

# **The Impact of Coronavirus on Activity Levels of the UK Public**

## **Introduction:**

In March 2020, the World Health Organisation's (WHO) declaration of the Coronavirus (Covid-19) pandemic triggered a global implementation of restrictive measures to counteract the spread of Covid-19; these include: restricting international travel; closing non-essential businesses; self-isolation; and social distancing (Listings of WHO's response to Covid-19, 2020). Despite these severe changes, governments and health professionals have been vocal in encouraging the public to engage in physical activity and exercise outside of their homes (Guidance for the public on the mental health and wellbeing aspects of coronavirus, 2020; Hammami et al., 2020; #HealthyAtHome - Physical activity, 2020).

However, due to Covid-19 lockdown measures, people have limited exercise options; team sports, gym workouts and social walks have been either prohibited or significantly curtailed for extended periods of time. Additionally, when considering whether to leave their homes, people have reported feelings of stress, anxiety and even guilt (Cavalera, 2020), suggesting an innate tension is building within people regarding their ability to safely exercise whilst adhering to the Covid-19 restrictions.

Several studies have suggested that a reduction in physical activity could be an unintentional consequence of maintaining public safety (Constandt et al., 2020; Lesser and Nienhuis, 2020; What Does the Data Tell Us About the Impact Covid-19 is Having on Physical Activity? - Active Devon, 2020). Amidst these growing concerns, it is unclear whether people have adapted their exercise habits to accommodate the Covid-19 restrictions and maintain activity levels. Acquiring knowledge regarding exercise habits is important, as exercise engagement could significantly improve a person's ability to tackle Covid-19, by reducing anxiety and increasing immunity (Hammami et al., 2020).

Accordingly, the research objectives of this survey are to: (1) Explore the impact of Covid-19 on people's activity levels, (2) Describe how people have adapted to exercising during Covid-19, these research objectives can be broken down into four research questions:

- 1a. How does the amount of people's exercise compare to the recommended weekly amount?
- 1b. Are people exercising more or less than before Covid-19?
- 2a. How have the types of exercise people are engaging in changed?
- 2b. What are the perceptions of the factors effecting exercise during Covid-19?

## **Survey Design**

The questions were worded as simply as possible to ensure participants understood the questions as they were intended. A logical question structure and flow was used to help increase the response rate and the participant's engagement with the survey, although this may have [unintentionally] led to participants attempting to guess the hypothesis and tailoring their responses accordingly.

The first three questions focused on understanding the demographic of the sample of survey participants. Questions 4 & 5 aimed to explore the participants' attitudes towards exercise and why they exercise.

I compared the answers to question 6 with the WHO's weekly recommendations to determine how active the participants were. Question 7 was used to determine the scale of the effect Covid-19 has had on the changes in activity levels.

Questions 8 & 9 allowed me to compare the most frequent types of exercise both before and during Covid-19. Moreover, they enabled me to see the change in frequency for each type of exercise to better understand which forms of exercise were most impacted.

Using a Likert scale for question 10 helped identify how the participants' perceptions surrounding exercise during Covid; comparing the results between the groups of participants who exercised more and less, helped distinguish if there were any inhibitors or facilitators affecting the participants' exercise levels.

### **Operationalisation definitions:**

- Exercise/Activity level: Number of days a participant completed 30 minutes of physical activity
- Age: Years since the participant was born
- Gender: What the participant most strongly identifies as
- Country of Residence: Where the participant currently resides
- Attitudes towards exercise; 4 agree or disagree statements based on theory of planned behaviour (Poobalan, Aucott, Clarke and Smith, 2012)
- Perceived Facilitators/Inhibitors during Covid-19: 7 agree or disagree statements based on barriers and facilitators (from What Does the Data Tell Us About the Impact Covid-19 is Having on Physical Activity? - Active Devon, 2020)

### **Overview of Survey Data**

There were 52 responses to the survey; 2 surveys were excluded as the participants did not answer all of the questions. The Sample was cautiously reduced from 49 participants to 41, as the focus of the Sample was on UK-based participants.

Age Category	Female	Male	Total
20-25	4	13	17
26-30	6	8	14
31-40	2	6	8
40+	2	0	2
<b>Total</b>	14	27	41

Table 1. *Demographic Overview of Survey Population*

The demographic breakdown of the Sample is shown above in Table 1. The mean age of the participants was  $28.67 \pm 6.75$ , across a range of 21- 56 years. The participants' attitudes towards exercise, and reasons for exercising, are summarised in Figure 1 and Table 2, respectively.

Gender	Female				Male			Total
Age Category	20-25	26-30	31-40	40+	20-25	26-30	31-40	
<b>Reasons for Exercising</b>								
To improve my fitness	3	4	4	2	13	6	5	37
To stay healthy	3	3	4	2	10	6	5	33
To improve my appearance	3	1	2	0	9	4	3	22
To reduce stress	0	4	3	0	7	5	3	22
Because I enjoy it	0	2	3	1	8	6	2	22
To socialise	0	1	3	0	8	2	2	16
Other	0	0	0	0	0	0	1	1

Table 2. *Overview of participants' reasons for exercising*

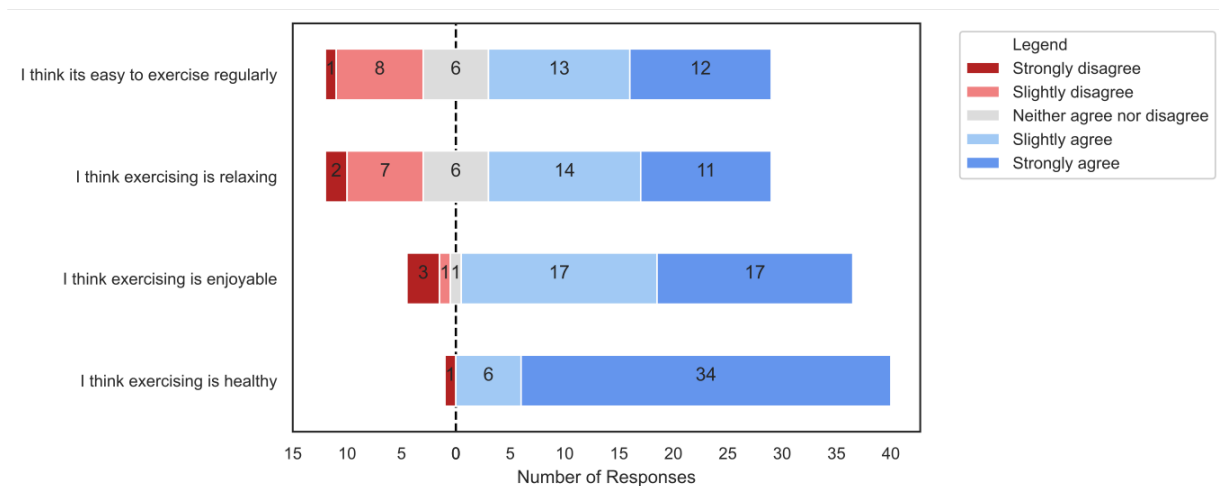


Figure 1. Overview of participant attitudes to exercise

### How does the amount of participants' exercise compare to the recommended weekly amount?

Days exercising during a typical week in Covid	Gender			Age				
	Female	Male	All	20-25	26-30	31-40	40+	All
0	2	2	4	1	2	0	1	4
1-2 days	5	6	11	7	4	0	0	11
3-4 days	5	16	21	7	7	7	0	21
5 days	1	1	2	2	0	0	0	2
More than 5 days	1	2	3	0	1	1	1	3
All	14	27	41	17	14	8	2	41

Table 3. Summary of participants' activity levels during Covid-19

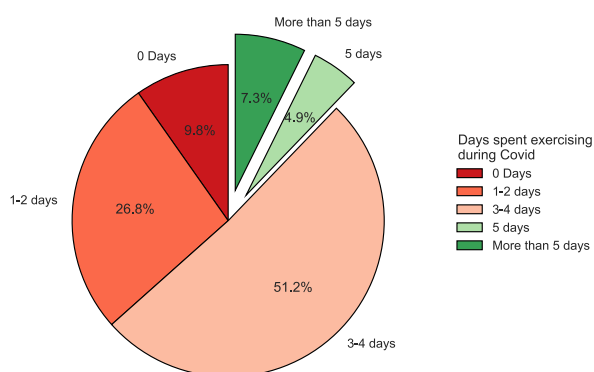


Figure 2. Relative frequency of participants who met the weekly recommended activity levels

Based on the WHO guidelines, adults should perform thirty minutes of physical activity, 5 days a week to ensure they receive the associated physiological benefits. This could be particularly important in helping the immune system fight Covid-19. Only 12.2% of the participants met the recommended guidelines, although 51.2% were still exercising regularly.

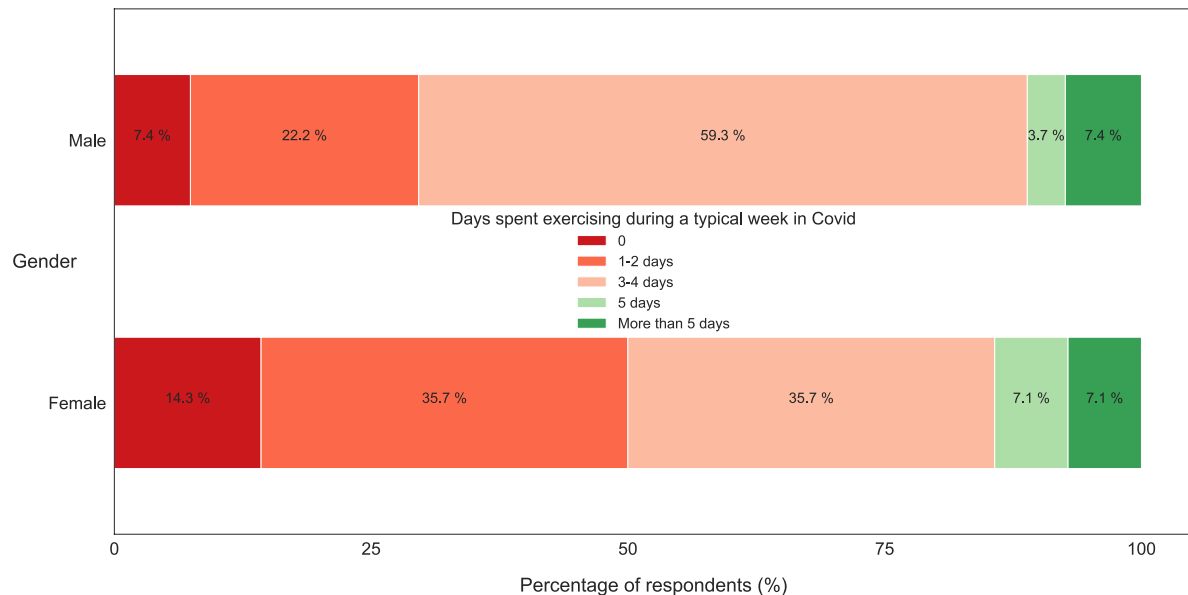


Figure 3. *Relative frequency of males/females that met the weekly recommended activity levels*

The proportion of participants that met the recommended activity levels was relatively similar, when comparing their gender and reasons for exercise. A higher proportion of females (14.2%) met the recommended guidelines when compared with males (11.1%), with only 2 female and 3 male participants meeting the recommended activity levels. Interestingly, participants reporting intrinsic reasons for exercising, such as enjoyment, represented the largest proportion (18.1%) who met the recommended activity levels; Omar and McAuley (1993) suggested people who are motivated by such reasons are more likely to pursue exercise when facing obstacles.

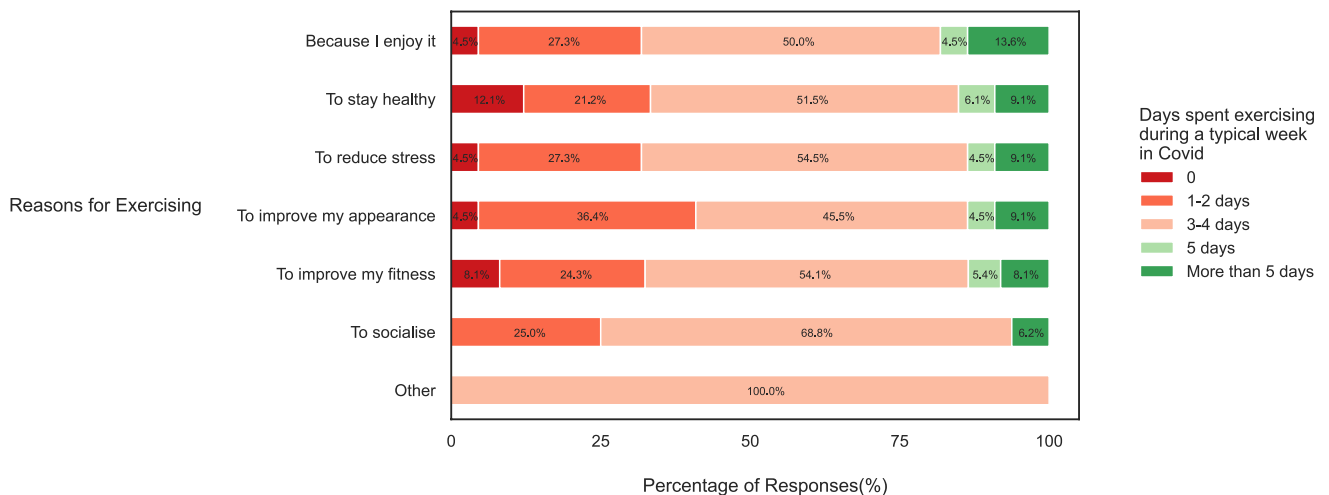


Figure 4. *A comparison of the relative frequency of participants that met the weekly recommended activity levels and their reasons for exercise*

## Are people exercising more or less than usual since Covid-19?

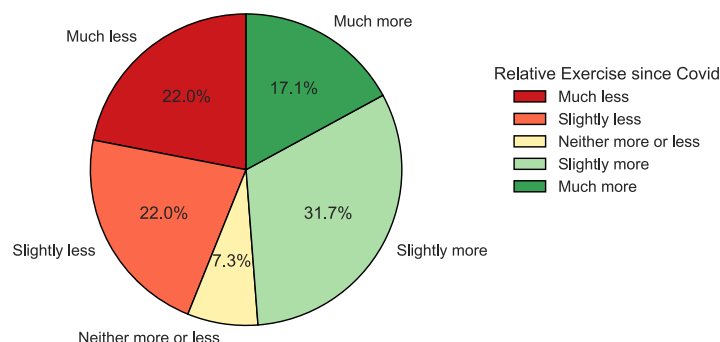


Figure 5. The relative distribution of participants' responses regarding the Impact of Covid-19 on their exercise levels.

Regarding exercise levels since the onset of Covid-19, 44% of the participants reported a decrease whereas 48% reported an increase, suggesting Covid-19 has both positively and negatively impacted exercise levels. The regional variation of lockdown measures and confusion surrounding nationwide guidelines may help explain the difference in results. Higher tier residents will have found their exercise options more limited; some may enjoy finding new ways to exercise, whilst others may miss their usual activities. Furthermore, fears of contracting or spreading Covid-19 may be elevated when living in higher risk areas, causing internal conflict as to whether to be 'healthy' and exercise or stay inside.



Figure 6. Comparison of the activity levels of the participants and the change in activity levels since Covid-19.

Despite 48.8% of the participants reporting increased exercise levels since Covid-19, only 12.2% met the WHO recommendations; this suggests that a large proportion of the Sample were failing to meet the WHO exercise guidelines, pre Covid-19. This is further illustrated in Figure 6. This may be explained by the lack of distinction between moderate and vigorous exercise in the survey question, leading to the participants underreporting their respective exercise volumes.

## How have people's types of exercise changed since Covid-19?

	Pre Covid			Post Covid		
Gender	Female	Male	Total	Female	Male	Total
Types of Exercise						
Walking	8	12	20	9	10	19
Team sport (e.g. Football, Rugby)	1	15	16	1	9	10
Gym (Weight training)	2	13	15	1	7	8
Gym (Exercise classes)	6	6	12	0	2	2
Running/Jogging	3	8	11	5	18	23
Exercising at home	3	2	5	9	17	26
Socially distance sports (e.g. Golf, Tennis)	1	4	5	1	4	5
Cycling	0	3	3	0	10	10
Other	1	1	2	2	4	6
Online Exercise classes at home (e.g. dance classes)	1	0	1	5	4	9

Table 4. Frequency table summarising the types of exercise performed Pre and Post Covid-19

Types of Exercise

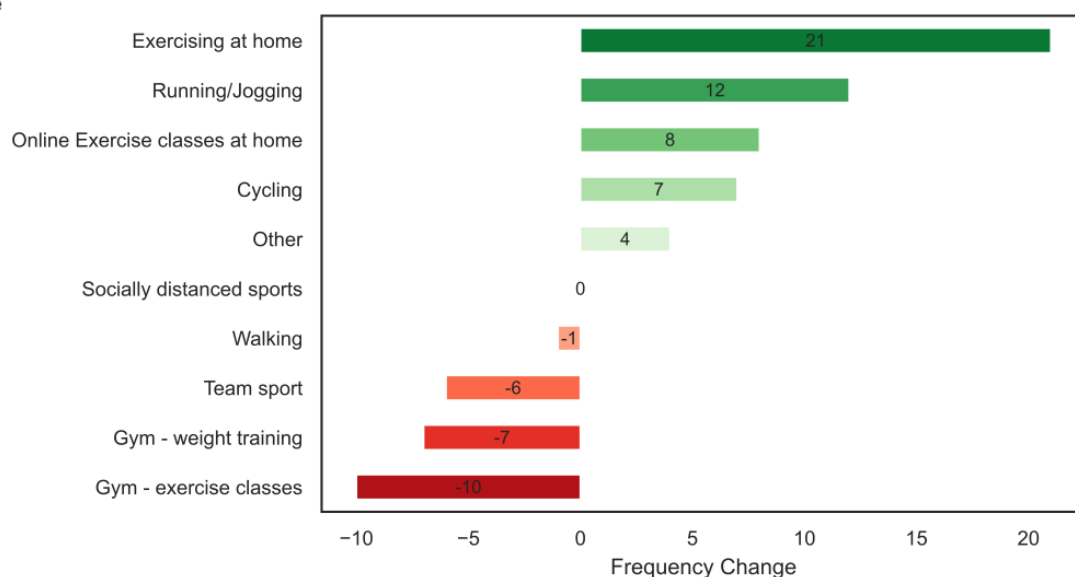


Figure 7. Frequency change in types of exercise since Covid-19.

Table 4 and Figure 7 show the most popular exercise methods prior to Covid-19 have reduced significantly, particularly those "close-proximity" types of exercise such as gym exercise classes and weight training and team sports (football and rugby, for example). The decrease in frequency of such exercises may be due to the limitation and closure of sporting facilities during Covid-19. Furthermore, such exercises were also the most popular forms of exercise with males, which could explain why a smaller proportion were found to meet the recommended activity levels.

Alternatively, people may be conscious of the risk of getting infected or infecting members of their household resulting in participants reporting a higher frequency of exercises that require minimal human contact during Covid-19, such as exercising at home and online exercise classes. Similarly, exercises that allow participants to regulate their proximity to others, such as running and cycling saw an increase in frequency during Covid-19. The need to adapt and change previously formed exercise habits may provide an explanation as to why 44% of the participants were exercising less during Covid-19.

Conversely, an increased exposure to new methods of exercise coupled with the limited exercise choices, may have encouraged people to try new forms of exercise and could help explain the 48% of participants who exercised more during Covid-19. Joe Wicks' was one of many fitness advocates who live-streamed online exercise classes getting 80 million view worldwide (Coronavirus: How Joe Wicks' fitness workouts 'changed my life', 2021).

### **What are the participants perceptions of facilitators and inhibitors to exercise during Covid-19?**

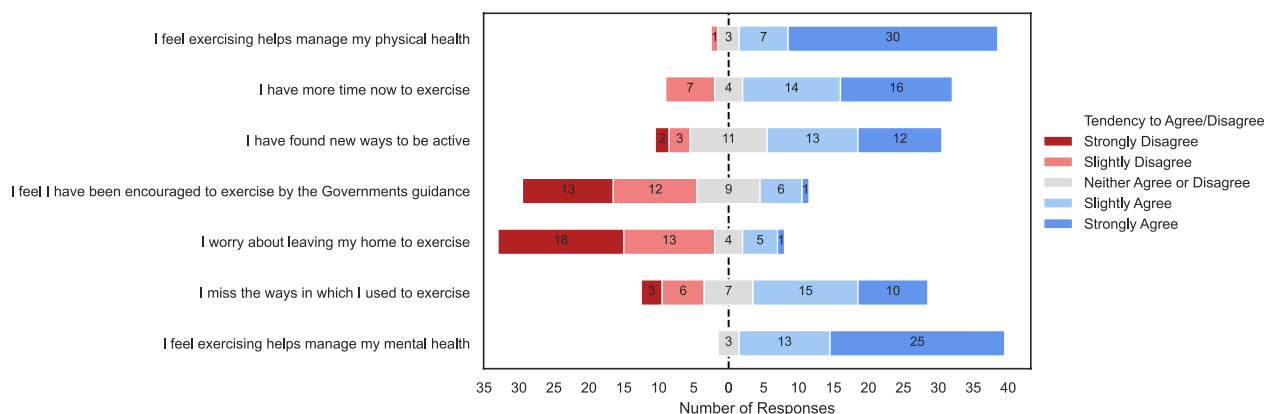


Figure 8. *Perceptions of the factors effecting exercise since the onset of Covid-19*

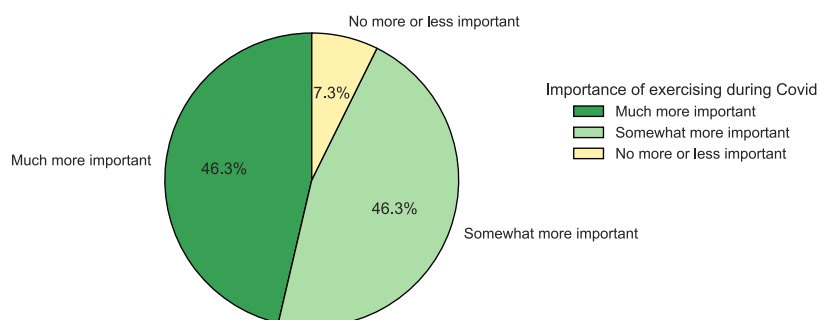


Figure 9. *Participants' perceptions on the importance of exercise during Covid-19*

Covid-19 has helped increase the awareness of the potential benefits of exercise, with 88% and 86% of participants viewing exercise as beneficial to mental and physical health, respectively. Additionally: 93% felt it was more important to exercise during Covid-19; 73% agreed they had more time to exercise; and 61% tended to disagree that the Government's guidance encouraged them to exercise. The Sample reflected a low risk age group (mean age = 28.87), which may explain why 75.7% of participants did not feel worried about leaving home.

	Average Agreement Score (1 = Strongly Disagree, 4=Strongly Agree)		
	Total Sample (n=41)	People who exercised more (n=20)	People who exercised less (n=18)
I feel exercising helps manage my physical health	3.49	3.4	3.35
I have more time now to exercise	2.93	3.15	2.45
I have found new ways to be active	2.32	2.4	1.85
I feel I have been encouraged to exercise by the Governments guidance	1.44	1.45	1.15
I worry about leaving my home to exercise	1.54	1.35	1.40
I miss the ways in which I used to exercise	2.44	2.20	2.55
I feel exercising helps manage my mental health	3.39	3.65	3.00

Table 5. *Summary of the participants average agreement score to each question surrounding factors effecting exercise.*

The largest differences in opinion were surrounding the participants missing the way they used to exercise, finding new ways to be active and having more time to exercise. Comparatively, people who reported exercising less tended to disagree more that they had found more time and new ways to exercise. The opposite was true for people who reported exercising more. These results indicate the unique conditions during Covid may have facilitated and inhibited individuals from exercising.

## **Conclusion:**

Only 11.2% of the Sample met the recommended guidelines, however the majority were exercising 3-4 days a week. Covid-19 appears to have had both a positive and negative impact on exercise levels, with 48% of the participants reported increases in activity and 44% reporting the opposite. Whether as a result of government restriction or increased social responsibility, finding creative ways to exercise individually and adapting exercise methods to allow for social distancing have been imperative to maintaining exercise levels during the pandemic.

Covid-19 has had a positive impact on increasing the awareness of the potential benefits of exercise, however, this has not translated into people exercising more. This is likely due to a combination of pre-existing and new inhibitors to exercise unique to Covid-19. People missing old activity habits and struggling to make newness appear to be inhibiting activity levels. Further clarity on the lockdown measures and (where possible) refinement of restrictions to allow for socially-distanced exercise variants could help the public proactively adapt their exercise patterns and should be Government priorities moving forwards.

Further research should focus on distinguishing the effect between pre-existing and new inhibitors on exercise levels. Additionally, focusing on the impact of Covid-19 on people from different tiers may help explain why people are exercising more or less. Furthermore, people's exercise levels could be more accurately measured by administering the same survey periodically during a lockdown.

Word count = 2000 without Appendix/References



## **Appendix**

### **References(368 Words)**

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