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The influence of COVID-19 measures in the United Kingdom on physical activity levels, perceived physical function and mood in older adults: a survey-based observational study

Figures: 2
Tables: 4

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Conflict of interest
We declare no conflict of interests

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ABSTRACT

In early 2020, the spreading Coronavirus (COVID-19) prompted the government in the United Kingdom to introduce self-isolation and social distancing measures to reduce its transmission. By doing so, opportunities for physical activity were likely reduced, potentially causing detrimental effects to older adults. Therefore, the present study investigated the influence of the initial six weeks of lockdown on physical activity levels, perceived physical function and mood in older adults. A cross-sectional, mixed-methods, observational study was conducted using self-administered, fortnightly online surveys throughout the UK between 21st March–4th May 2020. A total of 117 participants (52 males [age: 76±4 years] and 65 females [age: 76±4 years]) completed all surveys. Highly active older adults (*n*=58) maintained their activity levels, while those with low (*n*=7)/ moderate activity (*n*=52) levels increased their physical activity during lockdown (ps=99.85%). Subsequently, perception of physical function was maintained across lockdown. Although, the aspect of mood; depression increased for both sexes during lockdown (ps=95.90%;>0.3 AU), there was a weak relationship between mood subscales and physical activity. Despite the maintenance/ increase in PA of our sample, depression continued to increase over the course of lockdown.

Keywords: COVID-19, Older adults, Physical Activity

Word count: 4,196

INTRODUCTION

In December 2019, a pneumonia of unknown cause emerged in Wuhan, China and quickly spread to other countries across the world, prompting the World Health Organisation (WHO) to declare a 'public health emergency of international concern' on January 30th 2020[1]. The WHO later announced the cause of this pneumonia, to be a novel Coronavirus named COVID-19. By March 11th, cases all over the world as well as the United Kingdom (UK) were surging (confirmed UK cases: 373; deaths: 6)[1], prompting the WHO to declare the outbreak of COVID-19 a global pandemic. The virus continued to spread rapidly throughout the UK, and on March 20th (confirmed UK cases: 3,277; deaths: 144)[1], the government announced the closure of all pubs, restaurants, gyms and all other social venues. Additionally, the public were urged to stay home where possible, self-isolate if suffering symptoms of COVID-19 and to observe social distancing in public[2]. Any persons aged 70 and over were classified as at 'increased risk of severe illness' and urged to be 'particularly stringent' when following government guidance[2]. These unprecedented measures left many older adults in isolation, with the extent of its effects being unclear[3].

Physical activity, sedentary behaviour and functional performance in older adults

Chronological ageing is characterised by the progressive loss of muscle mass, muscle strength, and a subsequent decline in functional performance[4], all of which are accelerated by physical inactivity[5]. However, regular physical activity (PA) has shown promise in preventing and reversing many effects of disease, prevalent with ageing[6], whilst improving functional performance[7]. It has been highlighted that the COVID-19 outbreak may drastically lower opportunities for structured PA for older adults[8], which may mean an increase in sedentary behaviour which has been associated with negative changes in both physical and mental health[9]. Indeed, just 14 days of fewer steps (75% reduction to 2,994±417 steps day^{-1}) has been shown to reduce knee extensor muscle strength by 8% in older adults, a substantial decrease that was not

recovered following two weeks of returning to normal activity levels[10]. Maintenance of muscle strength is essential for many instrumental activities of daily living (IADL)[11] e.g. carrying shopping bags with the maintenance of physical function being linked to continued functional independence and better quality of life[12]. Furthermore, a dose-response trend has been noted between number of daily steps and better functional ability[13]. These points highlight the key detrimental effects of even modest periods of reduced PA and increased sedentary time on older adults in the coming months.

Effects of PA and social isolation on mood and mental health

Although social-distancing and isolation measures can flatten the epidemic curve[14], there is compelling evidence for numerous negative health outcomes when people, particularly older adults, are isolated[15]. This is important to consider as the timescale of UK lockdown measures are uncertain. Feelings of social isolation are associated with lower levels of self-rated physical health[16], faster rates of cognitive decline and greater sensitivity to social threats[17]. Imposed quarantine can lead to negative psychological effects such as; post-traumatic stress disorder, anger and confusion, with the main stressors being: longer quarantine duration, infection fears, frustration, boredom and inadequate supplies[18] and COVID-19 measures have been shown to have a negative impact on mental health in other countries[19]. As PA has positive psychological benefits that include: reduced anxiety, reduced depressive symptoms and improved mental well-being[20] there may be a synergistic negative effect on physical and mental well-being if PA is reduced.

Ways to monitor PA during the COVID-19 pandemic

Conceptual Framework

Given the COVID-19 lockdown in the UK, assessing PA levels via direct measurements has been rendered unsafe, meaning the use of online self-report measures are one of the few viable alternatives available to researchers. Therefore, selecting the most appropriate self-report tools to measure PA is important[21]. As human movement can be conceptualised into two categories: active and sedentary behaviours, affected by physiological, psychological, social and environmental factors[21], all of these factors should be considered when monitoring changes in PA. To do this effectively, the ideas proposed by Gabriel, et al. [21] were carefully considered

in the selection of measures and questions used in the present study in order to obtain useful quantitative and qualitative information pertaining to an individual's PA patterns during the COVID-19 outbreak.

Measuring Physical Activity

The doubly labelled water (DLW) technique is considered the 'gold standard' for measuring energy expenditure under free living conditions, but is incredibly expensive making it unsuitable for large scale studies[22]. Accelerometery is another widely used method of estimating energy expenditure, with several commercially available accelerometers being shown to correlate reasonably well with energy expenditure calculations produced by the DLW technique[23]. Again, due to the expense of units and the need to wear and transport accelerometery devices, their use in nationwide studies presents significant challenges. During COVID-19 restrictions, self-report questionnaires provide a pragmatic and cost-effective solution. The International Physical Activity Questionnaire for the Elderly (IPAQ-E) has evidence of validity when compared to accelerometer measured PA in socially active older adults[24] making its use a feasible alternative in the current circumstances. The IPAQ-E also allows for the exploration of sedentary time during the COVID-19 pandemic. Furthermore, as past behaviours tend to predict future behaviours[25] it is important to consider PA levels prior to the COVID-19 outbreak. The IPAQ-E allows the classification of PA level (low, moderate and high), for easy categorisation and comparison.

Measuring Functional Performance

Similarly, directly measuring functional performance is preferential but doing so during the COVID-19 pandemic is unsafe However, self-report questionnaires such as the late-life function and disability instrument (LLFDI) have been shown to correlate with measured functional ability when examined using the short physical performance battery[26]. Furthermore, performance measures have not been found to be psychometrically superior to the use of questionnaires when establishing ability in ADL's[27] suggesting that self-report questionnaires are a reasonable alternative to assess changes in functional performance. As physical function is key to ADL's, functional independence and quality life[12] and physical function is influenced by PA[28], monitoring perception of physical function is key to understanding the impact on older adults.

Measuring Mood

Positive emotions and mood have beneficial effects on health-related behaviour e.g. performing physical activity[29]. Moreover, there is strong evidence that chronic exercise is linked with improved mood of older adults[30]. Given this reciprocal relationship, it is important to understand how UK lockdown restrictions impact both mood and PA, whilst considering activity levels prior to lockdown. No single mood assessment technique can be considered optimal in all situations for older adults and is important for researchers to consider their research question, study design and population when selecting a measure[31]. The Brunel mood scale (BRUMS) is a 24-item self-report measure comprising words that describe feelings and is established as a reliable and valid measure of mood state[32] [33]. The BRUMS comprises subscales for anger, confusion, depression, fatigue, tension, and vigour. Advantages of the BRUMS include collecting data relating to either the present moment or over a longer period of time (the last week), making it easier to capture an overview of mood as opposed to a single moment in time.

The Present Study

Given the paucity of data on the effects of measures taken to contain a global pandemic, this study examines the impact that COVID-19 measures in the UK, had on individuals aged 70 and over in terms of their PA levels, perceived physical functioning, and mood, spanning the dates: March 20th to May 4th 2020 during the period of strictest lockdown measures. Although PA is predicted to be reduced by COVID-19[8] findings thus far are equivocal. Maugeri, et al. [34] observed a reduction in PA and energy expenditure across age groups in Italy whereas Cheval, et al. [9] observed increased sedentary time, decreased vigorous PA but an increase in walking time and moderate PA in younger adults. We have also considered the key influences on PA proposed by Gabriel, et al. [21]. This research will aid public health practitioners in understanding where support is needed, not only in the coming weeks and months following the COVID-19 pandemic, but also in the event of a second wave. Based on current knowledge, we hypothesise that COVID-19 measures will: (1) elicit a decrease in PA, (2) negatively alter perception of physical function, (3) have an adverse influence on mood.

MATERIALS AND METHODS

Study Design

This cross-sectional, mixed-methods, observational study was conducted using self-administered online surveys. An initial pre-COVID-19 lockdown survey was completed (retrospectively where necessary) between March 11th – March 28th requiring participants to describe their PA levels, perceived physical function and general mood before the outbreak of COVID-19. Participants were then required to complete subsequent surveys at 14-day intervals (fortnightly) describing their activities and moods between 21st March – 4th May 2020. The beginning of the fortnightly survey distribution corresponded with the two-week period following the initial imposition of the restrictions in the UK on March 20th. As UK restrictions began to relax on May 10th, data collected thereafter was omitted from this manuscript. Figure 1 displays the timeline of the present study in relation to the key events surrounding the UK outbreak of COVID-19. As daylight, sunshine and temperature are important environmental considerations for PA[21] and have been shown to have an influence on the PA levels of older adults[35], mean weather conditions for the two weeks preceding each survey are presented in Figure 1.

Figure 1 here

Participants

Following institutional ethical approval (P105110), 121 older adults were recruited throughout the UK by self-selection, through online advertisements. Four participants were withdrawn (3.3% attrition rate) for failing to return surveys in the allotted timeframe and were excluded from analyses (Table 1). Figure 2 displays the geographical location of all participants and a heat map of the number of COVID-19 infections per region to provide context of participants local experience of COVID-19. Older adults were required to meet the following inclusion criteria: (1) at least 70 years old, (2) living in the UK, (3) absent of any cognitive disorders e.g. dementia, (4) access to the internet. All participants provided written informed consent before completing the initial survey.

Table 1 here

Figure 2 here

Survey Contents

The initial survey contained five sections (about you; your housing situation; your health; your current PA levels and questions about COVID-19), subsequent fortnightly surveys contained four sections (COVID-19 questions, your communications, your activity and your mental health). These questions provided important qualitative data to help further understand any potential changes observed from the validated self-report measures detailed below. Clear instructions were provided for all survey questionnaires, with the option to email the lead researcher if necessary. The initial survey provided baseline data (before the outbreak of COVID-19) and, fortnightly surveys were used to detect potential changes during lockdown.

IPAQ-E

The IPAQ-E[24] consists of 7 questions designed to obtain information about PA completed in the last week. It includes sedentary time, walking, moderate PA and vigorous PA, providing clear examples and definitions. Equations are used to convert the frequency (days per week) and amount of time (minutes per day) spent walking, performing moderate PA and/or vigorous PA into met-minutes per week. Full details of the IPAQ-E and how it is scored can be found at www.ipaq.ki.se. Data collected in the initial survey was used to categorise participants based on their PA levels (low, moderate, high) using criteria provided at www.ipaq.ki.se for use as a categorical predictor in the analysis.

LLFDI

The late-life function and disability instrument (LLFDI)[36 37] is designed to assess and be responsive to both changes in perception of function and disability in older adults. Functional limitations are described as limitations in a person's ability to complete given tasks and disability refers to performance in life tasks that are expected of an individual [36]. The three domains: frequency, limitation and function, consist of many questions that are scored based on the answer given. These responses are then scaled (0-100) for easier clinical interpretation. Higher scores indicate greater frequency of activity, less limitation and greater function.

BRUMS

The Brunel mood scale (BRUMS) contains 24 mood descriptors, such as angry,

energetic, nervous, and unhappy etc. Respondents indicate if they have experienced these feelings on a 5-point scale (0= not at all, 1= a little, 2= moderately, 3= quite a bit, 4= extremely). The 24 items comprise six subscales: anger, confusion, depression, fatigue, tension and vigour that are each made up of 4 items. The coefficient of variation for BRUMS scores in older adults have been shown to be 0, 3.2, 3.5, 7.3, 5, and 9.1% for anger, confusion, depression, fatigue, tension, and vigour, respectively[38]. In accordance with BRUMS instructions[32], during the initial survey, participants indicated the extent they felt each word “normally” (pre-COVID-19 outbreak) and all fortnightly surveys were answered “How have you felt during the past week including today”. Results are presented after being scored into the aforementioned subscales.

Statistical analysis

All analyses were conducted in R using Bayesian Regression Models to implement a Hamiltonian Markov Chain Monte Carlo (MCMC) with a No-U-Turn Sampler. A series of mixed effect Bayesian regression models were fitted with the intercepts allowed to vary for each participant and using different response distributions (Gaussian distribution, student-t distribution, and skew normal distribution). Time-point, sex and self-assessed PA (low, moderate and high) were included as categorical predictors, with interactions specified for all variables. Given our limited knowledge of the effects explored, weakly informative priors were used for all models. A Bayesian multivariate regression model was fitted to explore differences in mood states and their relationship with PA levels. All models were then compared using Leave-One-Out (LOO) cross-validation with the results of the best fitting model for a particular measure being reported. A LOO information criterion (LOOIC) difference greater than twice its corresponding standard error was the criterion used for determining the best models. All models were checked for convergence ($\hat{r} = 1$), with graphical posterior predictive checks.

Pairwise differences across time-points were explored using both Probability of Direction and Practical Significance calculations. Probability of Direction (pd) is expressed as a percentage and is the probability of the posterior distribution being strictly positive or negative. The range of directional probability is from 50% to 100%

(i.e. 0.5 and 1), 50% suggesting differences are completely uncertain. Practical Significance (ps) was determined using a unidirectional equivalence test and is the probability an effect is above a given threshold. The threshold for a negligible effect was set at 0.1· the standard deviation of Y. Practical significance is only reported when pd was >95%. The arbitrary unit (AU) values refer to the threshold that determines practical significance for each variable and are only reported when assessing the probability of the difference going beyond a negligible effect.

Results

The estimated marginal means for all measured variables are displayed in Table 2, while any key differences across time-points along with their associated probability of direction are in Table 3. Qualitative responses from each survey are displayed in Table 4.

IPAQ Met-Minutes

There is strong evidence (ps=99.85%; >374 Met-minutes) that self-reported PA levels increased from pre-lockdown through each of the time-points measured (Table 2), for both sexes. Furthermore, the high PA group's PA decreased slightly following lockdown, but these changes are uncertain. In contrast, self-reported PA for the low and moderate groups both increased over lockdown. While the biggest increase in PA levels is estimated for the low PA group, the highest probability of an increase in PA was for the moderate PA group (ps=99.94%; >374 met-minutes).

Figure 3 about here

BRUMS

Relationship between mood and PA

The multivariate analysis of BRUMS subscales and PA (met-minutes), suggest a very weak relationship between mood and PA, as the coefficient for the relationship across moods and time-points=0.00.

BRUMS Subscales

Tension

Tension peaked two weeks into lockdown, and then subsequently reduced week on

week (Table 2). While tension is predicted to be at its lowest level at week six, changes in tension from the pre-lockdown to week six are uncertain (ps=12.03%; >0.3 AU; Table 3). While females are predicted to have higher tension across each time-point, differences between sexes are uncertain (Table 3). Tension was similar for each PA group (Table 2).

Depression

There is strong evidence (ps=95.90%; >0.3 AU) that depression increased for both sexes during lockdown (Table 3). While females are predicted to experience greater depression compared to males (Table 2), these differences are uncertain. Although there is strong evidence for an increase in depression across the lockdown period for the high PA group only, the probability of this increase being beyond the negligible effect is less convincing (ps= 81.58%; >0.3 AU).

Anger

There is strong evidence (Table 3) for a reduction in anger from pre-lockdown to weeks two (ps=98.35%; >0.22 AU), four (ps=99.28%; >0.22 AU) and six (ps=99.35%;>0.22 AU). Furthermore, there is strong evidence that females are predicted to have lower anger than males, (ps=98.08%; >0.22 AU). Lastly, there is strong evidence for a reduction in anger following pre-lockdown for the moderate (pd= 96.78%; ps=85.82%; >0.22 AU) and high PA groups (pd=99.55%; ps=96.20%; >0.22 AU) but not for the low group (pd=78.27%; ps=68.55%; >0.22 AU).

Vigour

Although not certain to be beyond a negligible effect (>0.36 AU), there is evidence of an initial reduction in vigour from pre-lockdown (Table 3). There is strong evidence (ps=99.48%; >0.36 AU) that vigour initially reduces for females across the lockdown period (ps=99.33%), but this is not the case for males (ps=57.83%; Table 2). Patterns of vigour were similar for all PA groups (Table 2).

Fatigue

There is strong evidence for a reduction in fatigue from pre- lockdown to week two and week four, and from week two to week four (Table 3), but the evidence for this reduction beyond a negligible effect is weak (ps ranging from 25.52% to 92.65%; >0.31

AU). There is strong evidence of fatigue reducing from pre-lockdown to week six in males (Table 3). The low PA group was the only group with strong evidence (ps=96.47%; >0.31 AU) for a reduction in fatigue across lockdown (Table 3).

Confusion

Confusion remained stable across the lockdown period (Table 2). The strongest evidence for a reduction in confusion across lockdown is for males (Table 3), but it is uncertain to be beyond negligible (ps=71.44%; >0.24 AU). While the high PA group experienced the highest levels of confusion across lockdown, and the low PA group the lowest (Table 2), these differences are uncertain (Table 3).

LLFDI

Disability Components

Frequency

The regularity of life tasks reduced from pre-lockdown to week two and then stabilised (Table 2). There is strong evidence (ps= 100.00%; >0.87 AU) for the initial reduction in the regularity of life tasks (Table 3), with both sexes and all PA groups (ps=100.00%; >0.87 AU) following the average trend (Table 2).

Limitation

Perception of limitation increased (lowering limitation score) consistently across lockdown (Table 2), with strong evidence across all time-points (ps ranging from 99.30% to 100%; >1.81 AU; Table 3). There is strong evidence (ps=100%; >1.81 AU) that both sexes follow the average trend with increases in limitation at each time-point (Table 2). While females perceived greater limitation than males, differences between sexes are uncertain (Table 3). All PA groups follow this pattern of increasing limitation across time-points (Table 2).

Function Component

Perception of function remained relatively stable across lockdown (Table 2). While perception of function was higher for males (Table 2), there is no strong evidence of a difference between sexes (Table 3). Lastly, perception of function was similar between all PA groups (Table 2).

DISCUSSION

The present study examined the influence that measures taken in the UK to control COVID-19, had on community dwelling individuals aged 70 and over, in terms of their PA levels, perceived physical functioning, and mood during the initial six weeks of the strictest lockdown measures. Our results add unique insight, useful for public health practitioners not only in the ongoing COVID-19 pandemic, but also in the event of a future lockdown (second wave). The main findings of this study are that despite lockdown measures, both males and females maintained or increased their PA levels. Those individuals already highly active, maintained high PA levels, while those with low/ moderate activity levels significantly increased their weekly PA. Both sexes experienced an increase in depression (BRUMS subscale), but the changes in PA had no relationship with overall mood (all BRUMS subscales). Finally, as demonstrated by the LLFDI, despite large decreases in the performance of life tasks and increased feelings of limitation, perception of physical function was well maintained across lockdown. Therefore, hypothesis 1 and 2 must be rejected whilst we demonstrate support for hypothesis 3.

Physical Activity and sedentary behaviour

The patterns of PA observed in this study clearly refute the projected trend[8]. However, our qualitative data provide useful insights into these observations. As demonstrated in Table 4, participants were aware of the importance of maintaining their PA. Table 4 reveals that 79% of participants manipulated their daily activities in order to remain physically active, with “more exercise” being the most common change. Furthermore, the UK experienced a very dry and sunny spring[39] and good weather conditions have a positive relationship with the PA levels of older adults[35]. Moreover, given the residential situation of many participants (Table 4), more time was spent in gardens, as gardening was the second most popular change to activities (Table 4). In addition to maintaining PA, spending time in the garden has the potential for emotional, physical and spiritual renewal [40] possibly limiting some of the detrimental psychological effects of lockdown.

Physical Function

As would be expected, given the closure of most of society, LLFDI data show that

frequency of life tasks decreased substantially for both sexes along with increased feelings of limitation in being able to complete those tasks. However, perception of function remained consistently high from pre-lockdown, throughout the six weeks of lockdown. Given that PA was maintained or increased, it is unsurprising that older adults continued to perceive high functional ability.

Mood

The strongest evidence of an influence on mood during lockdown was for depression, which was higher in females but increased for both sexes following the introduction of lockdown measures and was still continuing to rise at week six. This pattern has also been observed by Sigdel, et al. [41] who concluded that the prevalence of depression was high in the general population during the COVID-19 pandemic lockdown in Nepal. Furthermore, Pieh, et al. [19] concluded that the prevalence of mental health problems, particularly depressive symptoms and anxiety is higher and psychological health and well-being is lower during the COVID-19 pandemic compared to pre-COVID-19 studies. Therefore, in agreement with the recommendations made by Sigdel, et al. [41], interventions to promote mental well-being need to be incorporated into interventions attempting to respond to COVID-19, particularly for high risk groups such as older adults.

Interestingly, anger was highest pre-lockdown and decreased over time, this likely reflects a situation of elevated uncertainty, leading to an anticipatory negative affective response[42], that reduced as lockdown measures became more familiar. The human brain uses past experiences to help plan future actions[43]. When a seismic event such as the outbreak of COVID-19 occurs, it creates significant uncertainty about current and future events. The neurobiological mechanism in such situations increases emotional reactivity to adverse events, often resulting in fear, anxiety and more negative affect[43]. Our observations would appear to reflect this process, although not to the same extent seen elsewhere[44]. Although mental health implications were largely negative, there were also positive effects reported (Table 4), similar to Zhang and Ma [45]. These positive effects may be attributed to a slowing of the pace of society[46], which appears likely, given the most popular responses in Table 4.

Limitations

Participants in the present study were much more physically active than average older

adults in the UK[47]. In our sample, 40.2% of all participants reported meeting all of the UK PA guidelines while an additional 58.1% reported meeting significant parts of the guidelines. Despite indiscriminately advertising for participation nationwide, Table 4 demonstrates a largely homogenous sample, consisting of individuals from similar ethnic backgrounds and high socio-economic status, making generalising these findings to the wider population unsuitable.

Recent UK data illustrates that, 16.7% of 65-74 year olds had never used the internet or had not used it for at least 3 months, figures rising to 53.1% in the over 75's[48]. As our inclusion criteria required participants had access to the internet, this somewhat unavoidably biases the sample. Older adults in the present study were able to rely on technology to maintain regular weekly social contact with friends and family (Table 4). Importantly, older adults who use the internet as a communication tool exhibit lower levels of social loneliness[49] and feelings of loneliness are linked strongly to depression[50]. Consequently, it is likely that older adults without computer literacy, would have been affected to a far greater degree as opportunities for face-to-face communication were limited. Furthermore, the issues surrounding sources of bias in self-report data are well documented[51]. However, we carefully considered and implemented pragmatic data collection using the safest available resources, in order to obtain useable data to provide useful and original insight into this topic.

Finally, despite being able to monitor changes in overall met-minutes of activity, the IPAQ-E does not allow for the exploration of the evolution of PA (how composition of daily activities may have altered in response to COVID-19 restrictions). However, there are some data available in table 4 that go some way in helping to explore changes in daily behaviours.

Conclusion

Both males and females recognised maintaining physically active during lockdown was extremely important. Consequently, physical activity levels were maintained by already highly active older adults, while lockdown acted as a trigger to increase PA in those with low/ moderate PA levels. Subsequently, high levels of perceived physical function were maintained over the lockdown period. This maintenance of PA was likely made easier by good weather conditions experienced in the UK during the lockdown

period. High socio-economic status and computer literacy was also likely to have helped these participants to maintain social contact and avoid many of the negative effects of social isolation in lockdown. Despite this, depression continued to increase for both sexes over the course of lockdown, suggesting that even healthy, active older adults need mental health support during this time. Therefore, our data highlights the need for mental health support for older adults in the UK both now and as we move through the easing of lockdown restrictions and particularly, in the event of a second wave.

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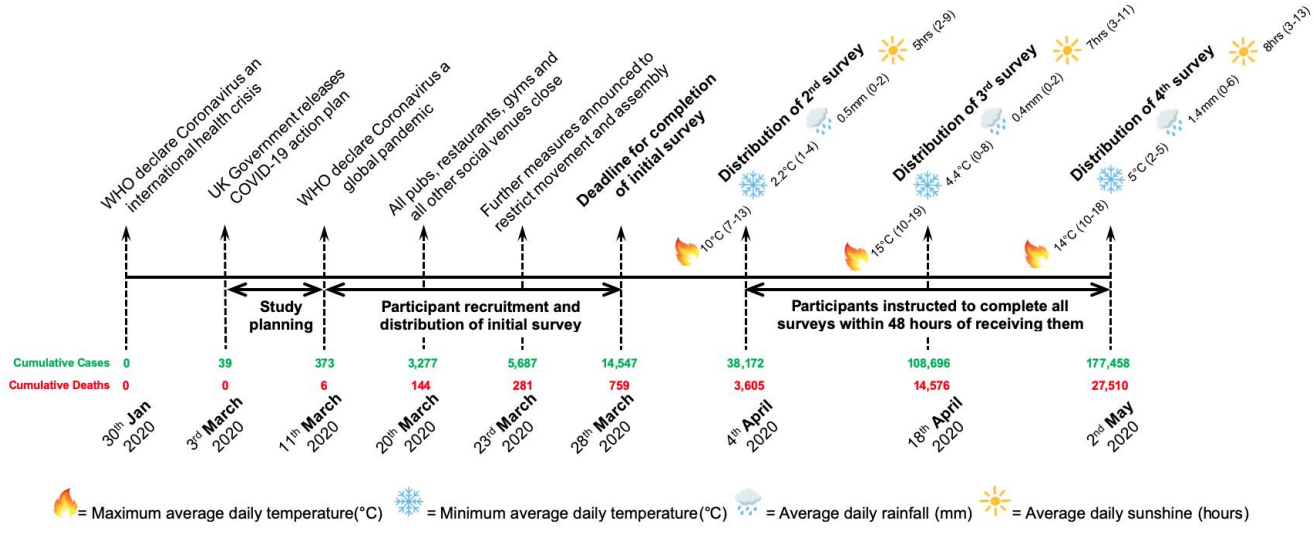

Figure 1. Schematic diagram of the experimental protocol and timeline of the present study.

Note: Weather conditions are retrieved from OGIMET.com and provide an average of UK weather conditions from approximately 140 weather stations [52] and are calculated as daily averages for the 2 weeks preceding the completion of each survey; values in brackets = range of values; data on cumulative cases and deaths in the UK are supplied by the WHO.[1]

WHO = World Health Organisation; COVID-19 = Coronavirus

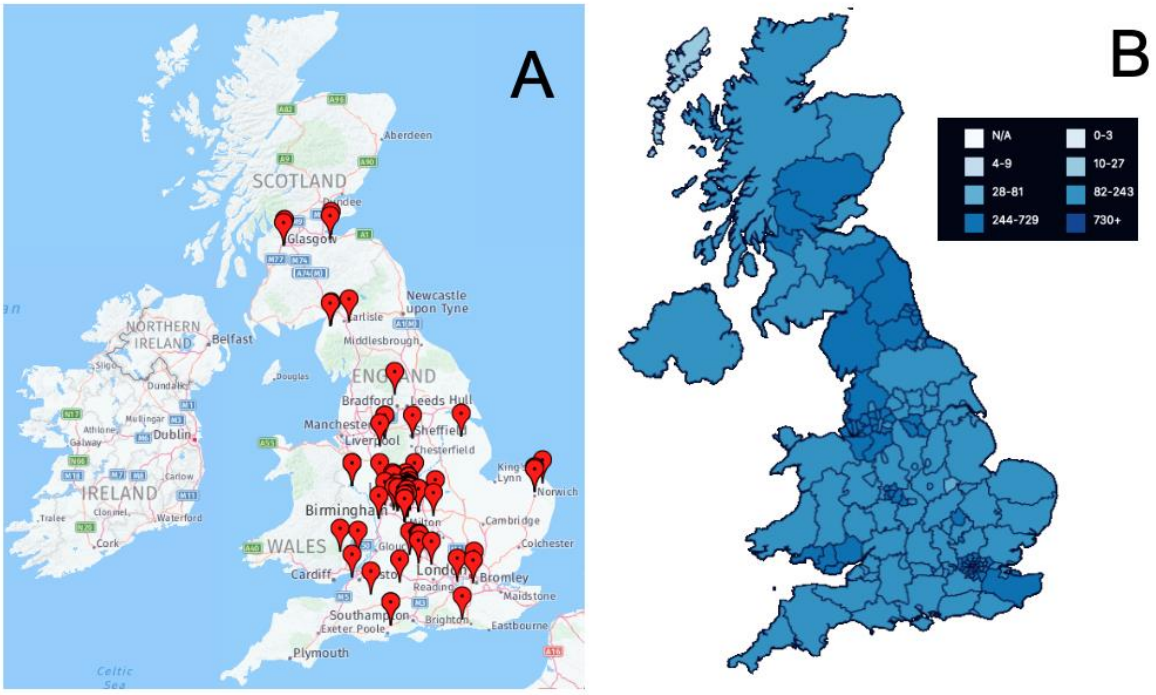

Figure 2. Geographical location of all 117 study participants using batch geocoding [53] (A) Heat map of infections across the UK (B); Map colours indicate the number of cases of COVID-19 per 100,000 people as of May 4th 2020 (Graphic and key from CovidLiveUK [54].

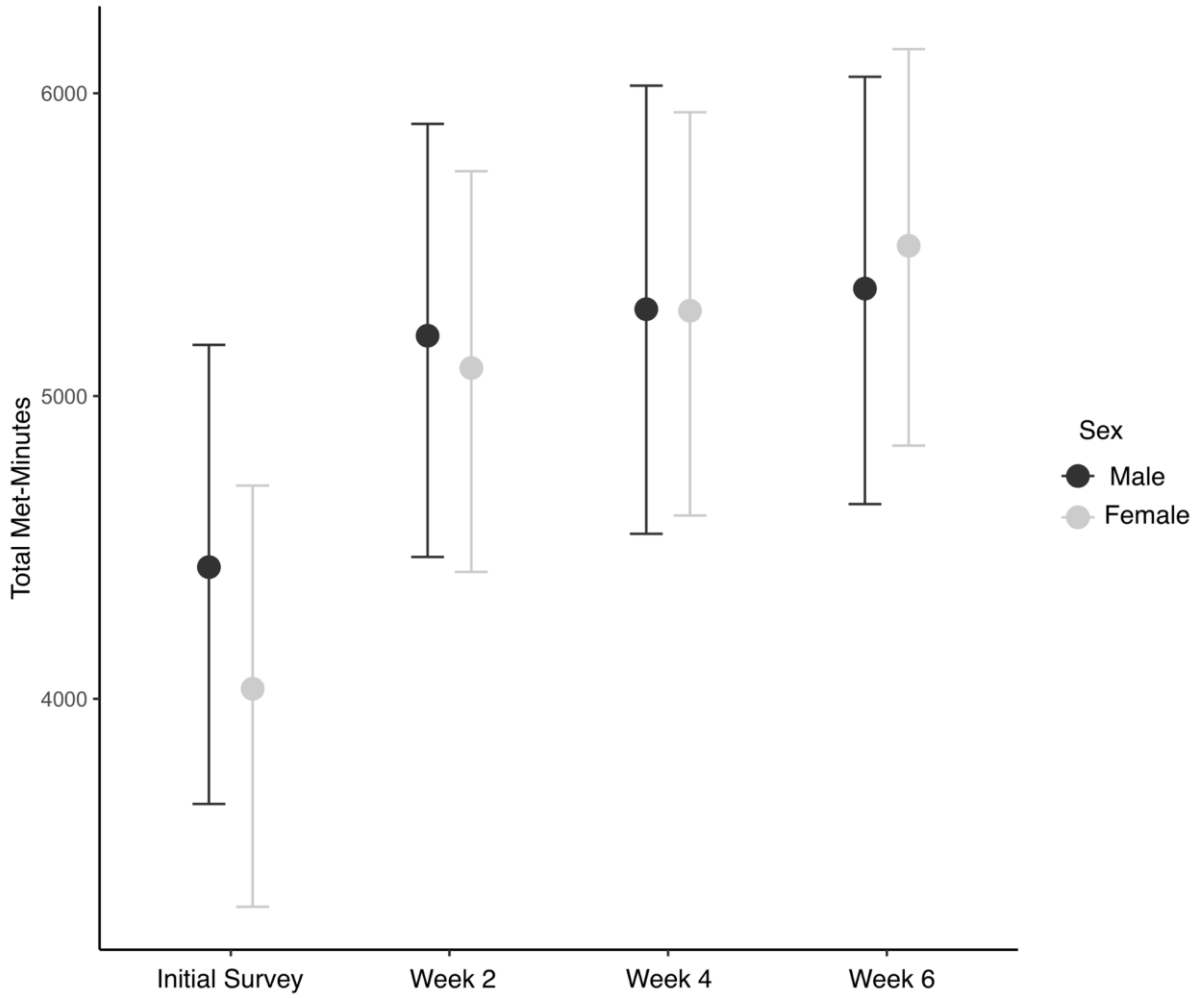

Figure 3. Mean ± SD for IPAQ met-minutes for the initial survey and each time point over the lockdown period

Table 1. Participant characteristics

		Male	Female	Total
Sample Size (*n* =)		52	65	117
Age (years)		76 ± 4 (70 - 90)	74 ± 4 (70 - 87)	75 ± 4
Ethnicity (*n* =)		White British: 48 White Other: 4	White British: 58 White Other: 7	White British: 106 White Other: 11
Education Qualification Level (0 - 8)		5 ± 2 (0 - 8)	5 ± 2 (0 - 8)	5 ± 2
Living Situation (*n* =)	Partner/ Spouse	39	38	77
	Alone	10	25	35
	Other Family member(s)	3	1	4
	A friend	0	1	1
Residence type (*n* =)	House	41	53	94
	Flat/Apartment	5	5	10
	Bungalow	6	6	12
	Mobile Home	0	1	1
Have a medical condition that affects physical/ mental health (*n* =)		17	18	35
Consider themselves limited in physical function (*n* =)		7	8	15
Have a carer once or twice weekly (*n* =)		2	2	4
Cigarette smokers (*n* =)	Current Smokers	2	0	2
	Ex-smokers	31	29	60
	Never Smoked	19	36	55
Self-reported meeting the current PA guidelines (*n* =)	All guidelines	25	22	47
	Parts of guidelines	26	42	68
	No guidelines	1	1	2
Parts of the guidelines being met (*n* =)	Active everyday	26	42	68
	Strength/ balance at least 2 days per week	15	26	41
	150 mins moderate (75 mins vigorous) PA	13	21	34
PA levels at baseline (Met-min/ week) using IPAQ data median (interquartile range)		3146 (4764)	2670 (3431)	2826 (3986)
PA category at initial survey using IPAQ data (*n* =)	**Low activity (*n*=)**	4	3	7
	Age (range)	74 ± 2 (72 – 76)	73 ± 3 (70-76)	74 ± 2 (70-76)
	Distribution (%)	56:44:0	59:38:3	57:42:1
	Moderate activity (*n*=)	20	32	52
	Age (range)	75 ± 5 (70 – 84)	75 ± 5 (70 – 87)	75 ± 5 (70 – 87)
	Distribution (%)	53:39:8	44:50:6	48:46:6
	High activity (*n*=)	28	30	58
	Age (range)	76 ± 4 (70 – 90)	74 ± 4 (70 – 86)	75 ± 4 (70 – 90)
	Distribution (%)	36:46:18	36:54:10	36:50:14

Note: Values are presented as Mean ± SD and (Range) other values indicate how many participants (*n* =) fell into each category; Met-mins data is presented as median and (interquartile range); Qualification level is graded on the Regulated Qualifications Framework (RQF) for England and Northern Ireland; M = Male; F = Female; IPAQ = International Physical Activity Questionnaire; PA = Physical Activity. Distribution = the distribution of met-minutes from walking, moderate PA and Vigorous PA (in that order) expressed as a percentage of total met-minutes

Table 2. Estimated marginal means and 95% credible intervals of the best fitting models for each measure across weeks of lockdown with interactions for sex and PA category

Weeks in Lockdown	IPAQ-E (95% CI)	Tension (95% CI)	Depression (95% CI)	Anger (95% CI)	Vigour (95% CI)	Fatigue (95% CI)	Confusion (95% CI)	LLFDI frequency (95% CI)	LLFDI limitation (95% CI)	LLFDI function (95% CI)
Initial: Total	4213 (3658:4722)	2.43 (1.86:2.97)	1.78 (1.21:2.30)	2.33 (1.93:2.71)	9.21 (8.49:9.82)	3.62 (3.05:4.21)	1.55 (1.15:2.02)	56.3 (55:57.7)	77.1 (73.5:80.8)	69.9 (67.8:72.1)
Week 2: Total	5139 (4622:5595)	2.78 (2.26:3.36)	2.16 (1.58:2.70)	1.73 (1.34:2.12)	8.35 (7.73:9.05)	3.40 (2.86:4.02)	1.50 (1.03:1.93)	46.2 (45:47.6)	68.2 (65.1:71.7)	69.7 (67.5:71.9)
Week 4: Total	5286 (4797:5792)	2.70 (2.15:3.24)	2.17 (1.64:2.74)	1.66 (1.26:2.06)	8.47 (7.82:9.14)	3.00 (2.42:3.57)	1.61 (1.16:2.02)	45.8 (44.7:46.9)	63.6 (61.2:66.3)	69.6 (67.4:71.8)
Week 6: Total	5431 (4929:5899)	2.32 (1.75:2.86)	2.35 (1.79:2.89)	1.68 (1.31:2.08)	8.67 (7.99:9.29)	3.18 (2.59:3.76)	1.35 (0.94:1.81)	45.1 (44.1:46.1)	56.4 (54.7:58.2)	70.2 (68.1:72.5)
Initial: Female	4033 (3313:4704)	2.80 (2.07:3.51)	2.00 (1.27:2.65)	2.11 (1.54:2.63)	10.03 (9.19:10.90)	3.18 (2.41:3.92)	1.36 (0.75:1.95)	56.6 (55:58.2)	76.1 (72.4:80.0)	69.3 (66.7:71.8)
Week 2: Female	5092 (4416:5737)	3.25 (2.51:3.97)	2.46 (1.75:3.15)	1.73 (1.19:2.27)	8.55 (7.68:9.38)	3.17 (2.46:3.93)	1.55 (0.92:2.12)	47.1 (45.5:48.8)	66.9 (63.3:70.6)	69.2 (66.6:71.8)
Week 4: Female	5282 (4605:5936)	3.10 (2.36:3.82)	2.52 (1.87:3.25)	1.54 (1.00:2.08)	8.40 (7.52:9.21)	2.68 (1.96:3.45)	1.65 (1.01:2.22)	46.4 (44.9:47.9)	63.2 (60.3:66.1)	69 (66.4:71.6)
Week 6: Female	5496 (4839:6148)	2.63 (1.89:3.36)	2.41 (1.74:3.13)	1.21 (0.71:1.76)	8.67 (7.81:9.54)	2.92 (2.21:3.69)	1.30 (0.67:1.86)	45.5 (44.1:46.9)	55.7 (53.5:57.7)	69.8 (67.2:72.4)
Initial: Male	4435 (3666:5179)	1.91 (1.08:2.68)	1.49 (0.69:2.26)	2.62 (2.08:3.23)	8.19 (7.21:9.14)	4.22 (3.38:5.02)	1.73 (1.07:2.37)	55.2 (53.7:56.9)	78.0 (74.0:82.0)	70.7 (67.9:73.4)
Week 2: Male	5199 (4500:5926)	2.15 (1.34:2.93)	1.75 (1.04:2.57)	1.71 (1.12:2.28)	8.12 (7.21:9.05)	3.70 (2.87:4.53)	1.37 (0.72:2.02)	44.7 (43.1:46.4)	69.4 (65.7:73.3)	70.2 (67.4:73)
Week 4: Male	5287 (4533:6006)	2.17 (1.38:2.95)	1.70 (0.95:2.51)	1.79 (1.19:2.37)	8.59 (7.62:9.54)	3.43 (2.59:4.23)	1.50 (0.85:2.14)	45.2 (43.8:46.6)	64.4 (61.3:67.6)	70.1 (67.3:72.9)
Week 6: Male	5355 (4630:6039)	1.88 (1.11:2.72)	2.26 (1.47:3.09)	2.25 (1.66:2.83)	8.65 (7.7:9.65)	3.54 (2.73:4.39)	1.37 (0.71:2.02)	44.8 (43.4:46.1)	57.1 (54.9:59.4)	70.6 (67.8:73.5)
Initial: Low PA	1654 (-495:3597)	3.06 (0.83:5.16)	2.59 (0.27:4.73)	1.47 (-0.18:3.06)	8.30 (5.86:11.09)	3.85 (1.47:5.85)	1.01 (-0.72:2.83)	56 (53.3:58.6)	77.5 (73.2:82.2)	69.8 (66.9:72.7)
Week 2: Low PA	2761 (588:4532)	2.96 (0.79:5.22)	3.31 (1.02:5.40)	0.89 (-0.66:2.62)	6.53 (3.97:9.14)	2.47 (0.15:4.57)	1.01 (-0.82:2.76)	45.4 (42:48.8)	68.9 (63.8:74.6)	69.3 (64.9:73.6)
Week 4: Low PA	3718 (1704:5565)	2.25 (0.03:4.41)	3.16 (1.14:5.53)	0.72 (-0.87:2.34)	8.80 (6.31:11.51)	1.99 (-0.15:4.28)	0.99 (-0.82:2.78)	46 (43:48.9)	63.6 (59.1:68.3)	69.2 (64.9:73.3)
Week 6: Low PA	3627 (1458:5382)	1.67 (-0.51:3.9)	2.88 (0.83:5.16)	0.86 (-0.75:2.54)	9.10 (6.43:11.70)	2.03 (-0.32:4.14)	1.14 (-0.61:3.02)	45 (42:47.6)	56.6 (52.9:60.6)	69.8 (65.6:74.1)
Initial: Moderate PA	3029 (2190:3797)	2.36 (1.52:3.13)	1.64 (0.80:2.38)	2.42 (1.82:3.03)	9.08 (8.04:9.94)	3.47 (2.59:4.27)	1.27 (0.65:1.97)	56 (54.5:57.6)	77.3 (73.8:81.2)	69.7 (67.4:72)
Week 2: Moderate PA	4721 (4064:5361)	2.80 (2.03:3.65)	2.08 (1.25:2.81)	1.88 (1.29:2.55)	8.05 (7.06:8.96)	3.45 (2.61:4.29)	1.19 (0.57:1.88)	46.3 (44.7:47.8)	67.3 (63.8:70.9)	69.2 (65.3:73.3)
Week 4: Moderate PA	4857 (4180:5498)	2.68 (1.86:3.47)	2.10(1.21:2.84)	2.03 (1.44:2.66)	8.23 (7.31:9.23)	2.96 (2.14:3.83)	1.44 (0.79:2.12)	44.9 (43.5:46.3)	63.5 (60.8:66.4)	69.1 (65.1:73.1)
Week 6: Moderate PA	4856 (4145:5514)	2.14 (1.36:2.98)	2.30 (1.46:3.05)	1.88 (1.25:2.49)	8.45 (7.48:9.40)	3.21 (2.4:4.05)	1.08 (0.44:1.76)	44.4 (43.1:45.7)	56.3 (54.2:58.4)	69.7 (65.8:73.6)
Initial: High PA	6281 (5609:6976)	2.35 (1.51:3.07)	1.82 (1.05:2.56)	2.38 (1.82:2.95)	9.42 (8.51:10.36)	3.76 (2.95:4.59)	1.81 (1.19:2.44)	56.7 (55.1:58.2)	77.5 (73.8:81.3)	70.2 (68:72.3)
Week 2: High PA	5603 (4942:6292)	2.69 (1.89:3.44)	2.10 (1.32:2.85)	1.68 (1.09:2.23)	8.83 (7.92:9.81)	3.49 (2.68:4.28)	1.78 (1.16:2.39)	46.5 (44.9:48.2)	68.7 (65.1:73.1)	69.7 (67.5:71.8)
Week 4: High PA	5570 (4926:6264)	2.72 (1.95:3.5)	2.11 (1.36:2.87)	1.43 (0.89:2.04)	8.62 (7.64:9.5)	3.19 (2.36:3.96)	1.78 (1.16:2.39)	46.4 (45.1:47.9)	64.0 (61.1:66.8)	69.5 (67.4:71.6)
Week 6: High PA	5928 (5309:6556)	2.50 (1.74:3.28)	2.36 (1.59:3.12)	1.60(1.03:2.15)	8.74 (7.81:9.63)	3.31 (2.45:4.08)	1.57 (0.94:2.18)	45.6 (44.3:46.9)	56.1 (54.1:58.2)	70.2 (68.1:72.4)

Note: PA = Physical activity; IPAQ-E = International Physical Activity Questionnaire – Elderly; LLFDI = Late-Life Function and Disability Instrument;

Table 3. Key differences for each measure across weeks during lockdown and associated probability of direction as a percentage

	IPAQ		Tension		Depression		Anger		Vigour		Fatigue		Confusion		LLFDI frequency		LLFDI limitation		LLFDI function	
Contrasts	Diff	pd	Diff	pd	Diff	pd	Diff	Pd	Diff	pd	Diff	pd	Diff	pd	Diff	pd	Diff	pd	Diff	pd
Initial – Week 2	-930.00	**99.94%**	-0.36	**98.67%**	-0.38	**98.05%**	0.61	**99.95%**	0.86	**99.78%**	0.23	85.20%	0.06	65.72%	10.10	**100.00%**	8.97	**99.97%**	0.25	74.72%
Initial - Week 4	-1077.00	**99.98%**	-0.28	**95.30%**	-0.38	**98.25%**	0.67	**100.00%**	0.74	**98.88%**	0.63	**99.88%**	-0.05	65.33%	10.52	**100.00%**	13.48	**100.00%**	0.37	85.38%
Initial - Week 6	-1222.00	**100.00%**	0.11	73.28%	-0.57	**99.92%**	0.66	**100.00%**	0.55	**95.85%**	0.45	**98.38%**	0.20	91.88%	11.23	**100.00%**	20.72	**100.00%**	-0.25	74.50%
Week 2 - Week 4	-147.00	71.34%	0.08	67.45%	-0.01	51.38%	0.07	64.22%	-0.12	64.42%	0.40	**97.47%**	-0.11	78.85%	0.42	72.77%	4.57	**99.28%**	0.12	62.43%
Week 2 - Week 6	-292.00	87.66%	0.46	**99.80%**	-0.19	84.47%	0.05	60.62%	-0.30	82.85%	0.21	85.25%	0.14	84.62%	1.13	**95.95%**	11.82	**100.00%**	-0.51	88.74%
Week 4 - Week 6	-147.00	72.58%	0.39	**98.60%**	-0.18	85.35%	-0.01	53.27%	-0.18	71.12%	-0.18	81.47%	0.25	**96.35%**	0.71	88.64%	7.26	**100.00%**	-0.63	94.30%
Female: Initial- Week 6	-1464.90	**100.00%**	0.16	75.01%	-0.42	**95.95%**	0.88	**99.98%**	1.35	**99.90%**	0.25	82.60%	0.07	63.25%	11.13	**100.00%**	20.40	**100.00%**	-0.46	85.05%
Male: Initial- Week 6	-921.70	**98.76%**	0.04	55.75%	-0.50	**99.72%**	0.38	91.27%	-0.45	83.60%	0.69	**98.40%**	0.36	**95.28%**	10.48	**100.00%**	20.90	**100.00%**	0.10	57.27%
Female - Male: Initial	-399.10	78.36%	0.89	94.33%	0.51	82.95%	-0.52	90.85%	1.85	**99.65%**	-1.02	**96.12%**	-0.38	80.20%	1.34	**95.25%**	-1.68	92.91%	-1.15	84.51%
Female - Male: Week 6	141.00	61.90%	0.76	91.12%	0.16	61.92%	-1.03	**99.42%**	0.04	52.18%	-0.61	85.30%	-0.08	57.36%	0.74	79.97%	-1.35	84.38%	-0.64	67.83%
Low: Initial-Low: Week 6	-1976.94	94.34%	1.40	**97.47%**	-0.30	66.72%	0.03	77.98%	-0.80	73.98%	0.42	**98.38%**	-0.13	58.56%	11.03	**100.00%**	20.90	**100.00%**	-0.02	50.85%
Low - Moderate: Initial	-1380.56	92.06%	0.73	73.01%	0.95	79.67%	-0.96	86.85%	-0.75	70.83%	0.39	61.48%	-0.27	61.34%	0.01	50.44%	0.16	54.12%	0.12	54.46%
Low - Moderate: Week 6	-1830.96	89.88%	0.93	73.01%	1.04	70.35%	-1.00	87.58%	0.63	66.85%	-1.19	83.83%	0.05	52.12%	0.62	65.98%	0.27	55.56%	0.12	52.07%
Moderate: Initial-Week 6	-1830.96	**100.00%**	0.66	79.74%	-0.21	78.95%	0.54	51.85%	-0.41	89.68%	0.25	78.88%	0.19	80.91%	11.64	**100.00%**	21.00	**100.00%**	-0.01	50.39%
High: Initial-Week 6	352.02	81.16%	-0.15	72.89%	-0.54	**98.10%**	0.79	**99.83%**	0.68	93.10%	0.44	92.88%	0.24	87.56%	11.03	**100.00%**	21.30	**100.00%**	-0.02	52.07%
High - Low: Initial	4622.39	**100.00%**	-0.73	73.60%	-0.75	74.52%	0.91	85.72%	1.10	79.77%	-0.05	52.15%	0.80	79.92%	0.56	72.34%	-0.04	51.38%	0.37	65.89%
High - Moderate: Initial	3250.15	**100.00%**	-0.02	51.39%	0.18	64.55%	-0.05	54.10%	0.36	70.03%	0.31	70.25%	0.54	87.51%	0.60	80.20%	0.10	54.45%	0.50	81.27%
High - Low: Week 6	2302.65	**99.45%**	0.82	75.69%	-0.51	68.45%	0.74	80.20%	-0.36	60.10%	1.29	86.08%	0.43	66.75%	0.62	68.17%	-0.41	60.27%	0.38	59.78%
High -Moderate: Week 6	1074.76	**99.45%**	0.35	84.50%	0.07	54.97%	-0.29	74.80%	0.28	66.67%	0.11	51.52%	0.48	85.76%	1.25	93.69%	-0.18	56.12%	0.51	65.22%

Note: values in bold exceed a 95% probability

Table 4: Other question responses across all surveys

Questions	Sex	Initial Survey	2 Weeks	4 Weeks	6 Weeks
Time Taken to complete Survey (mins)	M	40 ± 15 (15 – 81)	37 ± 19 (13 – 100)	33 ± 16 (14 – 115)	29 ± 12 (10 – 58)
	F	39 ± 18 (19 – 107)	35 ± 14 (15 – 83)	32 ± 17 (12 – 105)	27 ± 11 (13 – 61)
	T	40 ± 17	36 ± 16	32 ± 16	28 ± 11
Have you been tested for Coronavirus in the past 2 weeks?	M	0	0	0	0
	F	0	0	0	0
	T	0	0	0	0
Have you suffered symptoms consistent with Coronavirus in the past 2 weeks?	M	0	0	0	0
	F	1	1	2	1
	T	1	1	2	1
Are you Concerned about contracting Coronavirus? (*n* =)	M	35	44	43	41
	F	50	48	46	46
	T	85	92	89	87
How concerned are you about contracting Coronavirus? (1-10) 1 = Not at all concerned 10 = Extremely concerned	M	-	5.8 ± 2.3	5.9 ± 2.3	6.1 ± 2.3
	F	-	6.1 ± 1.7	5.9 ± 2.2	6.1 ± 2.1
	T	-	6.0 ± 2.0	5.9 ± 2.2	6.1 ± 2.2
	Most commonly cited concerns about contracting Coronavirus				
		Male		Female	
		1. Becoming ill	2. Infecting loved ones	1. Becoming ill	2. Age
		3. Death	4. Underlying medical conditions	3. Underlying medical conditions	4. Loved ones contracting COVID-19
			Social Distancing: Self-Isolating		
Are you social distancing or self-isolating? (*n* =)	M	27:25	33:19	30:22	32:20
	F	42:23	41:24	38:27	43:22
	T	69:48	74:43	68:49	75:42
Have you communicated with people outside of your residence in the last 2 weeks? (*n* =)	M	-	52	51	51
	F	-	63	64	63
	T	-	115	115	114
On how many days per week have you communicated with people outside of your residence?	M	-	5.6 ± 2.2	5.5 ± 2.2 (0 – 7)	5.7 ± 2.1 (0 – 7)
	F	-	6.4 ± 1.5	6.2 ± 1.8 (0 – 7)	6.1 ± 2.1 (0 – 7)
	T	-	6.0 ± 1.9	5.9 ± 2.0	5.9 ± 2.1
	Most commonly cited methods of communication				
		Male		Female	
		1. Telephone 3. Video call	2. Email 4. Text message	1. Telephone 3. Text message	2. Email 4. Video call
Estimated time spent outside the confines of residence over each 2-week period (hours)	M	-	8.7 ± 9.7 (0 – 42)	6.8 ± 7.1 (0 – 30)	8.2 ± 8.5 (0 – 35)
	F	-	6.8 ± 7.6 (0 – 45)	8.3 ± 8.2 (0 – 36)	7.2 ± 7.0 (0 – 30)
	T	-	7.6 ± 8.6	7.6 ± 7.7	7.6 ± 7.7
Have you adapted your daily routine to try and remain physically active? (*n* =)	M	-	42	32	28
	F	-	50	41	39
	T	-	92	73	67
	Most commonly cited adaptions to daily routines				
		Male		Female	
		1. More Exercise 3. Walking	2. Gardening 4. House chores	1. More Exercise 3. Walking	2. Gardening 4. Stair climbing
Perceived Importance of remaining physically active? (1-10) 1 = Not at all important 10 = Extremely important	M	-	8.7 ± 1.8	8.7 ± 1.6	8.4 ± 1.9
	F	-	9.4 ± 1.0	9.1 ± 1.5	9.2 ± 1.3
	T	-	9.1 ± 1.5	8.9 ± 1.5	8.8 ± 1.5
Participants that reported COVID-19 had an impact on their mental health? (*n* =)	M	-	16	14	16
	F	-	26	26	25
	T	-	42	40	41
			Positive: Negative		
Has the impact been positive or negative?	M	-	2:14	0:14	1:15
	F	-	6:20	3:23	4:21
	T	-	8:34	3:37	5:36
How positive has the impact been? (1-10) 1 = Not at all 10 = Extremely positive	M	-	7.5 ± 0.7	-	2.0 ± 0.0
	F	-	5.3 ± 2.1	8.0 ± 0.0	5.5 ± 1.3
	T	-	5.9 ± 2.0	8.0 ± 0.0	4.8 ± 1.9
	Most Commonly cited positive effects on mental health				
		Male		Female	
		1. Closer to family 3. Time for hobbies	2. Time with partner 4. -	1. More relaxed 3. Less busy	2. Closer to family 4. Time for hobbies
How negative has the impact been? (1-10) 1 = Not at all 10 = Extremely negative	M	-	4.6 ± 2.1	5.2 ± 2.0	4.7 ± 2.0
	F	-	5.3 ± 2.3	5.2 ± 2.1	5.4 ± 2.2
	T	-	5.0 ± 2.2	5.2 ± 2.1	5.1 ± 2.1
	Most Commonly cited negative effects on mental health				
		Male		Female	
		1.Stress/ anxiety 3. Depression	2. Lack of socialising 4. Lack of motivation	1. Lack of socialising 3. Stress/anxiety	2. Depression 4. Loneliness

Note: Weeks (2 – 6) = number of weeks the surveys were distributed after COVID-19 restrictions were first put in place (March 20th); M = Male; F = Female; T = Total

Supplementary Table 1: Distribution as a percentage of met-minutes derived from walking, moderate PA and vigorous PA during the first 6 weeks of lockdown

PA category	Male	Female	Total
Low activity (*n*=)	4	3	7
Age (range)	74 ± 2 (72 – 76)	73 ± 3 (70-76)	74 ± 2 (70-76)
Initial survey Distribution (%)	56:44:0	59:38:3	57:42:1
Week 2 Distribution (%)	23:77:0	42:54:4	29:70:1
Week 4 Distribution (%)	14:52:34	43:56:1	24:53:23
Week 6 Distribution (%)	13:51:36	43:57:0	23:53:24
Moderate activity (*n*=)	20	32	52
Age (range)	75 ± 5 (70 – 84)	75 ± 5 (70 – 87)	75 ± 5 (70 – 87)
Initial survey Distribution (%)	53:39:8	44:50:6	48:46:6
Week 2 Distribution (%)	41:49:10	40:51:9	40:51:9
Week 4 Distribution (%)	38:47:15	33:57:10	35:53:12
Week 6 Distribution (%)	40:47:13	29:61:10	33:55:12
High activity (*n*=)	28	30	58
Age (range)	76 ± 4 (70 – 90)	74 ± 4 (70 – 86)	75 ± 4 (70 – 90)
Initial survey Distribution (%)	36:46:18	36:54:10	36:50:14
Week 2 Distribution (%)	33:50:17	43:49:8	38:50:12
Week 4 Distribution (%)	34:47:19	51:40:9	41:44:15
Week 6 Distribution (%)	36:47:17	43:48:9	40:47:13

Note: PA = Physical Activity; Age is given as mean ± SD and (range); Distribution = the distribution of met-minutes from walking, moderate PA and Vigorous PA (in that order) expressed as a percentage of total met-minutes