

## LEVEL OF PHYSICAL ACTIVITY OF STUDENTS WITH AUTISM SPECTRUM DISORDER DURING THE COVID-19 PANDEMIC

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### Abstract

*In the case of a huge COVID19 pandemic in several countries, including Indonesia, the urgency of physical exercise for students with disabilities. The purpose of this study is to determine the physical activity level of students with ASD during the COVID-19 pandemic. Participants in this study The participants in this study were 17 students with autism spectrum disorder aged 8-14 years. This study uses descriptive quantitative research methods. The tool used is the Children's Physical Activity Questionnaire (PAQ-C) via Google Forms. The data analysis included quantitative descriptive statistics and analytical needs testing using the IBM SPSS 24 application. The results of the study showed that the physical activity of students with disabilities during the COVID19 pandemic was at most distributed in the low category of 9 students (50%). Sports activities during the Covid19 pandemic include sunbathing, walking, jogging, cycling, and strength training. Most sports activities are helpful to parents. This has an impact on the reduction of students' physical activity from the middle category to the low category. To prevent the spread of the Covid19 virus, respondents should maintain and increase physical activity, engage in light physical activity for at least 30 minutes a day, and maintain immunity by eating nutritious foods such as vitamins, fruits, vegetables, and healthy foods.*

**Key words:** ASD, physical activity, COVID-19 pandemic, disability, students

### Introduction

The virus, better known as coronavirus or COVID-19, is a problem in the world today (Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Demirci, et al., 2021; Chen et al., 2020; P. Purwanto, Lumintuarso, et al., 2021). The spread of COVID-19 that hit Indonesia and the world has an impact on every aspect of life, including education. The COVID-19 pandemic has had a major impact on all areas of life. The COVID-19 pandemic is certainly very influential in the world of education. Many countries, including Indonesia, have decided to close schools and universities (Burhaein, 2021; Mumpuniarti et al., 2021; Nurulfa et al., 2021).

The government of a country takes swift action by establishing policies to break the chain of spread of the coronavirus or COVID-19 (Burhaein, 2020b; Putra et al., 2021). Policies set by the government include curfews, telecommuting, social distancing, social restrictions, and others. To maximize government efforts, many need related sectors, especially the education sector, to carry out these policies well. The outbreak of COVID-19 that hit Indonesia and the world, has affected every aspect of life, including the world of education (P. Purwanto, Nopembri, et al., 2021; S. Purwanto & Burhaein, 2021; Yunus & Rezki, 2020).

To break the chain of spread of COVID-19, the Indonesian government has done something to

reduce the number. One of them is practiced in the Indonesian education system. In other words, students are encouraged to study at home. Allocate at home. Teaching and learning activities have been carried out with online systems and online systems since March 2020. The learning system is face-to-face, with learning facilities such as Google Meet, Zoom (Zoom), Google classroom, YouTube, whatsapp, TV and other social media (Burhaein et al., 2022; Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Lourenço, et al., 2021; Nanda et al., 2021). The same is true for students with disabilities and teachers. This means it can use support apps like WhatsApp, Zoom, and Google Classroom to facilitate problem delivery and online learning.

Judging from the content and subjects taught in schools during the epidemic, it can be divided into two categories. The first group is a group of subjects that focus on theory and a little practice, and the second group is a group that focuses on practice and lacks theory. These two groups are very different in the application of online learning (Boukrim et al., 2021; Burhaein, 2020a; Phytanza, Burhaein, Lourenço, et al., 2021). Adaptive physical education is learning with two types of theory and practice categories. Adaptive physical education is physical activity and educational activity on disability, where game activities or physical activities (such as sports),

both of which can be used in educational activities, almost always the experience of physical activity can be used to achieve education (Burhaein, Phytanza, et al., 2020; Burhaein, Tarigan, et al., 2020).

Although in pandemic situations like this students must keep their distance, wear masks and isolate themselves at home, but this will affect the active living behavior of students, such as playing football, basketball, futsal, badminton, running, swimming, and gymnastics that are usually done in school, now need to be made a "playground" at home to prevent the spread of COVID-19 (ACSM, 2020; Jannah et al., 2021; WHO, 2020a). Activities that can be done at home to maintain student health are walking in the yard, up and down stairs, strength training, flexibility, coordination, speed, cycling, aerobics and others.

Although these restrictions help lower infection rates, they are detrimental by limiting participation in normal daily activities, physical activity, travel, and access to various forms of exercise (e.g., closed gyms, social/physical distances without group meetings). On the other hand, the work that teachers will do for physical education at home is not necessarily fully carried out by students because of the limited facilities and infrastructure available and supervised. Teachers who do physical education are not always effective. This has the potential to encourage the emergence of lazy behaviors and eating disorders that can be bad for health, including an increased risk of chronic diseases such as high blood pressure, diabetes, obesity, and overweight, as well as the presence of other health complaints. According to a survey conducted in Morocco, more than a quarter of students are overweight or obese. During the COVID-19 restriction period, most students.

The COVID-19 pandemic has caused some controversy in the health sector, especially about social isolation measures (Alomari et al., 2020; Phytanza, Mumpuniarti, Burhaein, et al., 2021). It is widely regarded as one of the most effective strategies to reduce the spread of the virus. The physical education that participated in these discussions has identified important weaknesses related to access to basic health knowledge, including those related to epidemiology and health measures (Lynch, 2016). The emergence and global outbreak of the deadly virus poses a threat to the health and economy of the global community. The COVID-19 pandemic proved to be an unprecedented disaster, especially from a health, social and economic point of view.

According to a study conducted in Country-X, more than a quarter of students are overweight or obese due to lack of physical activity (Boukrim, et all 2021). During the Covid-19 isolation period, most students were malnourished, only one-third had significant physical activity, and most students were at risk for stress. About the effect of physical activity on research results Narici & De Boer, (2011) It was found that the musculoskeletal system in the absence

of physical activity was affected first. A dangerous condition with a loss of 12% muscle mass and loss of bone density and bone loss is estimated to be about 1% after 1 month. In addition, restrictions due to the COVID-19 outbreak cause the impact of reduced physical activity which also affects poor eating habits, resulting in a very high risk of degenerative diseases such as obesity, diabetes, cardiovascular pathology, and cardiovascular disease, and others.

In this case, researchers became urgent in conducting studies on physical activity, especially in children with disabilities. Therefore, the purpose of this study was to find out the level of physical activity of students with disabilities during the COVID19 pandemic.

## Methods

### Participants

Participants in the study were randomly selected. The number of participants was 17 students with autism spectrum disorder (ASD). Participants were students at school age in the age range of 9-15 years.

### Research design

The design of this research uses quantitative descriptive research methods (Fraenkel et al., 2012). The technique used is a survey on the physical activity of students with ASD.

### Materials and Apparatus

The instrument used is a child physical activity questionnaire (PAQ-C) collected through google forms. PAQ-C instruments have a validity of 0.55 and reliability of 0.86 (Kowalski et al., 2004). The purpose of using this questionnaire is to measure the level of variables that respondents consider most important, and those variables can be used as material to improve those important parts in the future. PAQ-C is a 7-day physical activity instrument. The PAQ instrument grid is as follows in Table 1.

Table 1. PAQ-C instrument grid.

No	Dimension	Number of Items
1	Type of Physical Activity	3
2	Frequency of Physical Activity	2
3	Duration of Physical Activity	2
4	Intensity of Physical Activity	2

### Procedures

At this stage what the researchers did was give a questionnaire about physical activity through google form. Google form is not filled out by respondents (students) but coordinated adaptive physical education (APE) teachers in schools. APE teachers provide supervision tasks to parents of students who will observe their child's physical activity for 7 days.

The results of observations for 7 days then became the answer material of 9 questions about physical activity posed by APE teachers.

### Data Analysis

Data analysis, in this study is as follows: (1) Test of analytical requirements i.e. normality test and homogeneity test. Calculation using the help of IBM SPSS software v.24, and; (2) Descriptive analysis by looking at the mean, standard deviation and level of physical activity category (5 categories). Physical activity data is obtained by filling out a PAQ-C questionnaire through Google Forms, designed to determine the level of physical activity of students with disabilities. The measurement results are divided into five categories, namely: (1) very high, (2) high, (3) medium, (4) low, (5) very low. Specific data on the results of filling out the PAQ-C questionnaire is shown in Table 2 below.

Table 2. PAQ-C Assessment Norms.

No	Items	Description
1	0.0 – 1.0	Very Low
2	1.1 – 2.0	Low
3	2.1 – 3.0	Medium
4	3.1 – 4.0	High
5	4.1 – 5.0	Very High

Source:Kowalski, Crocker, & Donen (2004)

## Results

### Test Analysis Requirements

The test of analytical requirements is the initial stage in the analysis of the results of physical activity data of students with disabilities during a pandemic. The test of the analytical requirements used in this study is the data normality test and the homogeneity test. First the normality test, used to see the normal distribution of data. The results of the normality test of each question item can be seen in Table 3.

Table 3. Data Normality Test Results

Tests of Normality			
Items	Shapiro-Wilk		
	Statistic	df	Sig.
1	0,757	17	0,101
2	0,854	17	0,113
3	0,812	17	0,303
4	0,806	17	0,202
5	0,872	17	0,224
6	0,830	17	0,505
7	0,569	17	0,100
8	0,880	17	0,132
9	0,779	17	0,101
a. Lilliefors Significance Correction			

Source: Primary Data, 2021

The study used the ShapiroWilk test for a normality test. The rule used to determine whether normal distribution is if the value of its significance is greater than 0.05 (significance > 0.05) then it is said to be normal. However, if the significance value is less than 0.05 (significance > 0.05) it is called abnormal. Based on the results of the normality test, the significance value of all items is more than > 0.05, it can be concluded that the data is normal distribution. Furthermore, the results of homogeneity testing can be seen in Table 4 below.

Table 4. Results of Research Data Homogeneity Test.

Test of Homogeneity of Variances				
Item	Levene Statistic	df1	df2	Sig.
1	0,137	1	14	0,849
2	0,500	1	14	0,491
3	0,880	1	14	0,364
4	2,465	1	14	0,139
5	0,300	1	14	1,000
6	3,155	1	14	0,197
7	15,000	1	14	0,100
8	0,203	1	14	0,660
9	7,933	1	14	0,414

Source: Primary Data, 2021

The study used the levene statistics test for homogeneity tests. The rule used to determine whether to distribute homogeneous is if the value of its significance is greater than 0.05 (significance > 0.05) then it is said to be homogeneous. However, if the significance value is less than 0.05 (significance > 0.05) it is called not homogeneous. Based on the results of the homogeneity test, the significance value of all grains is more than > 0.05, it can be concluded that the data is normal distribution.

### Quantitative Descriptive Analysis & Data Categorization

The results of research data that have gone through the test of analytical requirements are then analyzed descriptively.

At the descriptive analysis stage, the data is processed by looking at the mean, median, mode, standard deviation, minimum score, and maximum score. Descriptive statistical results of physical activity data of students with ASD during the COVID-19 pandemic can be seen as in table 5.

After the descriptive data analysis stage, then the data is classified based on the physical activity category of each student with disabilities. Data categorization is divided into five categories reviewed from the frequency and percentage of physical activity data of students with disabilities during the COVID-19 pandemic. Further categorizing the results of research data can be seen as in table 6.

Table 5. Descriptive Statistics Research Data.

No	Descriptive Statistics	Result
1.	Mean	2,51
2.	Median	2,00
3.	Mode	2,00
4.	Std. Deviation	0,72
5.	Minimum	1,00
6.	Maximum	3,00

Source: Primary Data, 2021

Table 6. Physical Activity Measurement Results during the Covid-19 Pandemic.

No	Category	Frekuensi	
		f	%
1	Very Low	2	12%
2	Low	9	53%
3	Medium	6	35%
4	High	0	0%
5	Very High	0	0%
Jumlah		17	100%

Source: Primary Data, 2021

Based on table 6 it is known that from the results of measurements of physical activity students disabilities with a total number of 17 students (100%) then entered according to their respective categories still. The data categorization results found that there was 2 student (12%) in the very low physical activity category, 9 students (53%) in the low category, 6 students (35%) in the moderate category, 0 students (0%) in the high category and 0 students (0%) in the very high category. It can be described that the majority of data as many as 53% of students were stabilized during the COVID-19 pandemic to have low physical activity.

## Discussion

According to the results of this study, physical activity / exercise has been shown to have tremendous health benefits, including reducing the risk of death from heart disease, stroke, type 2 diabetes, colon and breast cancer, high blood pressure and osteoporosis (Burhaein, 2017a; Piercy et al., 2018; Vuijk et al., 2010).

Regular physical activity is also essential for the health of muscles, bones, and joints, reduces symptoms of depression and anxiety, improves mood and improves an individual's physical ability to perform daily activities. Through physical exercise, you can help control health care costs and maintain a high quality of life in later years (Burhaein, 2017b; Phytanza, Burhaein, & Pavlovic, 2021; WHO, 2018). Therefore, it cannot be denied that physical activity plays an important role in the development and improvement of the physical health and fitness of individuals at various ages.

This means that there must be several factors that can motivate to do physical activity regularly, no need for activities that are too complex, enough

moderate or light activity. The easiest way to boost immunity is to do physical activity or exercise, as well as regular rest and sleep (Blair et al., 2018). Physical activity has a link to the physical fitness of a person, especially students with disabilities.

Physical freshness is a person's ability to perform daily activities easily and without experiencing significant fatigue and still have energy reserves for other activities. Physical fitness is very important for everyone's life, especially in the growth of every student with ASD. Understanding physical freshness is very important here, so that everyone can better carry out activities, tasks and obligations, especially learning activities and sports activities in school, without causing fatigue, injury or illness.

Fitness is very useful for daily activities. Students with disabilities are certainly no exception, they are generally different from other students, because children have certain obstacles that will affect their physical condition. Students with ASD are people with different characteristics than others in general (Phytanza & Burhaein, 2019; Pramantik & Burhaein, 2019). In particular, the physical, intellectual and emotional characteristics of students with ASD are lower or higher than normal children of the same age, or exceed the normal standards applicable in society. Therefore, it is difficult for them to succeed in social, personal and educational activities.

Many of the activities missed by students with ASD during the COVID-19 pandemic can not only change children's unhealthy lifestyles, but can also become obese (obesity due to lack of activity). In addition, the child's nutritional intake is insufficient for physical activity. It is necessary to increase school sports activities, specialized training for students to acquire complex skills (Alomari et al., 2020; WHO, 2020b). Adequate activity or exercise can improve the work of the heart, blood circulation and lungs, resulting in changes, so that the state of the immune system (especially the heart) develops in the right direction. In addition to physical activity, parental support is also needed to help athletic development and improve fitness. Therefore, to improve physical fitness needs to be improved the principle of exercise, namely the process of change in a better direction, including improved physical fitness, physical function capacity, and psychic qualities. The more physical activity that students with ASD do every day, the better the fitness of students with ASD.

## Conclusions

Based on research that has been done it can be concluded that the level of physical activity of students with disabilities during the pandemic is mostly in the low category. The type of physical activity that is often done by students with disabilities during the COVID-19 pandemic is sunbathing, walking, jogging, cycling, and physical activity the most is helping parents. This data shows that disabled students are less actively engaged during

the COVID-19 pandemic, resulting in a decrease in the physical activity of disabled students who are at risk of physical health and fitness problems. Based on these findings, the authors provided advice on more in-depth research on adaptive physical education learning for students with disabilities during the COVID-19 pandemic. Research with widespread participants will improve the quality of the findings later.

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#### Conflict of Interests

Researchers said there was no conflict of interest in the study. Researchers said there was no conflict of interest in the study.

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## References

- ACSM. (2020). *Staying Active During the Coronavirus Pandemic*. <https://www.acsm.org/read-research/newsroom/news-releases/news-detail/2020/03/16/staying-physically-active-during-covid-19-pandemic>
- Alomari, M. A., Khabour, O. F., & Alzoubi, K. H. (2020). Changes in physical activity and sedentary behavior amid confinement: The bksq-covid-19 project. *Risk Management and Healthcare Policy*, 13(1), 1757–1764. <https://doi.org/10.2147/RMHP.S268320>
- Blair, S. N., Lamonte, M. J., & Nichaman, M. Z. (2018). The evolution of physical activity recommendations: how much is. *American Journal Clinical Nutrition*, 79(5), 913–920. <https://doi.org/10.1093/ajcn/79.5.913S>
- Boukrim, M., Obtel, M., Kasouati, J., Achbani, A., & Razine, R. (2021). COVID-19 and confinement: Effect on weight load, physical activity and eating behavior of higher education students in southern Morocco. *Annals of Global Health*, 87(1), 1–11. <https://doi.org/10.5334/aogh.3144>
- Burhaein, E. (2017a). Aktivitas Fisik Olahraga untuk Pertumbuhan dan Perkembangan Siswa SD. *Indonesian Journal of Primary Education*, 1(1), 51–58. <https://doi.org/10.17509/ijpe.v1i1.7497>
- Burhaein, E. (2017b). Aktivitas Permainan Tradisional Berbasis Neurosainslearning Sebagai Pendidikan Karakter Bagi Anak Tunalaras. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*, 3(1), 55. [https://doi.org/10.29407/js\\_unpgri.v3i1.580](https://doi.org/10.29407/js_unpgri.v3i1.580)
- Burhaein, E. (2020a). Bagaimana Pendidikan Jasmani Adaptif di Era New Normal. In *Bunga Rampai Strategi, Proses, Evaluasi, dan Model Pembelajaran Pendidikan Jasmani, Olahraga, dan Kesehatan (PJOK) pada Era Pandemi Covid-19*. UNESA University Press.
- Burhaein, E. (2020b). Pembelajaran dalam Pandemi COVID-19: Mengapa Pendidikan Jasmani Adaptif Penting untuk Siswa Disabilitas di Sekolah Luar Biasa. In *Disrupsi Strategi Pembelajaran Olahraga: Serta Tantangan dalam Menghadapi New Normal selama masapandemi Covid-19* (pp. 187–196). Akademia Pustaka.
- Burhaein, E. (2021). Aktifitas Fisik, Pendidikan Jasmani Adaptif, dan COVID-19. In *Akselerasi Berpikir Ekstraordinari Merdeka Belajar Pendidikan Jasmani dan Olahraga era Pandemi COVID-19* (1st ed.). Akademia Pustaka.
- Burhaein, E., Phytanza, D. T. P., & Demirci, N. (2020). The development and validation of a revised Friendship Activity Scale and Adjective Checklist for use in the Indonesian Unified Sports program. *International Sports Studies*, 42(e), 18–28. <https://doi.org/10.30819/iss.42-e.03>
- Burhaein, E., Tarigan, B., Budiana, D., Hendrayana, Y., & Phytanza, D. T. P. (2022). Profile of changes in adaptive physical education learning during the Covid-19 pandemic. In *Innovation on Education and Social Sciences* (1st ed., pp. 1–10). Routledge. <https://doi.org/10.1201/9781003265061-3>
- Burhaein, E., Tarigan, B., Budiana, D., Hendrayana, Y., Phytanza, D. T. P., Demirci, N., Fradelos, E. C., Lourenço, C., & Nikšić, E. (2021). Instrument Physical Activity Questionnaire-Disability (IPAQ-D) Observe Test for Disability during COVID-19: Study of Validity and Reliability in 5 Countries. *Sport Science*, 15(1), 13–20. <http://www.sposci.com/PDFS/BR1501/04 CL 02 EB.pdf>
- Burhaein, E., Tarigan, B., Budiana, D., Hendrayana, Y., Phytanza, D. T. P., Lourenço, C., Permana, D., & Nuruldani, G. (2021). Dimensions in The Learning Implementation and Strategies of Adapted Physical Education for Children with Special Needs during the COVID-19 Pandemic: A Literature Review & Grounded Theory. *Sport Science*, 15(1).
- Burhaein, E., Tarigan, B., & Phytanza, D. T. P. (2020). The experience and understanding of the K-13 curriculum implementation of Indonesian teachers of Adapted Physical Education (APE). *International Sports Studies*, 42(e), 29–42. <https://doi.org/10.30819/iss.42-e.04>
- Chen, P., Mao, L., Nassis, G. P., Harmer, P., Ainsworth, B. E., & Li, F. (2020). Coronavirus disease (COVID-19): The need to maintain regular physical activity while taking precautions. *Journal of Sport and Health Science*, 9(2), 103–104. <https://doi.org/10.1016/j.jshs.2020.02.001>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education*. Mc Graw Hill.
- Jannah, A. M., Kushartanti, B. W., Rahman, A., Burhaein, E., & Phytanza, D. T. P. (2021). Development of Hockey Game-Basef Recovery Model. *Sport Science*, 15(1).
- Kowalski, K. C., Crocker, P. R. E., & Donen, R. M. (2004). *The Physical Activity Questionnaire for Older Children ( PAQ-C ) and Adolescents ( PAQ-A ) Manual* (Issue August). College of Kinesiology, University of Saskatchewan.
- Lynch, T. (2016). United Nations Sustainable Development Goals: Promoting health and well-being through physical United Nations Sustainable Development Goals: Promoting health and well-being through physical education partnerships. *Cogent Education*, 3(1), 1–15. <https://doi.org/10.1080/2331186X.2016.1188469>
- Mumpuniarti, M., Burhaein, E., & Phytanza, D. T. P. (2021). Phenomenology Study on The Measurement and Availability of Psychosocial Instruments Based on Video Observations in The Unified Sports Program for Children With Intellectual Disabilities in Indonesia. *Sport Science*, 15(1), 48–56. <http://www.sposci.com/PDFS/BR1501/04 CL 07 MM.pdf>
- Nanda, F. A., Novriansyah, N., Nugroho, M. D., Fajaruddin, S., Utama, M. B. R., Burhaein, E., & Phytanza, D. T. P. (2021). Psychological Skills of Basketball Athletes by Perspektive Gender: Study Indonesian Athletes in Asian Games XVIII. *Sport Science*, 15(1).
- Narici, M. V., & De Boer, M. D. (2011). Disuse of the musculo-skeletal system in space and on earth. *European Journal of*

- Applied Physiology*, 111(3), 403–420. <https://doi.org/10.1007/s00421-010-1556-x>
- Nurulfa, R., Motto, C. A., Dlis, F., Tangkudung, J., Lubis, J., & Junaidi, J. (2021). Physical Education Survey during the COVID-19 Pandemic in Eastern Indonesia. *International Journal of Human Movement and Sports Sciences*, 9(4), 668–675. <https://doi.org/10.13189/saj.2021.090410>
- Phytanza, D. T. P., & Burhaein, E. (2019). Aquatic activities as play therapy children autism spectrum disorder. *International Journal of Disabilities Sports and Health Sciences*, 2(2), 64–71. <https://doi.org/10.33438/ijdshs.652086>
- Phytanza, D. T. P., Burhaein, E., Lourenço, C. C. V., Irawan, Y. F., Sutopo, W. G., & Saleh, M. (2021). Profile of Physical Condition of Indonesia Intellectually Disabled Badminton Athletes during The COVID-19 Pandemic. *Sport Science*, 15(1).
- Phytanza, D. T. P., Burhaein, E., & Pavlovic, R. (2021). Gross Motor Skills Levels in Children with Autism Spectrum Disorder during the COVID-19 Pandemic. *International Journal of Human Movement and Sports Sciences*, 9(4), 738–745. <https://doi.org/10.13189/saj.2021.090418>
- Phytanza, D. T. P., Mumpuniarti, M., Burhaein, E., Demirci, N., Parmadi, M., & Azizah, A. R. (2021). Floortime Approach: Can It Improve The Learning Outcomes of Side-Rolling Exercises for Autism Spectrum Disorder Students? *Sport Science*, 15(1).
- Piercy, K. L., Troiano, R. P., Ballard, R. M., Carlson, S. A., Fulton, J. E., Galuska, D. A., George, S. M., & Olson, R. D. (2018). The physical activity guidelines for Americans. *JAMA - Journal of the American Medical Association*, 320(19), 2020–2028. <https://doi.org/10.1001/jama.2018.14854>
- Pramantik, I. A. D., & Burhaein, E. (2019). A Floor Time Approach to Improve Learning Outcomes of the Body Roll to the Side in Adaptive Physical Education Learning : Classroom Action Research Study on Two Cerebral Palsy Students. *International Journal of Disabilities Sports and Health Sciences*, 2(2), 45–53. <https://doi.org/10.33438/ijdshs.652061>
- Purwanto, P., Lumintuarso, R., & Burhaein, E. (2021). Impact of Running Techniques through the Sprint Ability in Athletes during the COVID-19 Pandemic. *International Journal of Human Movement and Sports Sciences*, 9(4), 717–724. <https://doi.org/10.13189/saj.2021.090416>
- Purwanto, P., Nopembri, S., Burhaein, E., & Phytanza, D. T. P. (2021). Evaluation of The Venue Management Program of The National Sports Week (PON) XVII of Riau Province, Indonesia. *Sport Science*, 15(1), 86–96. <http://www.sposci.com/PDFS/BR1501/04 CL 13 PP.pdf>
- Purwanto, S., & Burhaein, E. (2021). The Sports Development Program at the Indonesia Karate Sport Federation (FORKI) in The DIY Province of Indonesia. *Sport Science*, 15(1), 77–85. <http://www.sposci.com/PDFS/BR1501/04 CL 12 SP.pdf>
- Putra, Y. M., Purwanto, S., & Burhaein, E. (2021). Effect of Limb Muscle Power Training with Leaps on Athlete's Speed during the COVID-19 Pandemic. *International Journal of Human Movement and Sports Sciences*, 9(3), 461–465. <https://doi.org/10.13189/saj.2021.090310>
- Vuijk, P. J., Hartman, E., Scherder, E., & Visscher, C. (2010). Motor performance of children with mild intellectual disability and borderline intellectual functioning. *Journal of Intellectual Disability Research*, 54(11), 955–965. <https://doi.org/10.1111/j.1365-2788.2010.01318.x>
- WHO. (2018). *Global action plan on physical activity 2018-2030: More active people for a healthier world*. World Health Organization. <http://apps.who.int/iris/bitstream/handle/10665/272722/9789241514187-eng.pdf>
- WHO. (2020a). *Be Active during COVID-19*. <https://www.who.int/news-room/q-a-detail/be-active-during-covid-19>
- WHO. (2020b). *Disability considerations during the COVID-19 outbreak*. World Health Organization. <https://apps.who.int/iris/bitstream/handle/10665/332015/WHO-2019-nCov-Disability-2020.1-eng.pdf>
- Yunus, N. R., & Rezki, A. (2020). Kebijakan Pemberlakuan Lock Down Sebagai Antisipasi Penyebaran Corona Virus Covid-19. *SALAM: Jurnal Sosial Dan Budaya Syar-I*, 7(3). <https://doi.org/10.15408/sjsbs.v7i3.15083>

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