

Increasing mental toughness through COVID-19 gymnastics in adult people

by Komarudin Komarudin

Submission date: 05-Dec-2022 02:57PM (UTC+0700)

Submission ID: 1971836209

File name: 2_Komarudin_editing.docx (177.42K)

Word count: 3711

Character count: 21146

Increasing mental toughness through COVID-19 gymnastics in adult people

Komarudin^{abcde} , Sandey Tantra Paramitha^{abcde} 
Muhammad Gilang Ramadhan^{acde*} , & Geraldi Novian^{bcde} 

Universitas Pendidikan Indonesia, Indonesia

Received 05 March 2022; Accepted 16 August 2022; Published 05 December 2022
Ed 2022; 7(3): 354-360

ABSTRACT

The danger of this virus has forced the government to implement various regulations to reduce the level of spread and infection, one of which is by staying at home. Staying at home and staying away from socialization that is usually done makes individuals get various mental problems which of course have an impact on the human condition itself, so it is important for individuals to still have mental toughness. In this study, the authors wanted to examine the effect of implementing COVID-19 gymnastics that had been made previously on mental toughness in adults people in Indonesia. The experimental method with a one-group pretest-posttest design was used in this study. COVID-19 gymnastics for 6 weeks was given to 150 subjects by professional gymnastics instructors. Before and after being given treatment, the subject filled out the Mental Toughness Inventory (MTI) which was prepared beforehand to obtain data, after which data analysis was carried out using SPSS Version 24. The results showed that there was a significant effect of COVID-19 gymnastics on increasing mental toughness in adults people in Indonesia. In addition, the COVID-19 gymnastics was proven to be effective in providing an increase in results between the pretest and the posttest by 3.6%. This study concludes that the application of COVID-19 gymnastics has a positive effect on mental toughness in adults people in Indonesia, so it can be an alternative activity to avoid various mental health problems, especially during a pandemic like this. The author suggests that every individual remains active in exercising even in situations and conditions that are full of limitations, one of which can be done by doing COVID-19 gymnastics.

Keywords: Adult people; covid-19; gymnastics; global pandemic; mental toughness



[https://doi.org/10.25299/sportarea.2022.vol7\(3\).9080](https://doi.org/10.25299/sportarea.2022.vol7(3).9080)

OPEN ACCESS



Copyright © 2022 Komarudin, Sandey Tantra Paramitha, Muhammad Gilang Ramadhan, Geraldi Novian

Corresponding Author: Komarudin, Department of Sport Coaching Education, Faculty of Sport and Health Education, Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia
Email: komarudin_pko@upi.edu

How to Cite: Komarudin., Pramitha, S. T., Ramadhan, M. G., & Novian, G. (2022). Increasing mental toughness through COVID-19 gymnastics in adult people. *Journal Sport Area*, 7(3), 354-360. [https://doi.org/10.25299/sportarea.2022.vol7\(3\).9080](https://doi.org/10.25299/sportarea.2022.vol7(3).9080)

Authors' Contribution: a – Study Design; b – Data Collection; c – Statistical Analysis; d – Manuscript Preparation; e – Funds Collection

INTRODUCTION

Since 2020, the COVID-19 virus outbreak has increasingly spread and began to enter Indonesia, thus making it a global pandemic that has an impact on various things that have never happened before in the 21st century (Solehati et al., 2021). This virus has a fairly high level of danger because of its rapid transmission and takes many lives. The danger of this virus forces the government to implement various regulations to reduce the level of spread and transmission, such as social distancing/physical distancing, work from home, a study from home, health protocols, and others (Wong et al., 2020). In particular, the author highlights the

policy of staying at home and people's daily routine (Passavanti et al., 2021). Being at home and away from socialization that is usually done makes individuals get various psychological disorders which of course have an impact on the individual's condition itself. Individuals need to readjust the activities and ways of socializing that they usually do. This invites the occurrence of various problems in everyday life. A study conducted in the Middle East and North Africa (MENA) region reported that 45%–62% of people felt horrified, worried, or helpless because of COVID-19, in addition, more than 40% reported increased stress from work and financial problems (Al Dhaheri et al., 2021).

In adults people, they will be faced more often in situations and conditions that require them to be psychologically strong, for example, such as the intensity of meeting family members, taking care of children online learning, cleaning the house more often, and various other activities that greatly affect psychological conditions (Syahputri et al., 2020). If the adult individual is not strong enough to deal with these things psychologically, it will be very possible for the conflict to occur, so it is very important for the individual to still have mental toughness. In simple terms, mental toughness can be defined as persistence and unshakable belief in some goals despite pressure or difficulties (Middleton et al., 2005; Middleton, 2007). This is in line with previous studies which have argued that negative life events, crises, challenges, and stressful situations are a large aspect of the human experience and are often unavoidable (Lin et al., 2017a). Other studies also suggest that over the years the problem of stress resistance has become a substantial and interesting subject not only for scientists but also for competitors, coaches, and psychologists (Przybylski, 2018).

This mental toughness is often only understood in the context of athletes, even though this mental toughness must be possessed by every individual, not only athletes (Gerber et al., 2013; Stamatis et al., 2020). Mentally tough individuals will have natural or developed psychological advantages that enable a person to be better at many things, in general, cope better than others with many demands and in particular, be more consistent and better than others at remaining determined, focused, confident, and in control under pressure (Tibbert, 2013). Studies show that mental toughness reduces the relationship between high stress and depressive symptoms with the interaction between stress and mental toughness explaining 2% of the variance in the adolescent sample and 10% of the variance in the young adult sample (Almasri et al., 2020). The results of previous studies have shown that mental toughness requires positive psychological resources that are important for academic and career success (Lin et al., 2017). Capacity mental toughness may represent the maximum possible level of mental toughness a specific individual can attain (trait) (Cooper et al., 2019).

Mental toughness is of great interest to individuals who are usually difficult to reach with health or medical interventions (Almasri et al., 2020). Mental toughness is defined by concepts such as coping effectively with pressure and adversity, recovering after failure, challenges, persisting and not giving up, competing with oneself and others, being unaffected or flexible in adverse situations, having a strong belief in controlling the future. They demonstrate improvement under pressure and possess superior mental skills (Bastug, 2018). In line with this, experts have reported that mental toughness can moderate stress, help regain balance after failure, and encourage mobilization (Zalewska et al., 2019). Various ways can be done to increase mental toughness in individuals, one of which is by remaining active in sports (Sartika et al., 2020; Tibbert, 2013).

In this study, the authors wanted to examine the effect of implementing COVID-19 gymnastics on mental toughness in adults people in Indonesia. The author believes that this research needs to be done because it can be an alternative solution for humans in situations and conditions like today. In contrast to previous studies that have studied mental toughness in trained individuals or athletes, this study focuses on adults who do not have an athlete background. The author sees that there are still no studies that examine the topic of this research, even though this problem is very closely related in Indonesia as described previously.

METHOD

The experimental method with a one-group pretest-posttest design was used in this study (Fraenkel et al., 2012). COVID-19 gymnastics treatment for 6 weeks (July-August 2021) with a frequency of 3 sessions/week (Bompa & Buzzichelli, 2018) was given to 150 research subjects consisting of 65 adult men and 85 women from various gymnastics clubs in Indonesia with an age of 31.4 ± 2.729 years. Subjects were selected using purposive sampling based on several considerations, namely age (25-40 years), marital status (married), and

daily activities (dominated by activities at home). This COVID-19 gymnastics is a standard gymnastics that has been made previously and given directly to the subject by a professional gymnastics instructor. Each session consisted of 15 minutes of active movement and was repeated three times with a rest interval of 2-3 minutes so that the total duration of active movement or treatment volume was 45 minutes with low to moderate intensity (Figure 1). Before and after being given treatment, the subject filled out the Mental Toughness Inventory (MTI) which had been prepared in advance to measure mental toughness by 36 item questions (Tibbert, 2013), after which data analysis was carried out with SPSS Version 24 using the t-test (Santoso, 2017).

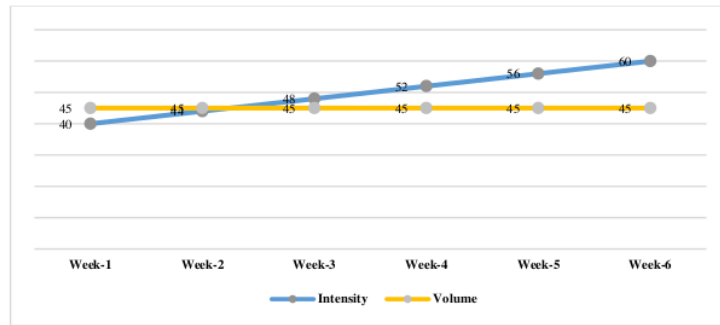


Figure 1. Volume and Intensity of COVID-19 Gymnastics

Figure 1 shows a graph of the volume and intensity of the COVID-19 gymnastics given during the treatment. It can be seen that the volume given every week is the same, which is 45 minutes, while the intensity given increases every week, starting from 40-60% according to the guidelines for sport medicine (Giriwijoyo, 2017).

RESULTS AND DISCUSSION

After processing and analyzing the data, the authors present the data in the form of tables and figures.

Table 1. Statistical Description

Test	Mean	Std. Deviation	Minimum	Maximum	Sum
Pre-	127.88	8.224	106	168	19182
Post-	138.23	7.815	127	166	20734

Table 1 shows a statistical description of the research data containing the mean, std. deviation, minimum, maximum, and sum. It can be seen that in the final test, the score obtained is greater than the initial test. This shows that the treatment provided provides an increase in mental toughness in adults people in Indonesia. Next, the writer presents the percentage in Figure 2.

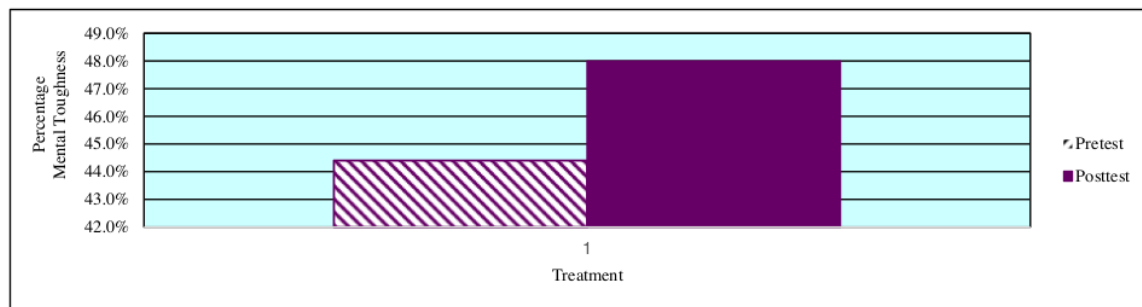


Figure 2. Percentage of Pretest and Posttest Results

Graph 2 shows the percentage of mental toughness pretest and posttest results. It can be seen that before being given treatment, the subject had a percentage value of mental toughness of 44.4%, but after being given the COVID-19 gymnastics treatment, the subject experienced a percentage increase of 3.6% to 48%. This shows that the COVID-19 gymnastics provided is proven to be able to increase the mental toughness of adults people in Indonesia. Next, the authors test the hypothesis.

Table 2. Hypothesis Testing

Pair	T Score	df	Sig. (2-tailed)
Pretest-Posttest	15.191	149	0.000

Table 2 shows the results of hypothesis testing using the Paired-Samples T-Test which previously had been tested for normality using the One-Sample Kolmogorov Smirnov-Test, the Asymp value was obtained. Sig. (2-tailed) of 0.200 > 0.05 then the data is normally distributed, so the Paired-Samples T-Test is feasible to be used as a hypothesis test. Based on the results of hypothesis testing, the t-score value of 15.191 was obtained with the value of Sig. (2-tailed) of 0.000 < 0.05, then H₀ is rejected, so it can be concluded that there is a significant effect of the implementation of COVID-19 gymnastics on mental toughness in adults people in Indonesia.

The COVID-19 gymnastics given in this study is an innovation made by the author to improve various aspects of life, especially during the current COVID-19 pandemic. In this study, the author specifically applies COVID-19 gymnastics to the mental toughness of adults people in Indonesia. We all know that we should stay active in physical activity or exercise in any situation and condition, because of the extraordinary benefits that will be obtained for our bodies. Studies reveal that regular physical activity and exercise can help you stay healthy, energetic, and independent as you age (Elmagd, 2016). From a broader perspective, physical activity and exercise can reduce stress and anxiety, increase happiness levels, increase self-confidence, increase brain power, sharpen memory and increase muscle and bone strength, and help in preventing and reducing heart disease, obesity, blood sugar fluctuations, cardiovascular disease, and cancer (Elmagd, 2016). At least, studies suggest we do physical activity for 150 minutes/week to get benefits for health status (Warburton & Bredin, 2017).

This study shows that COVID-19 gymnastics with volume and intensity manipulation can have a significant effect on mental toughness in adults people in Indonesia. This is a useful thing for us because, during the COVID-19 pandemic, which changes various habits in life as it is today, it makes a person more inactive or even tends to have sedentary behavior. This is because various activities that are usually carried out outside the home are now carried out indoors, including physical activities and sports (Wong et al., 2020). Some adults people may have exercised in the gym before the COVID-19 pandemic, but no longer do it because health safety in the gym is still not up to par. This is in line with previous studies which stated that the majority of gym participants never used sterile wipes or products before or after using gym equipment (61.6%), and 35.4% of gym staff did not use sterilizing materials distributed through fitness centers. and most of the gym participants had experienced an episode of skin infection or respiratory infection in the fitness center during the last 12 months (22.2%), while 80.8% were not aware of the tinea microbe that causes athlete's foot, and 65.7% of them take advantage of bathing in the gym after exercise (Almasri et al., 2020). This may be one of the reasons for not doing sports, in addition to the existing policies.

A person's inactivity in physical activity will be very dangerous because it is one of the main modifiable risk factors worldwide and all deaths (Lavie et al., 2019). Especially during the current COVID-19 pandemic, a person's inactivity cannot be left alone because it can be permanently embedded (Dunton et al., 2020). Promotion of physical activity and sports is needed in all age groups, races, and ethnicities, and both sexes to prevent various problems in life (Lavie et al., 2019). The COVID-19 gymnastics provided can be one solution to overcome this problem because it can make adults people who usually tend to be passive become more active, and stimulate levels of happiness in themselves as a result of doing this activity. This COVID-19 gymnastics makes adults people who may be experiencing stress, anxiety, worry, and various other psychological disorders become more mentally tough, thus making a person have better mental toughness.

This is evident from the increase in the percentage of 3.6% that occurred in adults people in Indonesia. If adults people have good mental toughness, then it will be very beneficial because it can operate as a source of stress resistance for individuals (Haghighi & Gerber, 2019), so a person needs to continue to develop his mental toughness (Stamatis et al., 2020). The results of the quantitative review conducted show that mental toughness is one of the most important attributes that sustain success (Cowden, 2017).

In addition to what has been mentioned above, this COVID-19 gymnastics affects the mental toughness of adults people in Indonesia because it is in line with the 4C's Model of Mental Toughness which includes control components (the ability to handle many things at once and remain influential rather than controlled), challenge (see potential threats as opportunities for personal growth and thrive in a changing environment), commitment (deeply involved with pursuing goals and striving to achieve them despite adversity), and confidence (ability to maintain self-confidence despite setbacks, and not be intimidated by others) (Crust & Clough, 2011; Kawabata et al., 2021; Zalewska et al., 2019). The benefits of the results of this study are also supported by previous studies showing that mental toughness reduces the relationship between high stress and depressive symptoms with the interaction between stress and mental toughness explaining 2% of the variance in the adolescent sample and 10% of the variance in the young adult sample (Almasri et al., 2020). Therefore, this COVID-19 gymnastics is very suitable for adults people in Indonesia, because it is easy to do and does not require special equipment, but still has tremendous benefits for people's lives, especially in the current pandemic which has a major impact on a person's psychology (Passavanti et al., 2021).

CONCLUSION

This study concludes that the application of COVID-19 gymnastics has a positive effect on mental toughness in adults people in Indonesia, so it can be an alternative activity to avoid various psychological health disorders, especially mental toughness, especially during a pandemic like this. The author suggests that every individual remains active in exercising even in situations and conditions that are full of limitations, one of which can be done by doing COVID-19 gymnastics. However, this study still has some limitations that can be improved in subsequent studies, such as the number and characteristics of the sample and the research design used. This can be a reference for future researchers.

ACKNOWLEDGEMENTS

The author would like to thank the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, as well as the Institute for Research and Community Service at the Universitas Pendidikan Indonesia for supporting the research and publication of this article.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

REFERENCES

- Al Dhaheri, A. S., Bataineh, M. F., Mohamad, M. N., Ajab, A., Al Marzouqi, A., Jarrar, A. H., Habib-Mourad, C., Jamous, D. O. A., Ali, H. I., Al Sabbah, H., Hasan, H., Stojanovska, L., Hashim, M., Elhameed, O. A. A., Obaid, R. R. S., ElFeky, S., Saleh, S. T., Osaili, T. M., & Ismail, L. C. (2021). Impact of COVID-19 on Mental Health and Quality of Life: Is there any Effect? A Crosssectional Study of the MENA Region. *PLoS ONE*, 16(3 March), 1–17. <https://doi.org/10.1371/journal.pone.0249107>
- Almasri, D., Noor, A., & Diri, R. (2020). Behavioral Changes in Gym Attending Due to COVID-19 Pandemic: A Descriptive Survey. *J Microsc Ultrastruct*, 8(4), 165–167. https://doi.org/10.4103/JMAU.JMAU_64_20
- Bastug, G. (2018). Investigation of Attention, Concentration and Mental Toughness Properties in Tennis, Table Tennis, and Badminton Athletes. *The Sport Journal*, 25, 1–7.

- Bompa, T. O., Buzzichelli, C. (2018). Periodization-6th Edition: Theory and Methodology of Training. In *Human Kinetics*. https://doi.org/10.1207/S15327051HCI1523_6
- Cooper, K. B., Wilson, M., & Jones, M. I. (2019). An Exploratory Case Study of Mental Toughness Variability and Potential Influencers over 30 Days. *Sports*, 7(7), 156. <https://doi.org/10.3390/sports7070156>
- Cowden, R. G. (2017). Mental Toughness and Success in Sport: A Review and Prospect. *The Open Sports Sciences Journal*, 10(1), 1–14. <https://doi.org/10.2174/1875399x01710010001>
- Crust, L., Clough, P. J. (2011). Developing Mental Toughness: From Research to Practice. *Journal of Sport Psychology in Action*, 2(1), 21–32. <https://doi.org/10.1080/21520704.2011.563436>
- Dunton, G. F., Do, B., Wang, S. D. (2020). Early Effects of the COVID-19 Pandemic on Physical Activity and Sedentary Behavior in Children Living in the U.S. *BMC Public Health*, 20(1), 1–13. <https://doi.org/10.1186/s12889-020-09429-3>
- Elmagd, M. A. (2016). Benefits, Need and Importance of Daily Exercise. *International Journal of Physical Education, Sports and Health*, 3(5), 22–27.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to Design and Evaluate Research in Education* (8th Ed.). Mc Graw Hill.
- Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Perry, J. L., Pühse, U., Elliot, C., Holsboer-Trachsler, E., & Brand, S. (2013). Are Adolescents With High Mental Toughness Levels more Resilient Against Stress? *Stress and Health*, 29(2), 164–171. <https://doi.org/https://doi.org/10.1002/smi.2447>
- Girwijoyo, H. Y. S. S. (2017). *Fisiologi Kerja dan Olahraga* (Pertama). PT. Raja Grafindo Persada.
- Haghighi, M., Gerber, M. (2019). Does Mental Toughness Buffer the Relationship between Perceived Stress, Depression, Burnout, Anxiety, and Sleep? *International Journal of Stress Management*, 26(3), 297–305. <https://doi.org/10.1037/str0000106>
- Kawabata, M., Pavey, T. G., & Coulter, T. J. (2021). Evolving the Validity of a Mental Toughness Measure: Refined versions of the Mental Toughness Questionnaire-48. *Stress and Health*, 37(2), 378–391. <https://doi.org/10.1002/smi.3004>
- Lavie, C. J., Ozemek, C., Carbone, S., Katzmarzyk, P. T., & Blair, S. N. (2019). Sedentary Behavior, Exercise, and Cardiovascular Health. *Circulation Research*, 124(5), 799–815. <https://doi.org/10.1161/CIRCRESAHA.118.312669>
- Lin, Y., Clough, P. J., Welch, J., & Papageorgiou, K. A. (2017). Individual Differences in Mental Toughness Associate with Academic Performance and Income. *Science Direct*, 113(7), 178–183. <https://doi.org/10.1016/j.paid.2017.03.039>
- Lin, Y., Mutz, J., Clough, P. J., & Papageorgiou, K. A. (2017a). Mental Toughness and Individual Differences in Learning, Educational and Work Performance, Psychological Well-Being, and Personality: A Systematic Review. *Frontiers Psychol*, 81345, 1–15. <https://doi.org/10.3389/fpsyg.2017.01345>
- Middleton, S C, Marsh, H. W., Martin, A. J., Richards, G. E., & Perry, C. (2005). Developing the Mental Toughness Inventory (MTI). *International Biennial SELF Research Conference*. University of Western Sydney.
- Middleton, S Cory. (2007). Mental Toughness: Conceptualisation and Measurement. *Thesis*. University of Western Sydney.
- Passavanti, M., Argentieri, A., Maria, D., Lou, B., Wijayaratna, K., Seyed, A., Mirhosseini, F., Wang, F., & Naseri, S. (2021). The Psychological Impact of COVID-19 and Restrictive Measures in the World. *Journal of Affective Disorders*, 283(3), 36–51. <https://doi.org/https://doi.org/10.1016/j.jad.2021.01.020>

- Przybylski, J. (2018). Mental Toughness in Sport Questionnaire-MTSQ. *Current Issues in Personality Psychology*, 6(1), 67–78. <https://doi.org/10.5114/cipp.2018.72199>
- Santoso, S. (2017). *Complete Guide to Mastering Statistics with SPSS 24*. PT. Elex Media Komputindo.
- Sartika, D., Berliana, B., Komarudin, K., Simbolon, M., Hamzah, A., & Astuti, P. (2020). Increasing The Mental Toughness through Match Simulations in a Basketball Game. *Proceedings of the 4th International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2019)*. 21, 148–151. <https://doi.org/10.2991/ahsr.k.200214.041>
- Solehati, T., Kosasih, C. E., Hermayanti, Y., & Mediani, H. S. (2021). The Psychological and Sleep-Related Impact of Coronavirus Disease 2019 (COVID-19): A Systematic Review. *16*(1), 65–74. <https://doi.org/10.21109/kesmas.v0i0.5037>
- Stamatis, A., Grandjean, P., Morgan, G., Padgett, R. N., Cowden, R., & Koutakis, P. (2020). Developing and Training Mental Toughness in Sport: A Systematic Review and Meta-Analysis of Observational Studies and Pre-Test and Post-Test Experiments. *BMJ Open Sport & Exercise Medicine*, 6(1), e000747. <https://doi.org/10.1136/bmjsem-2020-000747>
- Syahputri, V. N., Rahma, E. A., Setiyana, R., Diana, S., & Parlindungan, F. (2020). Online Learning Drawbacks during The COVID-19 Pandemic: A Psychological Perspective. *EnJourMe (English Journal of Merdeka): Culture, Language, and Teaching of English*, 5(2), 108–116. <https://doi.org/10.26905/enjourme.v5i2.5005>
- Tibbert, S. J. (2013). *Mental Toughness and Overtraining Behaviours*. Thesis. Victoria University.
- Warburton, D. E. R., Bredin, S. S. D. (2017). Health Benefits of Physical Activity: A Systematic Review of Current Systematic Reviews. *Current Opinion in Cardiology*, 32(5), 541–556. <https://doi.org/10.1097/HCO.0000000000000437>
- Wong, A. Y. Y., Ling, S. K. K., Louie, L. H. T., Law, G. Y. K., So, R. C. H., Lee, D. C. W., Yau, F. C. F., & Yung, P. S. H. (2020). Impact of the COVID-19 Pandemic on Sports and Exercise. *Asia-Pacific Journal of Sports Medicine, Arthroscopy, Rehabilitation and Technology*, 22, 39–44. <https://doi.org/10.1016/j.asmart.2020.07.006>
- Zalewska, A. M., Krzywosz-Rynkiewicz, B., Clough, P. J., & Dagnall, N. (2019). Mental Toughness Development Through Adolescence: Effects of Age Group and Community Size. *Social Behavior and Personality*, 47(1), 1-8. <https://doi.org/10.2224/sbp.7376>

Increasing mental toughness through COVID-19 gymnastics in adult people

ORIGINALITY REPORT

20%
SIMILARITY INDEX

17%
INTERNET SOURCES

5%
PUBLICATIONS

11%
STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

2%
★ Submitted to Fresno Pacific University
Student Paper

Exclude quotes Off
Exclude bibliography On

Exclude matches < 1%