



The Relationship between Exercise and Happiness during the Covid-19 Lockdown

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Abstract

Exercising has significantly contributed to an increase in a person's happiness level. However, from early 2020 onwards, the world has seen an unprecedented, yet extremely crucial event, the spread of a lethal disease known as Covid-19, leaving a considerable number of people in despair. Although gyms have been shut and several lockdown measures have been announced to prevent the transmission of the virus, previous studies showed that the amount of time each person exercised has never before been this much. There is evidence indicating that a correlation between exercise and happiness existed, but what is left unknown is whether the correlation could be found during rare events such as the current global pandemic. Therefore, this research was conducted with the aim to investigate whether more time spent exercising still makes people happier in these difficult times. Our online questionnaires were delivered to participants, including both adults from various districts and teenagers from 3 different schools in Bangkok, the capital city of Thailand, via different social media platforms in order to find the relationship between exercise and levels of happiness during the Covid-19 lockdown. The results from 651 participants revealed that there was a positive correlation between the two variables, reinforcing our hypothesis that exercise has a direct correlation with people's levels of happiness. Some people have opted not to exercise these days, but our research, which showed that even a little exercise makes people happier, may be used as a guideline in bringing more people to exercise.

Keywords: Exercise, Happiness, Covid-19, Lockdown, Bangkok, Guideline

INTRODUCTION

Exercise has played an important role in improving an overall person's level of happiness, as not only does it increase endorphins in one's body, but it also produces various chemicals that make a person feel cheerful [1]. Despite these benefits, the majority of people do not meet the standard guideline, which recommends that each person should be physically active at least 4 hours a week [2]. Obesity rates have drastically risen over the recent years, and more people are getting unhealthier [3]. Nonetheless, as early 2020 approached, our world faced the catastrophic event that is Covid-19, which seemingly have detrimental effects on many facets of

life, but in fact according to the predicted model encouraged people who did not exercise much before the lockdown to exercise more and encourage people who already exercise frequently do continue to continue the habit [4]. In Thailand, more people work from home in order to keep themselves from the spread of the virus [5]. This gives them a considerable amount of time to exercise.

However, social distancing due to covid-19 has not always provided desirable results. There have been reports of increased death tolls [6], and people were

becoming bored of quarantine, and so more people are worried and less happy [7]. Since a correlation between exercise and happiness exists, it is not known whether the correlation could be applied in difficult circumstances, such as the global pandemic. Therefore, the purpose of this research is to investigate the correlation between exercise and happiness during the Covid-19 lockdown, as well as to provide useful information regarding exercise and levels of happiness. The hypothesis of this study is that “there is still a positive correlation between exercise and happiness even in times of difficulties”.

METHODS

Measurement

To gather the information on both levels of happiness and people's viewpoints on exercise during the Covid-19 lockdown, we modified several questions that have been published from various sources. The first source was a survey from a database titled “Undergraduate and graduate's behaviors towards physical activities at Srinakharinwirot University” [8], which highlights their perspectives on exercise; one of the statements is “I often find exercise to be an activity that can be easily done”. Another one was from the Oxford Happiness Questionnaire developed by Peter Hills and Michael Argyle which broadly measures the participant's happiness [9]. We altered some questions by including a range of time “during a Covid-19 lockdown” to make the questions more specific. For instance, we adjusted a statement from “I don't feel particularly pleased with the way I am” to “I felt particularly pleased with the way I was during the Covid-19 lockdown.” We also devised some questions based on problems associated with the isolation, such as “I could manage my anxiety during the Covid-19 lockdown.” Our questionnaire contained 19 items: 9 questions asked out people's happiness during the lockdown; the other 9 questions mainly focused on exercise. One additional question was about respondents' personal life, age, as we would divide our participants into 2 groups, namely teenagers and adults. Most of the questions were modified to five-point Likert scale, with choices ranging from strongly disagree to strongly agree, while a few questions were multiple choices, for example, asking the participants how many times a week they exercised during the Covid-19 lockdown. All questions underwent the index of item objective congruence (IOC) test, and some of which had been reviewed and updated according to 4

experts in order to increase the quality of our questions. The questionnaire was then sent to a pilot group consisting of 20 people, who enrolled at a similar institution to determine the internal reliability. We calculated the internal reliability using the Statistical Package for the Social Sciences (SPSS), and the result showed that the Cronbach's alpha (reliability value) was 0.87, which was more than an acceptable value of 0.7 [10]. Similarly, when tested with 651 participants, Cronbach's alpha value was 0.88.

Table 1: Internal reliability test with a pilot group (20 participants)

Number of participants	Number of questions used in calculations	Cronbach's alpha
20	18	0.88

Table 2: Internal reliability test with 651 participants

Number of participants	Number of questions used in calculations	Cronbach's alpha
651	18	0.87

Participants

In this study, the participants were categorized into 2 groups based on their ages. The first sample group was teenagers, aged between 13 and 19 years, from 3 different schools in Pathum Wan and Wang Thong Lang province, Bangkok, Thailand, whereas the other was a random sample group of adults who are 20 years old or older from several districts in Bangkok. This retrospective study was devised to examine the correlation between happiness and exercise during the Covid-19 lockdown using an online survey questionnaire, which consisted of 19 questions. Participants submitted responses on Google Forms distributed via different online platforms such as Line, Instagram, Facebook, and Twitter. Internal reliability test was verified by Cronbach alpha coefficient value from the Pilot study sample (consisting of 20 teenagers from various schools in Bangkok) via SPSS version 27 in order to maximize the reliance of the survey questionnaire.

Data analysis

In this study regarding the association of the two variables, exercise and reported „happiness“ of a person, participants were divided into 2 groups, teenagers and adults. Questions in this study’s questionnaire were adapted from different sources, including Oxford and Srinakharinwirot university, and divided into 3 parts: (1) mental health (levels of happiness), (2) exercise, and (3) participants’ demographics, ages. We used the SPSS to find the internal consistency of the questions and obtained the result of Cronbach’s alpha of 0.88 when tested with 651 participants,

which went beyond the acceptable value of 0.7 (Cortina, 1993). To determine the correlation between two variables, Pearson’s Correlation Coefficient was then calculated by the SPSS, and the confidence level of 99% ($p=0.01$) was acquired.

RESULTS

Of 651 responses, results indicated that exercise and levels of happiness were related. Our Pearson’s correlation analysis revealed that the two variables have a significant correlation - correlation coefficient, $r = 0.351^{**}$, providing evidence that there is a positive correlation between exercise and levels of happiness. This supported our initial alternative hypothesis, which stated that a correlation exists between the two variables.

Additionally, a test separating participants into 2 groups by their ages was also conducted using the student’s t-test, with the initial assumption that behaviors towards exercise and happiness among teenagers are different from those of adults. Results revealed that there is no significant difference in behavior towards exercising between teenagers and adults. The same analysis with happiness yielded similar results.

Table 3: two groups of participants in this study

Age group	Frequency	Percentage
Teenagers (13-19 years old)	203	31%
Adults (more than 20 years old)	448	69%
Total	651	100%

Pearson Correlation	0.353**
Sig. (2-tailed)	<0.01
Number of participants	651

Table 4: Pearson Correlation test

Topic	Age group	Number of participants	Mean	Standard Deviation
Exercise	Teenagers (13-19 years old)	203	2.9896	0.70113
	Adults (more than 20 years old)	448	3.2128	0.72312
Happiness	Teenagers (13-19 years old)	203	3.3339	0.84544
	Adults (more than 20 years old)	448	3.7272	0.75119

Table 5: Average values of two variables used in Pearson Correlation test

DISCUSSION

The survey questionnaire was distributed directly to 2 groups of age in order to demonstrate the correlation between happiness and exercise during Covid-19 lockdown. Our study showed that the frequency of participants’ physical activity significantly affects their level of happiness. Our data supported the initial alternative hypothesis and previous research about the structural relationship between exercise frequency,

social health, and happiness among 5094 middle-school and high-school students in South Korea [11]. The research states that exercise frequency is associated with healthy social relationships, which could lead to subjective happiness in adolescents. In addition, our findings were harmonized with another previous study, which investigates the effect of exercise on changes in the happiness level of 72 participants aged between 20 and 45 years [12]. According to this research, physical activity positively impacts on people's happiness, mental health, and satisfaction of life. Correspondingly, our statistical analysis indicated that more exercising time contributes to the significant increase in people's happiness, and it could reduce their stress and anxiety caused by this unexpected event.

It is undeniable that the Covid-19 pandemic could cause a financial crisis, which could be responsible for stress and anxiety among the majority of people. However, our results presented a high value of happiness level for both age groups, which is opposite to the idea above. This disparity may be due to one possible related factor. The reason for this is associated with the socioeconomic status of each participant, referring to the family's income. In this study, we analyzed their happiness level, regardless of the family income. The implication is that the number of participants in each socioeconomic rank cannot be illustrated accurately in this research. According to our results (Table 1), most of the sample population could belong to middle to upper classes which have salaried jobs and savings. Therefore, the financial problem may be negligible and may not contribute to a significant negative effect, which could explain their sustained happiness levels during the Covid-19 lockdown.

CONCLUSION

With an aim to investigate a relationship between exercise and happiness during the Covid-19 lockdown, our results indicated that there is a positive correlation between exercise and happiness. Moreover, behaviors of adults towards those two variables were virtually the same as those of teenagers, when analyzed separately. This further emphasizes that exercise is not just beneficial to a specific group of people, but rather to several groups. It could also increase people's happiness levels even in times of difficulties, such as during the global pandemic lockdown. Therefore, our research could be extrapolated to virtually everyone. At any time, everyone can exercise, as the more people do, the

happier they feel. Additionally, our findings may be useful as a guideline in encouraging people of any ages to exercise more, and the topic could be extended to both mental health and physical activity fields in the future.

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