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5   Exploring feelings of pleasure and purpose associated with

6   older people's activities using ecological momentary analysis:

7   an observational study

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1   Abstract

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3   Momentary feelings of pleasure and purpose can be sources of intrinsic

4   motivation, but momentary purpose is rarely studied. Activities, contexts and

5   feelings of retired/semi-retired adults (n=67, aged 50-78y) were captured using

6   ecological momentary assessment. Participants provided 2,065 valid responses to

7   six daily smartphone surveys for seven days. Physical activity was measured by

8   waist-worn Actigraph accelerometer. Pleasure (measured by affective happiness)

9   and purpose outcomes were regressed on activities, context and potential

10   confounding variables. Interactions between activities and contexts were

11   explored. Participants were highly active: 98.5% met physical activity guidelines.

12   Sedentary activities were negatively associated with sense of purpose, especially

13   when indoors. However, social sedentary activities were positively associated with

14   feelings of happiness. Active, social outdoor activities were positively associated

15   with both outcomes. Less sedentary participants experienced greater happiness

16   and purpose during all their activities. Context matters: active, social and outdoor

17   activities seem to be more appealing to older adults.

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19   (149 words)

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21   Key words: active and sedentary activities; physically active retired/semi-retired

22   adults; social context; outdoor activities; smartphones.

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5   Introduction

6   *Background and rationale*

7   The benefits of physical activity for slowing the ageing process, maintaining

8   independence and improving quality and length of life are well-known (Bangsbo

9   et al., 2019), yet worldwide physical inactivity has been likened to a "global

10   pandemic" (Sallis et al., 2016), with physical activity decreasing with age in most

11   European countries (Marques, Sarmento, Martins, & Saboga Nunes, 2015;

12   Eurostat, 2019). In England, more than 25% of adults 55-64y report fewer than 30

13   minutes per week at health-improving moderate-vigorous intensity. The

14   percentage inactive rises to almost 70% for those aged 85+ (Sport England, 2019).

15   More effective interventions would support England's public health priority to

16   increase older people's physical activity and reduce sedentary behaviour (Public

17   Health England, 2014). Interventions grounded in behaviour change theory have

18   been shown to be more effective than those that are not (Prestwich et al., 2014),

19   and thus research facilitating the effective application of theory to practice is

20   likely to be useful. Self-determination theory (Deci & Ryan, 2000) is particularly

21   relevant to maintaining behaviour change and underpins many health-related

22   behaviour change interventions (Patrick & Williams, 2012). Sense of purpose and

23   pleasure are sources of intrinsic motivation identified in self-determination theory

24   (Deci & Ryan, 2000; Ryan & Deci, 2001); Ryan, Huta, & Deci, 2008). Moreover, it

1 has been argued that people try to balance feelings of purpose and pleasure from

2 moment to moment in everyday life (Dolan, 2014) which suggests studying

3 momentary (experiential) feelings relating to older people's activities could help

4 to identify physically active and less sedentary activities that are more intrinsically

5 motivating because they appeal to feelings of pleasure and purpose. It has also

6 been shown that social and environmental contexts for activities influence older

7 people's feelings (Finlay, Franke, McKay, & Sims-Gould, 2015) and likelihood of

8 engaging in physical activities (Boulton, Horne, & Todd, 2018). There are some

9 evidence gaps in previous research on older people's feelings about their

10 activities.

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12 Previous studies of older people's activities and their relationship to experiential

13 feelings use retrospective evaluations (Oerlemans, Bakker, & Veenhoven, 2011;

14 Kavčič & Avsec, 2018; Stone, Schneider, Krueger, Schwartz, & Deaton, 2018). A

15 recent study of older adults sampled using the American Time-Use Survey (ATUS)

16 found active leisure (e.g. sports, exercise and recreation) was associated with

17 greater 'happiness' and 'meaningfulness' when compared with passive

18 (sedentary) leisure (e.g. screen time) (Yamashita, Bardo, & Liu, 2018). However,

19 this study did not consider activities' social and environmental contexts, which are

20 important among older people (Finlay *et al.*, 2015; Boulton, Horne, & Todd, 2018

21) . Furthermore, activities were classified as active or passive retrospectively by

22 the researchers, which risked misclassifications. Moreover, memories of feelings

23 experienced yesterday – as collected by the ATUS - are less reliable than

1   immediate recall, particularly for older adults (Galenkamp et al., 2016), who may

2   be experiencing decline in short-term memory (Verhaeghen, 2013).

3

4   A more accurate method of capturing behaviour, feelings and contexts

5   simultaneously is via prompted, frequent, real-time self-reports known as

6   ecological momentary assessments (EMA) (Shiffman, Stone, & Hufford, 2008). A

7   study using smartphone-delivered EMA over 30 days in a small sample (n=10) of

8   older adults (65-83y), found that social, outdoor leisure activities were associated

9   with higher experiential pleasure than non-leisure activities performed alone or

10   indoors (Cabrita, Lousberg, Tabak, Hermens, & Vollenbroek-Hutten, 2017).

11   Experiential feelings of purpose were not considered in that study. The objective

12   of this study, therefore, was to investigate how the type (sedentary, active), social

13   (alone or with others) and environmental (indoors or outdoors) contexts of

14   activities relate to momentary feelings of pleasure and purpose assessed using

15   EMA methods in a sample of retired or semi-retired, community-living older

16   adults, who have more leisure time at their disposal than those still fully

17   employed.

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19   Methods

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21   *Study design, participants and setting*

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23   A cross-sectional observational design was adopted. A convenience sample of

24   participants was recruited via responses to messages posted on social media

1   groups (e.g. Facebook sports club groups), forums (e.g. London School of

2   Economics Alumni) and personal contacts of the corresponding author. The study

3   received ethical approval from the corresponding author's University Ethics

4   (Human Participants) sub-committee on 24 Jan 2019. Participants were eligible if

5   ≥ 50 years, fully or semi-retired, owned a smart-phone, and able to attend an

6   enrolment meeting either in Loughborough, East Midlands, or in London (UK).

7   Seventy-three adults met the inclusion criteria and consented to take part.

8   Recruitment spanned February to December 2019. During their enrolment

9   meeting, eligible participants provided informed consent, were familiarised with

10   study procedures and equipment, assigned an initialised Actigraph activity

11   monitor, shown how to download and login to the EMA app and asked to

12   complete a baseline survey capturing their demographic characteristics.

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15   Measurements and procedures

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17   *Ecological Momentary Assessment*

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19   Details of activities, contexts and feelings were captured using EMA (Shiffman et

20   al., 2008). Several studies have demonstrated the feasibility, acceptability,

21   reliability and validity of smartphone-based EMA to measure behaviours and

22   feelings in a variety of older populations (Maher, Rebar, & Dunton, 2018; Paolillo

23   et al., 2018; Liu & Lou, 2018). Ethica software (www.ethicadata.com) was

24   selected because it had both Android and IOS versions, making it compatible with

1   most mobile phones. The EMA protocol was piloted in a convenient selection of

2   six smartphone users aged 50+. Changes to the protocols were made following

3   their feedback on the comprehensibility of the wording and routing of the

4   activities questions.

5

6   At the initial meeting participants completed a survey through the Ethica app

7   which asked about age, gender, ethnicity, religion, self-assessed health, highest

8   educational level achieved, whether living alone, whether working part-time or

9   not, number of adults in household, and overall life satisfaction and

10   worthwhileness of life, all of which have been previously identified as

11   confounding factors in analyses of subjective wellbeing (Dolan, Kudrna, & Stone,

12   2017) or associated with choice of leisure-time activities (Galenkamp et al., 2016).

13   Life satisfaction and worthwhileness of life were assessed using the wording and

14   0-10 scale recommended when measuring personal wellbeing by the Office for

15   National Statistics (Nickson, 2020). Principal sources for other question wordings

16   included the Office for National Statistics harmonised wordings for the 2011

17   Census (Office For National Statistics, n.d.) and the Department for Digital,

18   Culture, Media and Sport's 'Taking Part' survey questions (DCMS, 2015).

19

20   Over the seven days of monitoring, participants received six prompts per day at

21   random within 150-minute windows between 06:30 and 21:30 to complete six

22   questions about their main activity in the last hour and their feelings of happiness

23   -as an affective measure of pleasure (Dolan, Kudrna, & Testoni, 2017) - and sense

24   of purpose during that activity. They were instructed to answer prompts

1   immediately but only when safe and convenient. Participants were asked: *What*

2   *was your main activity in the last hour?* (21 activities, grouped into six higher-

3   level categories (physical, mental, social, recreational, travel and resting), similar

4   to those used in previous studies of older people's activities (Chang, Wray, & Lin,

5   2014; Galenkamp *et al.*, 2016; Yamashita et al., 2018)). They were then asked to

6   rate their happiness and sense of purpose on a visual analogue scale by moving a

7   slider from the default setting of 5 to a number between 0 (*not at all*) and 10

8   (*totally/wholly*) (Office for National Statistics, 2015; Cabrita et.al., 2017).

9   Participants were then asked: *What was your posture while carrying out this*

10   *activity? (Standing/Sitting/Lying Down/Moving about). Were you indoors or*

11   *outdoors while doing it*? (*Indoors at home/ Indoors another venue/In a vehicle/*

12   *Outdoors/Mix of the above). Who were you doing it with? (Alone/With a pet/With*

13   *people I don't know/With people I met through this activity/With*

14   *friends/family/With a service provider (e.g. doctor; shop assistant)).*

15

16   *Accelerometry*

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18   Participants were asked to wear an Actigraph accelerometer, either GT3x or

19   wGT3X- BT (Actigraph Corp., 2012) over the right hip using an elasticated waist

20   band during waking hours for seven consecutive days. These devices have been

21   identified as having acceptable validity and reliability in older adults (Copeland &

22   Esliger, 2009). All monitors underwent reliability testing on an orbital shaker and

23   only monitors within an acceptable limit were used for data collection. Data were

24   collected at a sampling rate of 100 Hz and downloaded in epochs of 60 seconds

1 for analysis using Actilife software. Raw Actigraph data files were processed to

2 derive outcome variables, using custom data reduction software (KineSoft,

3 V.3.3.67, Loughborough, UK). Non-wear time was defined as ≥60 minutes of

4 consecutive zero counts, allowing for two minutes of non-zero interruptions (Tay,

5 Chan, & Diener, 2014). Participants' accelerometer data was considered valid if

6 they had at least five days with more than 10 hours of valid accelerometer wear

7 (Pruitt et al., 2008). Vertical axis intensity cut-points derived for use in older

8 participants were adopted (Copeland & Esliger, 2009).

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12 *Statistical methods*

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14 The unit of analysis was a single response to an EMA prompt. Happiness and

15 purpose outcome measures were regressed on activities undertaken, controlling

16 for confounding influences from the social and environmental context (e.g. where

17 they took place), accelerometer assessed physical activity/time spent sedentary,

18 and participant characteristics. Given the use of multiple regression methods, a

19 key consideration governing sample size was degrees of freedom. Using a two-

20 tailed test and 95% confidence level, assuming 20 independent variables, a

21 sample size of 1,302 responses from 31 participants (assuming 100% compliance

22 with the prompts) or 44 participants (assuming 70% compliance) was sufficient to

23 detect a very small effect size of 0.01 (Faul, F., Erdfelder, E., Lang, A.-G. &

24 Buchner, 2007). To account for the hierarchically structured nature of the data,

1   the standard errors of the regressions were clustered on individuals. Given the

2   number of independent variables that could potentially be included in the

3   regressions, multicollinearity was likely. To preserve degrees of freedom, a

4   pragmatic approach was adopted. Accordingly, backwards elimination was used

5   to derive parsimonious estimates, and further independent variables were

6   removed where variance inflation factors exceeded 10, which eliminated most of

7   the confounding variables except for accelerometer assessed sedentary time.

8   Multivariate linear regression models were estimated for both outcome variables.

9   In addition, given the literature showing that being with others and/or outdoors

10   improved happiness among older people (Cabrita *et al.*, 2017; Lam & Garcia,

11   2019; (Sharifian & Grühn, 2019), the interaction between each of the activities

12   and dichotomous variables for whether activities were active/sedentary;

13   social/solo; and outdoors/indoors - as reported by participants - were also

14   explored. All analyses were conducted using Stata version 14.2 (StataCorp, 2018)

15   and statistical significance was set at $p < 0.05$.

16

17   Results

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19   Data from six participants were removed as they did not meet the criteria for valid

20   accelerometer data, leaving data on 67 (92%) participants for analysis. The

21   maximum number of responses per participant was 42 (i.e. six per day). Owing to

22   missing data, 560 EMA responses were removed, leaving 2,065 from 67

23   participants – an average of 4.4 per participant per day: a response rate of 73.3%.

24   Sample characteristics are presented in Table 1. Participants ranged from 50-78

1   years of age, were predominantly white British, had at least degree-level

2   education, mainly resident in London, in good or better self-assessed health, and

3   all except one met the current physical activity guidelines (at least 150 mins of

4   moderate-vigorous physical activity weekly (Public Health England, 2014)). Mean

5   values for feelings of momentary happiness and sense of purpose were in line

6   with those found for measures of wellbeing in other surveys using the same scale,

7   e.g. Office for National Statistics, (2020).

8

9   [Table 1 here]

10

11   Table 2 shows the categorisations and frequencies of participation in different

12   activities. The most frequent type of activity was physical, with moderate intensity

13   sport/exercise being the most common (22%). Mental activities were the next

14   most frequent type, with screen time being the most common (9.5%). For the

15   regression analyses, the 22 individual activities were reduced to 13 by combining

16   similar activities (e.g. moderate and vigorous sport/exercise both count towards

17   meeting the current physical activity guidelines) and merging low-frequency

18   activities into larger categories. Light sport/exercise was retained as a separate

19   category because it does not count towards the recommended 150 minutes a

20   week of physical activity.

21

22   [Table 2 here]

23

1   Sport or exercise at moderate-vigorous intensity was not significantly associated

2   with either happiness or sense of purpose when compared with mentally passive

3   activities, such as screen time (table 3). Sport or exercise at light intensity had a

4   positive association with sense of purpose but volunteering or caring for someone

5   had the largest association with sense of purpose of any of the 13 activities.

6   Activities that had the strongest association with momentary happiness were

7   social (e.g. visiting or entertaining friends or family, and going out to a pub, club or

8   restaurant), or recreational (e.g. attending a theatre or other cultural attraction).

9

10

11   [Table 3 here]

12

13   The regression including interaction terms between each of the activities and

14   dichotomous variables for whether activities were active/sedentary; social/solo;

15   and outdoors/indoors (table 4) shows that for many activities, context is

16   important: social activities for example were positively associated with both

17   outcomes compared to solo activities – with the exception of volunteering. In

18   general, sedentary activities were negatively associated with both outcomes,

19   unless they were social sedentary activities (e.g. visiting friends and family). Of

20   the active recreational activities, those that were social and outdoors had the

21   largest positive association with both outcomes. Less sedentary participants were

22   more likely to experience greater levels of happiness and sense of purpose during

23   any recreational activity.

24   [Table 4 here]

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3   Discussion

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5   The objective of this study was to investigate how the type (sedentary, active)

6   and context (social and environmental) of older people's activities relate to

7   momentary feelings of pleasure or purpose to inform the design of interventions

8   and policies. The finding that social light sport/exercise was positively related to

9   happiness, but that moderate-vigorous sport/exercise was not associated with

10   either outcome, points to the potential challenges of promoting higher intensity

11   activities in this age group (Downward & Dawson, 2016). For both outcomes,

12   outdoor activities were associated with higher levels of happiness and sense of

13   purpose. The association between outdoor activities and happiness has been

14   noted previously (Finlay *et al.*, 2015; Cabrita *et al.*, 2017). However, the finding

15   that outdoor activities were associated with greater momentary sense of purpose

16   is new. This study also demonstrates that, although closely related, older people

17   distinguish between the concepts of happiness and sense of purpose. The small

18   overlap in the pattern of significant coefficients between the two outcomes

19   illustrated this. Visiting friends and family, and going to a pub, club or restaurant

20   were strongly associated with feelings of happiness but not purpose for example.

21   Differences such as these suggest there is additional insight provided by

22   investigating momentary sense of purpose (Dolan, 2014). The current analyses

23   also show that less sedentary older adults on average experienced greater

24   feelings of happiness compared with their more sedentary counterparts, which is

1   in line with previous research (Lathia, Sandstrom, Mascolo, & Rentfrow, 2017).

2   However, a new finding is that less sedentary older adults also experienced even

3   greater feelings of purpose during their activities. Overall the results suggest that

4   policies and practices that encourage older adults to be less sedentary and spend

5   more time in outdoor and social activities are likely to increase happiness and

6   sense of purpose and could be leveraged to increase physical activity. For

7   example, volunteering, even if solo, will enhance happiness and sense of purpose

8   and if active, will also contribute to increased physical activity levels.

9

10   The study has two main limitations: first, the sample was not representative. For

11   example, participants were more physically active (Sport England, 2019) and more

12   highly-educated than UK adults of this age-group (OECD, 2020), likely due to the

13   recruitment strategies and the need to exclude older people without

14   smartphones. Future research should replicate the study in a more representative

15   sample of older adults in terms of physical activity levels, socio-economic status,

16   ethnicity and education levels. Second, the study was not designed to establish

17   causal relationships; however momentary feelings were reported immediately

18   after the activity had taken place, so causality is unlikely to be reversed.

19

20   In conclusion, this research suggests that the context of leisure-time activities is

21   important for older adults' feelings of both happiness and purpose, with social

22   and outdoor activities being more likely to have the widest appeal. This should be

23   considered when designing physical activity-increasing interventions and policy.

24   Furthermore, there is value in future research measuring momentary sense of

1   purpose in addition to happiness in a larger and more representative sample of

2   older people.

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17

18   **Tables**

19   **Table 1** Participant characteristics

Characteristic	Frequency/Mean*	% (sd*)
Age (y)	64.1*	5.92*

Gender	Male	29	43.3
	Female	38	56.7
Ethnicity	White British	63	94.1
	Other	4	5.9
Relationship status	Living in a couple	44	65.7
	Living alone	23	34.3
Highest educational level	Degree or above	48	71.0
	No degree	19	29.0
Location	London zones 1-6	52	77.6
	Not London	17	22.4
Self-assessed health	'Very good' or 'Good'	65	97.0
	'Fair' or 'Poor'	2	3.0
Met MVPA guidelines [1]		66	98.6
% of wear time spent in MVPA		9.9*	5.7*
% of wear time spent sedentary		62.5*	7.9*
Happiness score		7.2	1.65*
Sense of purpose score		7.3	1.73*
N		67	

[1] MVPA = moderate-to-vigorous physical activity. Guideline amount $\geq$ 150 mins MVPA per week

sd = standard deviation

1

2   **Table 2** Categories and frequencies of activities

3

	Frequency	(%)		Frequency	(%)	Final analytical categories (13)	Frequency	(%)

Physical activities	744	36.0	Light sport or exercise	118	5.7	Light sport or exercise	118	5.7
			Moderate sport or exercise	363	17.6	Moderate or vigorous sport or exercise	458	22.2
			Vigorous sport or exercise	95	4.6			
			Domestic tasks	71	3.4	Domestic tasks or errands	123	5.9
			Shopping, errands or queuing	52	2.5			
			DIY/gardening	45	2.2	DIY/gardening	45	2.2
Mental activities	432	20.9	Screen time	196	9.5	Mentally passive activities	271	13.1
			Reading/listening for pleasure[4]	75	3.6			
			Studying/learning a new skill	24	1.2	Mentally active activities	161	7.8
			Games or puzzles	16	0.8			
			Planning/organising or admin tasks	115	5.5			
			Praying or meditating	6	0.3			
Social activities	299	14.5	Visiting/entertaining friends or family	135	6.5	Visiting/entertaining friends or family	135	6.5
			Going to pub, club, café or restaurant	95	4.6	Going to pub, club, café or restaurant	95	4.6
			Volunteering	24	1.2	Volunteering or caring for someone	69	3.4
			Caring for or helping someone	45	2.2			
Recreational activities	109	5.3	Attending concert, film, theatre or sporting event	40	2.0	Attending cultural or sporting event or visiting a cultural attraction	53	2.6
			Visiting museum, gallery or other cultural attraction	13	0.6			

			Creative hobby (e.g. woodwork, baking, making music etc)	56	2.7	Creative hobby	56	2.7
Travel	171	8.3	Travel	171	8.3	Travel	171	8.3
Resting (s)	310	15.0	Resting	310	15.0	Resting	310	15.0
n	2,065	100.0		2,065	100.0		2,065	100.0

[4] Reading and listening have been inconsistently classified in previous studies (Yamashita et al., 2018). They were classified as mentally passive activities here on the grounds that they do not necessarily require much mental effort, in contrast to for example planning and organising, which does.

1   **Table 3** Predictors of older adults' momentary happiness and purpose

2

Predictors	Happiness		Sense of Purpose	
	Beta	95% CI	Beta	95% CI
Participant characteristics				
Percentage of wear time sedentary	-2.802*	-5.33 to -0.266	-3.2568	-5.896 to -0.596
Activities (Base = Mentally Passive Activities)				
Light sport/ex	0.257	-0.233 to 0.804	0.662**	0.169 to 1.156
Mod-vigorous sport/ex	-0.409	-0.854 to 0.028	0.398	-0.624 to 0.858
Domestic tasks	0.003	-0.403 to 0.540	0.681**	0.212 to 1.150
DIY/Gardening	0.404	-0.172 to 1.110	0.972***	0.426 TO 1.518
Visiting/entertaining friends or family	0.741**	0.233 to 1.200	0.707*	0.136 to 1.278
Going to pub, club, café or restaurant	0.658**	0.171 to 1.129	0.398	-0.145 to 0.940
Volunteering/caring for someone	0.498	-0.158 to 1.1.41	1.376***	0.760 to 1.991
Mentally active	-0.339	-0.789 to 0.124	0.660**	0.178 to 1.1.43
Concert, film, theatre, museum etc	0.995**	0.302 to 1.671	0.807*	0.814 to 1.532
Creative hobby	0.888**	0.340 to 1.437	1.151 ***	0.602 to 1.700
Resting	-0.446	-0.936 to 0.019	-0.922***	-1.452 to -0.392
Travelling	-0.852**	-1.338 to -0.270	-0.134	-0.716 to 0.447
Context variables				
Social	0.452**	0.198 to 0.705		
Weekend	0.253**	0.033 to 0.449		
Outdoors	0.798***	0.428 to 0.945	0.456*	0.197 to 0.716
Observations	2,065		2,065	
Adjusted R-squared	0.196		0.179	
Model degrees of freedom	17		14	

*p <0.05, **p < 0.01, ***p<0.001*

Constant suppressed for space reasons

3

4

1 **Table 4** Active/sedentary activities interacted with social and environmental

2 context predicting older adults' momentary happiness and sense of purpose[4]

3

4

Predictors	Happiness		Purpose	
	Beta	95% CI	Beta	95% CI
Participant characteristics				
Percentage of wear time sedentary	-2.779	-5.300 to -0.258	-3.342	-5.898 to -0.787
Activities interacted with active/sedentary, social and environmental context: base = mentally passive activities, active, solo, outdoors				
Light sport or exercise				
Active, social, outdoors	1.025	0.122 to 1.923		
Sedentary, social, indoors	1.732	0.116 to 3.349		
Sedentary, social, outdoors	-1.022	-1.896 to – 0.148		
Moderate-vigorous sport or exercise				
Sedentary, solo, indoors	-1.411	-2.773 to -.0490		
Domestic tasks/errands				
Active, social, outdoors	1.409	0.389 to 2.4289	1.542	0.344 to 2.742
Sedentary, solo, indoors			-1.698	-2.843 to -0.554
DIY/gardening				
Active, social, indoors	1.061	0.175 to 1.947	1.232	0.118 to 2.347
Active, social, outdoors	1.268	0.026 to 2.509		
Sedentary, social, outdoors	1.748	0.995 to 2.501		
Visiting/entertaining friends/family				
Active, social, indoors	1.138	0.319 to 1.957		
Active, social, outdoors	1.501	0.062 to 2.940		
Sedentary, social, indoors	0.787	0.050 to 1.524		
Going to pub, club or restaurant				
Sedentary, social, outdoors	1.407	0.613 to 2.202		
Volunteering, caring for or helping someone				

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[4] *Only statistically significant results reported, p>0.05.*

Active, solo, indoors	2.164	1.458 to 2.870		
Sedentary, solo, indoors			2.730	0.280 to 2.647
Active, social, outdoors	1.710	0.584 to 2.837	1.464	1.447 to 4.012
Mentally active activities				
Active, solo, outdoors			1.464	0.388 to 2.540
Concert, film or theatre, museum or gallery				
Active, social, indoors	1.829	0.855 to 2.803	1.888	0.628 to 3.148
Sedentary, social, indoors	1.321	0.488 to 2.155		
Sedentary, social, outdoors	1.534	0.718 to 2.350		
Creative hobby				
Active, social, indoors	0.998	0.086 to 1.911	1.241	0.105 to 0.377
Active, social, outdoors	1.491	0.423 to 2.560	1.212	0.010 to 2.415
Sedentary, social, indoors	1.320	0.477 to 2.163	1.197	0.078 to 2.316
Resting				
Sedentary, solo, indoors	-0.927	-1.755 to -0.100	-1.555	-2.667 to -0.443
Sedentary, solo, outdoors	-1.096	-1.809 to -0.384	-1.116	-2.135 to -0.097
Travelling				
Active, solo, indoors	-1.047	-2.045 to -0.049		
Sedentary, solo, indoors	-1.561	-2.655 to -0.469		
Sedentary, solo, outdoors			1.243	0.168 to 2.318
Weekend/weekday				
Weekend	0.269	0.070 to 0.467		
Observations	2,065		2.065	
Adjusted R-squared	0.2335		0.2417	
Model degrees of freedom	65		65	

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