. The vignette experiment, with its hypothetical setup, overcomes this. Research suggests that people's response to vignette experiments matches their real-life behaviour well (Hainmueller et al., 2015). Additionally, although the situation we are describing is hypothetical, many employees worked from home during the Covid-19 pandemic and were still (partly) doing so when the data were collected in spring 2021 (RIVM, 2021). This helps the respondents to make realistic decisions. The vignettes differ systematically in the different factors that we hypothesise to play a role, which makes it possible to disentangle different considerations employees have for using WHP when working from home and lowers the risk of social desirability bias (Auspurg & Hinz, 2015). These strengths make a vignette approach well suited for our study.

We focus on three different activities: walking, taking short breaks, and an online sports class. It is important to find out which WHP employees like to do as enjoyable activities are related to better job performance and satisfaction (Sianoja et al., 2018). Walking, taking short breaks and participating in an online sports class are activities that can be done from the home without the need of additional equipment but have also been implemented as WHP in the workplace (Adams et al., 2017; Edmunds et al., 2013; Sianoja et al., 2018). Additionally, they can prevent the sedentary lifestyle many employees who work from home have (Loef et al., 2022; McDowell et al., 2020). The activities can also aid recovery in stimulating detachment from work (Bennett et al., 2019; Oude Hengel et al., 2021; Sianoja et al., 2018). However, these activities also differ. Taking breaks could be an activity that may already be inherent in the working day for some employees (Mackenzie et al., 2019). Walking is an easy activity that can be done by most employees, whereas an online sports class may be too vigorous for some participants or require too many skills (Pollard & Wagnild, 2017). By studying these different activities, we gain insights on how to successfully promote the health and well-being of employees that work from home.

ANALYSIS OF POTENTIALLY INFLUENTIAL FACTORS

Working from home has implications for the health and well-being of employees (Oakman et al., 2020; Tavares, 2017). Employees that work from home more spend more time sedentary, less often engage in physical activity, and are less likely to take breaks during work compared to employees that work in the office (Guler et al., 2021; McDowell et al., 2020; Xiao et al., 2021). WHP for employees working from home can fill a gap here, and there are different factors that explain whether employees decide to make use of WHP encouraged by their employer when they work from home. These factors have been shown to play a role regarding WHP use in the workplace,

and we assess if they are also related to WHP use in the context of working from home. In doing so, we draw upon the theory of reasoned action (Ajzen & Fishbein, 1980). This theory posits that intention to a behaviour can be explained by attitudes (how one feels about the behaviour) and social norms (what others are doing). Though we do not test attitudes directly, we argue that WHP characteristics and how often employees work from home shape their attitudes towards WHP when working from home. Moreover, we study colleague participation as reflecting social norms.

WHP characteristics

There are several characteristics of WHP that may shape employees' attitude towards participating in WHP when working from home and thereby affect whether employees do so. The type of WHP offered is one of those. In this study, we focus on three types of WHP employees can engage in when working from home: walking, short breaks, and an online sports class. These activities can all act as recovery moments during work, help reduce sedentary behaviour and relieve stress (McDowell et al., 2020; Oude Hengel et al., 2021; Sianoja et al., 2018). However, the activities also differ, which may affect employees' attitudes towards participating in them. The sports class and walking could create more of a physical break from the work environment, whereas breaks may also take place behind the screen, for example, through checking social media (Sianoja et al., 2018). Walking and taking breaks could be activities that employees typically do, such that employees already have a favourable attitude towards those and also want to do them at home. These activities could be done at any moment during the working day and require less planning, which may make it easier to fit them into the work schedule. The online sports class is likely more vigorous than walking, and participants may want to shower afterwards, which could create a barrier to participate (Seward et al., 2019). Additionally, less physical skills may be needed for breaks and walking, than for the online sports class, making the former activities more suitable for some employees (Adams et al., 2017; Pollard & Wagnild, 2017).

Hypothesis 1 *Intention to participate in WHP when working from home is higher for walking and taking breaks than an online sports class.*

Employees' attitude towards participating in WHP when working from home may also be affected by the activity's duration. The main reason employees give for not engaging in physical activity and WHP is lack of time, which results from both work and personal life demands (Adams et al., 2017; Edmunds et al., 2013; Hunter et al., 2018). Although spending more time on an activity may provide more room for recovery (Bennett et al., 2019), WHP with shorter duration could be more appealing to employees, as this takes up less time (Schwetschenau et al., 2008). Employees may save time when working from home, for example, because they no longer need to commute to work (Loef et al., 2022), yet there is also evidence that working from home costs more time, as employees tend to work overtime more and spend more time on other duties, such as doing the dishes or cleaning the house (Guler et al., 2021; Peters & Van der Lippe, 2007). Some employees mention WHP adds to their working day because they still need to finish all their work (Tavares & Plotnikoff, 2008), so shorter activities may be viewed more favourably. Additionally, by being away from work for a longer amount of time, employees may put more strain on their colleagues to handle urgent tasks, leading to feelings of guilt and an unfavourable attitude (Bennett et al., 2019).

Hypothesis 2 *Intention to participate in WHP when working from home is higher for activities with a shorter duration.*

Whether participating in WHP when working from home takes place during work time may also affect employees' attitudes. When employees can use WHP during work time, it may be easier to integrate WHP into time demands resulting from work and personal life. Although employees that work from home may have more flexibility to plan their different tasks efficiently (Mackenzie et al., 2019), when working from home the boundary between work and private life dissipates (Oakman et al., 2020). This may lead to increased conflict between various demands, as employees may have to perform multiple, sometimes conflicting, roles as employee, caregiver, voluntary worker and partner. A result of this role conflict may be spending more time on both work tasks and other duties, leaving less time available for WHP (Ott-Holland et al., 2019; Peters & Van der Lippe, 2007; Van der Lippe & Lippényi, 2020). When participating in WHP takes place during work time, this may take away some of the pressure of engaging in healthy behaviour next to work and other tasks. Many employees report that if they can use work time for WHP, this is an important facilitator (Adams et al., 2017; Jørgensen et al., 2016; Sargent et al., 2016).

Furthermore, by allowing employees to participate in WHP during work hours, employers give a strong signal that it is important for employees to take time for their well-being (Mackenzie et al., 2019; Ott-Holland et al., 2019). This may make employees feel less guilty for focussing on themselves rather than taking care of work or family duties (Krick et al., 2019; Ryde et al., 2020) and also help them to form a more positive attitude.

Hypothesis 3 *Intention to participate in WHP when working from home is higher when WHP takes place during work time.*

Time spent working from home

Employees differ in how often they want to and can work from home, which could affect their attitude towards WHP when working from home, and through that their intention to participate. On the one hand, employees may spend more time at home and thus have more opportunity to use WHP that is offered for employees working from home. On the other hand, employees could also be more detached from what happens in the workplace when working from home (Van der Lippe & Lippényi, 2020). They may view WHP for working from home less favourable, either because they consider what happens at home a private affair and see their employer stimulating a healthy lifestyle as unwanted, or they already engage in physical activity or have implemented a healthy working day on their own (Gates & Brehm, 2010; Oakman et al., 2020). This may be especially the case the more employees work from home, when they are more detached from the workplace compared to employees that work from home less (Van den Heuvel et al., 2021).

Additionally, when working from home, employees tend to be less visible compared to working in the office, which could lead to increased effort to demonstrate commitment (Van der Lippe & Lippényi, 2020). Employees may fear that their manager considers them as not committed and competent when they work from home a lot (Mackenzie et al., 2019). To demonstrate their commitment, employees focus completely on their job when they work from home, and thus do not take time for walking, taking breaks or participating in an online sports class (Ryde et al., 2020). For some employees, this is already a reason not to participate in WHP in the workplace (Krick et al., 2019) and may be even more of a concern when working from home. This may cause them to form an unfavourable attitude towards WHP.

Hypothesis 4 *The more employees work from home, the lower their intention to participate in WHP.*

Colleague participation

Whether colleagues participate in WHP in the workplace stimulates employees to do so, too (Seward et al., 2019; Van der Put et al., 2021). This may also be the case when it comes to WHP when working from home. Colleagues are important role models whose behaviour shapes the social norm in the workplace and reflects what behaviour is expected and deemed appropriate (Van der Put et al., 2021). If many colleagues walk during work hours, this may signal to employees that doing so could be a sensible thing to do. However, it may be easier to discern norms in the workplace, when the behaviour of colleagues is more visible, compared to working from home when employees may not know what their colleagues are up to.

Colleagues can also aid participation in WHP in other ways when employees work from home. For example, they can provide information by telling each other about the benefits of taking breaks, convincing each other that this may help them in working productively (Vrazel et al., 2008). The more colleagues do this, the more convincing that information becomes. Next, colleagues can do the activities together—by participating in an online sports class together or taking a short break to catch up with each other like they would do in the workplace (Tavares & Plotnikoff, 2008). In this way, participating in WHP can also be a way of social interaction (Seward et al., 2019), which tends to be lower when employees work from home (Oakman et al., 2020; Van der Put et al., 2021).

Hypothesis 5 *The more colleagues participate, the higher the intention to participate in WHP when working from home.*

METHODS

Sample

To study whether employees intend to participate in WHP when working from home, and which factors affect their intentions, we designed a vignette experiment which was integrated in a survey on working from home and healthy behaviour (Van der Put, 2022). Data were collected in March–June 2021, when the Netherlands was still in partial lockdown. Employees were asked to work from home as much as possible, although they no longer had to provide home schooling if they had children (RIVM, 2021). Responses to the survey were collected by approaching organisations that had previously participated in another study and whose contact details we had from the Dutch chamber of commerce. We sent email messages to one contact person within each organisation, explaining the study and asking whether their organisation wanted to participate. As an incentive, we offered a custom-made benchmark report providing organisations with insights on how their employees experienced working from home. In total, 33 organisations agreed to participate from diverse sectors, such as financial services, ICT and business services. As our study focussed on working from home, mainly organisations that employ knowledge workers whose job enables them to work from home were included. Once an organisation joined the study, we sent an anonymous link to the survey to our contact person, who shared this link with the employees, for example, through an email or intranet. In this way, we guaranteed the privacy of the participating employees. The study protocol was approved by the Faculty Ethics Review Board.

In total, 1105 employees responded to our survey. All participants provided written informed consent. We excluded 205 employees (and through that one organisation) who did not complete

the vignette experiment to allow for analysing the within-subject variation resulting from the vignette factors. We furthermore excluded 58 employees who had missing values on any of the other variables (mostly missing on self-rated health). In analysing a vignette experiment, the vignette is the unit of analysis rather than the employee (Auspurg & Hinz, 2015). Each employee rated six vignettes, so our analytical sample consisted of 5070 vignettes rated by 845 employees working for 31 organisations.

Procedure

In a vignette experiment, the participants are presented with short stories, vignettes, that describe hypothetical situations which differ on several theoretically relevant factors. After that, they are asked to make a decision, in our case whether they intend to participate in WHP when working from home (Auspurg & Hinz, 2015). A vignette experiment is appropriate for this study because it allows employees to make decisions in hypothetical situations, which for many employees is the case concerning WHP when working from home.

Each participant was shown six different vignettes. We chose to present six because this strikes a good balance between overburdening respondents and ensuring enough variation (Auspurg & Hinz, 2015). These six were selected from the entire vignette pool that consisted of all possible combinations of the factors which we considered influencing the intentions to participate in WHP when working from home: the type of WHP (0 = walk, 1 = take short breaks, 2 = online sports class), duration (0 = 30 min, 1 = 45 min, 2 = 60 min), whether WHP counted as work time (0 = no, 1 = yes), how often employees worked from home (0 = limited amount of time, 1 = most of the time), and how many colleagues participated in the intervention (0 = none, 1 = some, 2 = most). In order to ensure enough within-person variation for each type of WHP, we used a stratified sampling approach: out of the six vignettes, each respondent was shown two vignettes for walking, taking breaks and the online sports class. To prevent vignettes being too similar, leading to possible boredom, inconsistent answers and dropout, we also made sure that for each vignette per type of activity, at least two factors differed from each other. For example, for the two vignettes a respondent was shown for walking, in one, it was stated the activities counted as work time and they worked from home most of their time, whereas in the other the situation was that the activity did not count as work time and they worked from home a limited amount of time. The other factors could then be different or similar depending on the specific vignettes that were assigned. A visual overview is shown in Figure 1. All vignettes were equally likely to occur in the subset provided to employees and were presented randomly: for example, some respondents first rated the vignettes for walking, others were first presented the vignettes for breaks. The vignettes were designed and presented in Dutch as this was the native language of most participants. As some organisations mentioned they also had non-Dutch employees, the participants could also decide to rate the vignettes in English instead.

The vignette experiment followed the survey. We first introduced this part of the study. We explained the participants were shown six hypothetical situations that took place after the Covid-19 pandemic was over. We told them that they would work from home part of their time, and that their employer offered several activities to promote a healthy lifestyle. Furthermore, respondents were told that everyone could participate in these activities and that they did not need specific equipment to do so. Respondents were asked to imagine this to happen to them in their current job. For an example of a vignette, see Figure 2.

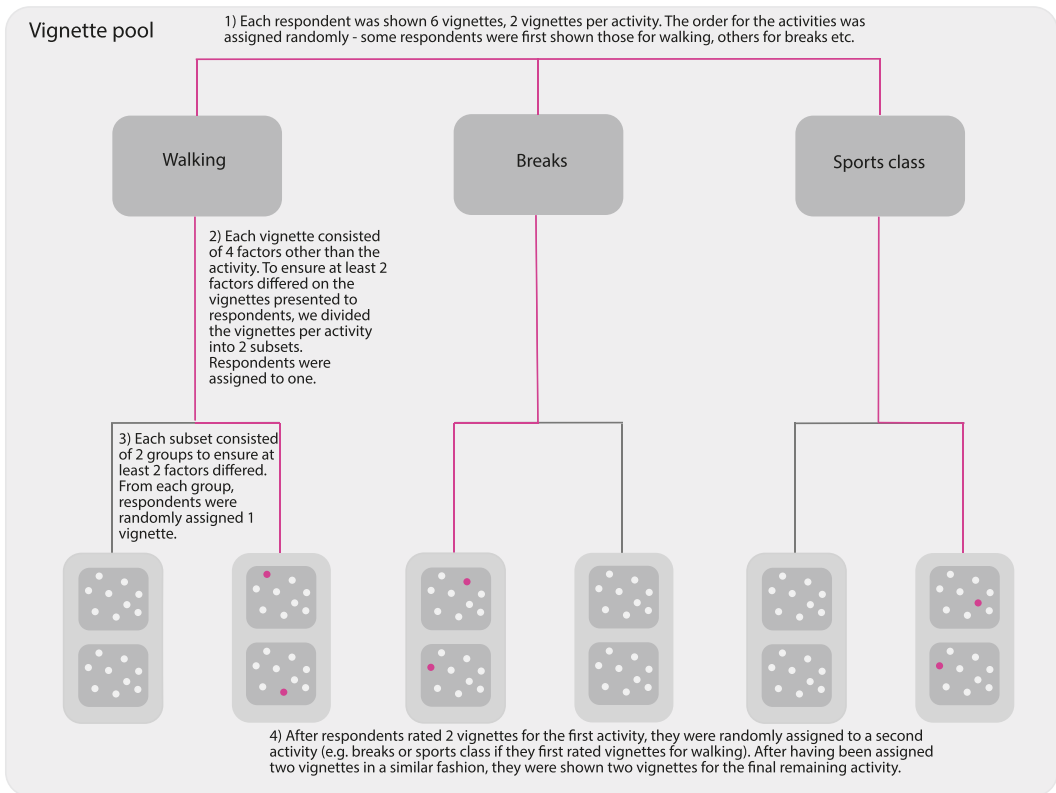


FIGURE 1 Procedure of allocating vignettes to respondents [Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

Imagine that after the corona pandemic you will work from home most of the time.

Your employer stimulates you to, next to your lunch break, take regular short breaks of in total 30 minutes on days you work from home. None of your colleagues takes regular short breaks on days they work from home.

The time you spend on this counts as working time.

Do you intend to take regular short breaks on days you work from home?

Definitely not 1 2 3 4 5 6 7 8 9 Definitely

FIGURE 2 Vignette example

Measurements

The dependent variable, intention to participate in WHP, was measured using an 11-point Likert scale ranging from definitely not (0) to definitely (10).

The independent variables were constructed as categorical variables and relate to the vignette factors as presented in Table 1.

In addition to the manipulated factors in the vignettes, we included several characteristics of the respondents as control variables. These were based on questions coming from the survey. We controlled for gender (female = 1), age and education (highly educated = 1) as men, younger, and highly educated employees have been shown to be more likely to participate in WHP (Rongen

TABLE 1 Factors and levels used in the vignettes

Factor	Level	Text
<i>Type of WHP</i>	0	Walk during work
	1	Take regular short breaks
	2	Online physical activity class with a teacher via a video connection
<i>Duration</i>	0	30 min
	1	45 min
	2	60 min
<i>WHP takes place during work time</i>	0	The time you spend on this does not count as work time
	1	The time you spend on this counts as work time
<i>Time spent working from home</i>	0	You will work from home a limited amount of time
	1	You will work from home most of the time
<i>Colleague participation</i>	0	None of your colleagues does the activity ^a on days they work from home
	1	Some of your colleagues do the activity on days they work from home
	2	Most of your colleagues do the activity on days they work from home

^aInstead of the activity, in the vignette the specific activity was mentioned, so, for example, 'None of your colleagues walk during work hours on days they work from home' when walking was the activity.

et al., 2013; Van der Put et al., 2020). Employees were considered as being highly educated when they had completed higher vocational education or university education, as is common in the Netherlands. We also controlled for occupation based on ISCO codes: manager (ISCO 1), professional (ISCO 2 or 3) and clerical (ISCO 4–9), following, for example, Adams et al., 2017. We did so to account for the fact that we had mainly knowledge workers in our sample, whose jobs allow for working from home. Given that the number of hours employees work may affect how much discretionary time they have, we controlled for work hours per week. We also controlled for whether employees had a good workplace at home (rated on a 5-point Likert scale from (1) fully disagree to (5) fully agree) as this may enable participation. We furthermore included self-rated health as a control variable given there is an ongoing debate on whether healthier employees are more likely to participate in WHP or not (Jørgensen et al., 2016). We also controlled for having a partner and children, which has been shown to relate to health-promoting behaviours (Smith & Christakis, 2008). In addition, we controlled for the time employees spent on household activities (chores and, if they had children, time spent caring for these), as this may reflect whether employees have time to participate in WHP. For each activity, we controlled for the current behaviour of employees, as it could be expected that employees who already walk during work, for example, in their lunch break, will still do so once their employer actively encourages this. For walking, we asked the respondents on how many working days they walk during work hours. For short breaks, we asked the respondents how often they take (short) breaks on a working day excluding their lunch break. Answer options ranged from (1) never to (5) often. For the online sports class, we considered several types of WHP that relate to physical activity. We created a dummy variable, scoring 1 if an employee makes use of sport facilities in the workplace, a financial contribution towards a sport activity, or participates in an online sports class. Finally, we added a control for

the order in which the vignettes were presented to account for possible fatigue after rating several vignettes (Auspurg & Hinz, 2015).

Analyses

To analyse which factors explain employees' intentions to participate in WHP at home, we used multilevel linear regression models. One of the distinguishing characteristics of a vignette experiment is that the vignette is the unit of analysis, not the respondent (Auspurg & Hinz, 2015). Each respondent was asked to rate six vignettes; hence, the vignette is nested within the respondent. The respondents in turn are nested within the organisation they work for. Such nested data should be analysed using multilevel regression models (Hox, 2010). We used three-level random-intercept fixed effects models. We first ran an empty model to calculate the intraclass correlation, to assess how much variation in the intention to participate in WHP can be attributed to the vignette factors, respondent characteristics and the organisation. We then estimated models including the independent variables as well as the control variables. The analyses were carried out in Stata version 16. Results are reported as standardised betas to show which factors explain intentions most.

RESULTS

Table 2 shows that employees score on average 5.92 for intention to participate in WHP when working from home. This is averaged over all vignettes and hence includes all three activities. Table 2 also indicates that the different vignette factors are equally divided over the vignettes—for variables with two levels as indicated in Table 1, the mean is 0.5, and for variables with three levels, the mean is close to 0.33. Additionally, the correlations (not shown) between the vignette variables are weak and insignificant. This indicates that randomisation of the vignettes among employees has been successful and that each vignette has been rated by the same number of employees (Auspurg & Hinz, 2015).

An empty model (not shown) was used to calculate the intraclass correlation. About 74% of the variation in intention to participate was explained by the vignette factors, respondent characteristics explained 25% of the variation, and the organisation level accounted for only 1%. This indicates that the organisation that employees work for had little influence on their intentions to participate in WHP when working from home.

Table 3 presents the multilevel model estimated to test hypotheses regarding employees' intention to participate in WHP when working from home. We expected that employees would be more willing to participate in walking and taking breaks than the online sports class, which was confirmed by our results. Employees were significantly more likely to intend to walk ($\beta = .362, p < .001$) and take breaks ($\beta = .336, p < .001$) than to participate in the online sports class. Secondly, we hypothesised that shorter activities would be more appealing to employees, which was partially supported. Employees were significantly less likely to participate in activities lasting 60 min than activities lasting 30 min ($\beta = -.053, p < .001$). Thirdly, we expected that when an activity takes place during work time, intentions to participate would be higher, which was also supported by our results ($\beta = .144, p < .001$). How much employees work from home was not related to intention to participate. We found a positive effect between intention to participate and working from home most days as expected, but it was not statistically significant ($\beta = .003$,

TABLE 2 Descriptive statistics

	Mean	SD	Range
Intention to participate	5.92	3.39	0–10
Vignette characteristics			
Type of WHP			
Walking	0.33		0–1
Breaks	0.33		0–1
Online sports class	0.33		0–1
Duration			
30 min	0.33		0–1
45 min	0.33		0–1
60 min	0.33		0–1
WHP takes place during work time	0.50		0–1
Working from home most of the time	0.50		0–1
Colleague participation			
No colleagues do the activity	0.33		0–1
Some colleagues do the activity	0.34		0–1
Most colleagues do the activity	0.33		0–1
Control variables			
Vignette order of presentation	3.5	1.71	1–6
Female	0.49		0–1
Age	44.49	11.27	19–68
Highly educated	0.73		0–1
Occupation			
Manager	0.15		
Professional	0.68		
Clerical	0.17		
Work hours per week	35.48	8.43	3–68
Suitable workplace at home	3.85	1.26	1–5
Self-rated health	3.79	0.68	1–5
Partner	0.79		0–1
Children	0.51		0–1
Time household activities per week	15.41	19.01	0–80
Current walking	2.30	1.90	0–7
Current breaks	2.93	1.05	0–5
Current physical activity WHP	0.13		0–1
<i>N</i> vignettes	5070		
<i>N</i> employees	845		
<i>N</i> organisations	31		

TABLE 3 Regression results for intention to participate in WHP

	β	SE
Vignette characteristics		
Type of WHP (online sports class = ref.)		
Walking	.362***	0.088
Online sport class	.336***	0.088
Duration (30 minutes = ref.)		
45 minutes	-.011	0.093
60 minutes	-.053***	0.094
WHP takes place during work time	.144***	0.072
Working from home most of the time	.003	0.072
Colleague participation (no colleagues = ref.)		
Some colleagues	.018	0.093
Most colleagues	.035**	0.093
Control variables		
Vignette order of presentation	-.067***	0.021
Female	-.085***	0.145
Age	-.021	0.006
Highly educated	.025	0.169
Occupation (manager = ref.)		
Professional	.030	0.191
Clerical	.018	0.264
Work hours per week	-.058**	0.009
Suitable workplace at home	.001	0.053
Self-rated health	-.009	0.097
Partner	-.025	0.172
Children	.059*	0.162
Time household activities per week	-.030	0.004
Current walking	.178***	0.037
Current breaks	.081***	0.06
Current physical activity WHP	.064**	0.201
Constant	6.742***	0.688
Variance vignette level	6.555	0.143
Variance employee level	2.406	0.175
Variance organisational level	.032	0.044

* $p < .05$.** $p < .01$.*** $p < .001$.

$p = .746$). Finally, we found that colleague WHP participation mattered as anticipated. When most colleagues did the activity, employees' intention to participate was higher ($\beta = .035$, $p = .006$) compared to when no colleagues participated. The effect sizes showed that the type of WHP has the largest effect size, followed by whether the activity takes place during work time.

The results for the control variables showed that females and those that worked more hours were less likely to intend to participate. Intentions were higher for employees with children. Also employees' current behaviour played a role in their intention to participate in WHP when working from home after the pandemic: if they were already doing these activities, they were more likely to continue to do so.

Sensitivity analyses

We performed several sensitivity analyses to examine if our results were robust. Firstly, we ran our models without the control variables to see if they affect the relation between the vignette characteristics and the extent to which employees intended to participate in WHP when working from home. This appeared not to be the case. Secondly, there may be unmeasured respondent or organisational characteristics that affected intentions for participating in WHP, so we used fixed-effects models accounting for the clustering in organisations. Results were similar to multilevel models, which is not surprising given that little variation was explained by the organisational level. To assess whether employees' responses were affected by the way in which we measured the dependent variable, we also ran our models using the frequency with which employees intended to participate in WHP when working from home. This ranged from 1 (never) to 5 (all days I work from home). Results remained the same. Finally, we considered differences between the three activities. The results (see [Appendix](#)) showed that for taking breaks ($\beta = -.046, p = .042$) also activities lasting 45 min were preferred less than activities lasting 30 min, in addition to activities lasting 60 min. We also found colleague participation to affect intentions to participate in the activities differently. Colleagues did not affect whether employees intended to walk when working from home. For taking breaks ($\beta = .067, p = .003$) and participating in the online sports class ($\beta = .049, p = .006$), both the situation in which some colleagues participate appeared enough to stimulate employees to also participate. This is in contrast to the main analyses, when only when most colleagues participated acted as an inducement.

DISCUSSION

The aim of this study was to examine whether employees intend to participate in WHP when working from home, and which factors affect their intentions. It is expected that working from home will be part of the new working reality for many employees, which has implications for their health (Oakman et al., 2020; Tavares, 2017). Although in the workplace many employers offer WHP to encourage employees to live a healthy life, little is known about how this can take shape in the new context of the home office. Few employers currently offer WHP for employees working from home, so we used a vignette experiment filled out by 845 employees to study whether employees intend to walk during work, take short breaks and participate in an online sports class encouraged by their employer. Furthermore, we studied if the duration of the activity, whether WHP takes place during work time, how often an employee works from home, and colleague participation affected these intentions. Previous literature (Seward et al., 2019; Van der Put et al., 2021) has shown these are important considerations for whether employees make use of WHP in the workplace, and they may also play a role when employees work from home. In doing so, we drew upon the theory of reasoned action (Ajzen & Fishbein, 1980) and argued that WHP characteristics and how often employees work from home shape their atti-

tudes towards WHP when working from home, whereas colleague participation reflects social norms.

We found that intentions to participate in WHP were higher for walking and taking breaks than for the online sports class. This could be because walking and taking breaks are less vigorous or may be activities that employees incorporate in their working day regardless of what their employer does and therefore have a more favourable attitude towards these (Mackenzie et al., 2019; Pollard & Wagnild, 2017). Also in the workplace, employees more often engage in less strenuous activities, such as healthy eating in the worksite cafeteria or doing a health check (Van der Put & Van der Lippe, 2020). Walking and breaks can easily be implemented in a working day (Sianoja et al., 2018). Though small, these activities may have positive health implications for employees, both mentally and physically (Tavares, 2017; Van den Heuvel et al., 2021). They aid employees in keeping focus and working effectively, also benefiting the employer who encourages this behaviour (Ott-Holland et al., 2019; Parks & Steelman, 2008).

We also examined whether different factors impact employees' intention to participate in WHP when working from home. We expected that time would be an important factor for WHP use at home, as it is in the workplace, where employees mentioned that lack of time as a main reason why they do not use WHP (Edmunds et al., 2013; Hunter et al., 2018). We find this is indeed the case: results showed that shorter activities are preferred. Respondents may have had more favourable attitudes towards shorter activities. Many were knowledge workers who still need to finish their tasks and meet their billable hours, and though they are open to WHP when working from home, shorter activities help them to also meet their work goals.

Results also showed that when WHP takes place during work time, intentions to participate are higher. Similar to in the workplace, participating in WHP during work facilitates employees to fit all their different activities in the (working) day (Sargent et al., 2016). Moreover, by allowing employees to participate in WHP during work, organisations also send a strong signal that they are concerned with the health and well-being of employees. This may make employees evaluate these activities more favourably. When employees feel only work matters, they refrain from using WHP, as they want to show they are committed workers (Krick et al., 2019; Van der Put & Van der Lippe, 2020).

Contrary to our expectation, we found that how often employees work from home was not related to intentions to participate in WHP. It does not matter whether employees work from home most of their working days or only a limited number—they are equally likely to intend to participate. As employees likely differ in how much they work from home also after the pandemic, this means potentially all employees could benefit from the advantages WHP has for their health and productivity (Parks & Steelman, 2008; Rongen et al., 2013).

As in the workplace, social norms arising from colleague participation appear an important motivator for employees to use WHP (Seward et al., 2019; Van der Put et al., 2021). Even though meetings between employees that work from home tend to focus on work tasks, meaning it may be more difficult to know what behaviour colleagues demonstrate (Kwon & Seo, 2021), employees still consider what their colleagues do as a reason for them to act likewise. Additionally, participating together can also be a means of social interaction which is often limited when working from home (Seward et al., 2019; Van der Put et al., 2021).

Implications

Our findings have several practical implications for how employers could increase WHP use for employees working from home. Whether WHP takes place during work time was one of the strongest predictors for intentions, so it is of paramount importance that organisations that implement WHP for employees working from home stress this support. Although there may be less room for recovery, employees could be pointed out that they can have telephone meetings with their colleagues while walking, which also benefits their physical health. Additionally, colleague participation was shown to matter. When offering WHP for employees working from home, organisations can highlight that WHP can also be a channel for social interaction. For example, colleagues that live nearby can walk together or use a video tool to catch up during a break.

Our study also has theoretical implications. We drew upon the theory of reasoned action (Ajzen & Fishbein, 1980). Even though we did not test attitudes which are one of the explanatory mechanisms in the theory directly, we argued that WHP characteristics may shape employees' attitudes towards WHP when working from home, and have shown that these characteristics indeed matter. Furthermore, we also showed that social norms, the other explanatory mechanism, relate to intentions to participate in WHP when working from home. We focussed on norms arising from colleagues as these are the most relevant reference group for healthy behaviours at work (Van der Put et al., 2021). There thus seems merit in using the theory of reasoned action to explain WHP use when working from home. Further theoretical work can focus on demonstrating how attitudes towards WHP when working from home form and whether intentions indeed translate into actual use.

Strengths, limitations and directions for future research

The current study is to our knowledge among the first to examine whether employees intend to participate in WHP when working from home, and which assess the factors that affect these intentions. Other strengths include the large sample size, especially for a vignette experiment (Auspurg & Hinz, 2015) and the focus on three types of WHP. There are, however, also some limitations that should be noted.

Firstly, the nature of the vignette experiment requires the included factors to be pre-defined (Auspurg & Hinz, 2015). We based our decisions on which factors to include on the literature on WHP use in the workplace, but when working from home employees may have different considerations. However, as there is no research yet on WHP use at home, we believe this is a good starting point and leave it to future research to explore other factors that may play a role, for example, how supportive the home environment is or an employee's workload. Furthermore, we focussed mainly on physical activity related health behaviours as these seem easiest to implement when working from home, yet also other activities could be offered such as online meditation classes to help employees detach from work or workshops on how to prepare a healthy lunch. It would be interesting if future research also explores employees' intentions to use these.

Secondly, an often-heard limitation of vignette experiments is reduced external validity because of their hypothetical nature (Hainmueller et al., 2015). We tried to make the hypothetical situation as realistic as possible and sampled employees who experienced working from home during the Covid-19 pandemic. It may be easier for these to identify with the situation and thereby provide realistic answers. Although we measured intended behaviour rather than actual behav-

our, which could lead to social desirability bias, this bias is often smaller in vignette experiments than in surveys, because the relevant factors are hidden in the vignettes (Auspurg & Hinz, 2015). People's responses to vignettes have been found to match their actual behaviour well (Hainmueller et al., 2015), and intentions to participate in WHP relate to really doing this (Röttger et al., 2017). As a result of using a vignette experiment, we also made use of categorical variables that may bias findings for some factors (e.g. duration). This is one of the key aspects of vignette experiments: using continuous variables would be too complex (Auspurg & Hinz, 2015). However, it would be good that when WHP is more widespread for employees working from home, research would inquire in employees' actual use of these activities and use different indicators.

Lastly, the sample of organisations that participated in our study was not based on random sampling strategies. However, for vignette experiments, this may not be problematic if the mechanisms are universal (Auspurg & Hinz, 2015). We have no reason to believe this not to be the case, but added the organisation as an additional level to our models to account for possible variation. Additionally, sampling within organisations was random. This also ensured that we mainly had highly educated knowledge workers in our sample, which might create biased results. This will, however, be the group of employees that is also expected to remain working from home post-pandemic, to whom WHP will mainly be targeted.

CONCLUSION

Employees intend to participate in WHP when they work from home, which is expected to become more prevalent in the future. Walking and taking breaks appeared most popular, as were shorter activities. In encouraging employees to use WHP when working from home, organisations should ensure that employees know they can do so during work time and that colleagues also participate. In these ways, employers can help promoting the health and well-being of their employees even when these are not present in the workplace.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

ETHICS STATEMENT

The authors declare that this study is in line with ethical requirements and was approved by the Advisory Committee on Ethical Issues of Utrecht University Faculty of Social and Behavioural Sciences. All participants signed informed consent before participation.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the authors upon request via DataCite at <https://doi.org/10.24416/UU01-CIKJ8W>.

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APPENDIX

Regression results for intention to participate in WHP when working from home, by type of WHP.

	Walking		Breaks		Online sport class	
	β	SE	β	SE	β	SE
Vignette characteristics						
Duration (30 min = ref.)						
45 minutes	-.024	0.138	-.046*	0.143	-.026	0.126
60 minutes	-.115***	0.137	-.097***	0.143	-.038*	0.129
WHP counts as work time	.178***	0.092	.166***	0.095	.122***	0.079
Working from home most of the time	.005	0.092	.020	0.095	-.013	0.079
Colleague behaviour (no colleagues = ref.)						
Some colleagues	.029	0.139	.067**	0.142	.049**	0.128
Most colleagues	.004	0.140	.065**	0.143	.079***	0.127
Vignette order of presentation	-.074**	0.044	-.063*	0.044	-.073**	0.050
Employee characteristics						
Female	-.047	0.184	-.040	0.180	-.190***	0.235
Age	-.011	0.008	-.021	0.008	-.038	0.010
Highly educated	.013	0.215	.033	0.211	.039	0.273
Occupation (managers = ref.)						
Professionals	-.011	0.244	.065	0.238	.062	0.309
Clerical	.004	0.336	.040	0.329	.029	0.424
Work hours per week	-.061*	0.011	-.019	0.011	-.078*	0.014
Suitable workplace at home	.041	0.067	.008	0.066	-.037	0.085
Self-rated health	-.015	0.123	.031	0.120	-.026	0.156
Partner	-.051	0.217	-.000	0.213	-.021	0.277
Children	.109**	0.203	.048	0.199	.033	0.260

Time household activities per week	−.014	0.005	−.073*	0.005	−.016	0.007
Current walking	.424***	0.045				
Current breaks			.320***	0.079		
Current physical activity WHP					.120***	0.326
Constant	6.322***	0.859	3.407***	0.869	6.771***	1.085
Variance vignette level	3.537	0.172	3.819	0.186	2.633	0.128
Variance employee level	3.813	0.290	3.448	0.281	7.833	0.461
Variance organisational level	.114	0.086	.106	0.075	.104	0.139

* $p < .05$,

** $p < .01$,

*** $p < .001$