

Spiritual preparation as a mediator in the relationship between daily activity and football knowledge among Indonesian students

La preparación espiritual como mediador en la relación entre la actividad diaria y el conocimiento del fútbol entre los estudiantes indonesios

*Nurwahidin Hakim, *Iman Sulaiman, *Samsudin Samsudin, *Ika Novitaria Marani, **Rasyidah Jalil, ***Dery Rimasas, ****Fatiha Khoirotunnisa Elfahmi, *Arrahman, *Eko Bagus Fahrizqi
*Universitas Negeri Jakarta (Indonesia), **Universitas Muhammadiyah Palopo (Indonesia), ***Universitas Pendidikan Indonesia (Indonesia), ****Yayasan Pendidikan Rausan Fikri (Indonesia)

Abstract. A lifestyle characterized by imbalance in daily activities can significantly detrimentally affect physical health and cognitive performance. Despite this, students often overlook the importance of maintaining balance, neglecting aspects such as quality sleep, nutrition, and physical activity. However, individuals' daily activities can impact both their spiritual preparedness and knowledge. This research aims to investigate the influence of daily activity on the spiritual preparedness and knowledge about football of Indonesian sports students. Hypothesis testing was conducted utilizing path analysis, involving 204 respondents. Bootstrapping techniques were applied to analyze 500 data points. The findings indicate that daily lifestyle, as measured by daily activity, significantly influences the spiritual preparedness and knowledge of sports students. Notably, spiritual preparedness emerges as a mediator in the relationship between daily activity and knowledge, highlighting its crucial role. The study underscores the importance of fostering healthy lifestyle habits, including spiritual dimensions, among sports students. Recommendations emphasize the need for interventions aimed at enhancing awareness of the interconnectedness between daily activities, spiritual preparedness, and knowledge, thus contributing positively to the well-being of sports students within the collegiate environment.

Keywords: daily activity, football, knowledge, spiritual preparation, student

Resumen. Un estilo de vida caracterizado por un desequilibrio en las actividades diarias puede afectar significativa y negativamente la salud física y el desempeño cognitivo. A pesar de esto, los estudiantes a menudo pasan por alto la importancia de mantener el equilibrio, descuidando aspectos como la calidad del sueño, la nutrición y la actividad física. Sin embargo, las actividades diarias de los individuos pueden impactar tanto su preparación espiritual como su conocimiento. Esta investigación tiene como objetivo investigar la influencia de la actividad diaria en la preparación espiritual y el conocimiento sobre el fútbol de los estudiantes de deportes indonesios. Se realizaron pruebas de hipótesis utilizando análisis de ruta, con la participación de 204 encuestados. Se aplicaron técnicas de remuestreo para analizar 500 puntos de datos. Los hallazgos indican que el estilo de vida diario, medido por la actividad diaria, influye significativamente en la preparación espiritual y el conocimiento de los estudiantes de deportes. Notablemente, la preparación espiritual surge como un mediador en la relación entre la actividad diaria y el conocimiento, destacando su papel crucial. El estudio subraya la importancia de fomentar hábitos de vida saludables, incluidas las dimensiones espirituales, entre los estudiantes de deportes. Las recomendaciones enfatizan la necesidad de intervenciones orientadas a aumentar la conciencia sobre la interconexión entre las actividades diarias, la preparación espiritual y el conocimiento, contribuyendo así positivamente al bienestar de los estudiantes de deportes dentro del entorno universitario.

Palabras clave: actividad diaria, fútbol, conocimiento, preparación espiritual, estudiante

Fecha recepción: 23-04-24. Fecha de aceptación: 07-06-24

Nurwahidin Hakim

Nurwahidin_9904922012@mhs.unj.ac.id

Introduction

Physical fitness serves as a vital indicator of overall health, closely intertwined with quality of life (Henriques et al., 2020; Alvarez et al., 2019). It encompasses various facets including cardiorespiratory endurance, muscular strength, flexibility, and overall body composition, all of which significantly influence both physical and mental well-being (Ito et al., 2020; Long et al., 2023). Optimal physical fitness not only enables individuals to perform daily tasks efficiently without undue fatigue but also enhances endurance and strength, thereby supporting cognitive functions crucial for academic achievement (Rodriguez et al., 2020).

Activity levels, sleep duration, and other daily factors play pivotal roles in maintaining physical fitness and consequently affect an individual's quality of life (Ito et al., 2020). Research findings from the Kurious-Katadata Insight Center (KIC) survey indicate that Indonesians typically

sleep for 4-6 hours nightly (Annur, 2023), while research by Albahtiti et al. (2020) reveals that students in the United States sleep for less than 7 hours on average. This is noteworthy considering the Ministry of Health's recommendation of 7-8 hours of daily sleep for individuals aged 18-40 years (Annur, 2023).

The disparity between recommended sleep durations and actual sleep practices, particularly prevalent among college students, can significantly undermine physical health, mood, and cognitive performance (Ferrie et al., 2011). Moreover, daily physical activities play a crucial role in enhancing physical fitness (Chen et al., 2018; Perez et al., 2018). Sedentary lifestyles, characterized by a lack of exercise, are inversely associated with cardiorespiratory fitness (Kulinski et al., 2014). Standard recommendations advocate for 150 minutes of moderate aerobic activity weekly or 75 minutes of vigorous activity for adults, underscoring the importance of regular physical exercise in maintaining physical health (Yang, 2019). Research

conducted by Ristanto et al. (2022) reveals a significant correlation between physical fitness, as indicated by VO2MAX, and both sleep quality and physical exercise. These findings underscore the intricate interplay between sleep patterns, physical activity, and their collective impact on an individual's physical and cognitive capacities (Shahzadi & Ijaz, 2014). Therefore, endeavors aimed at enhancing health and fitness should not only address sleep patterns but also advocate for an active lifestyle (Ristanto et al., 2022). Additionally, the allocation of time for lectures and coursework emerges as a pivotal factor influencing physical fitness, highlighting the importance of considering academic commitments in student lifestyle interventions (Ristanto et al., 2022). The relationship between physical fitness, autonomic functional abilities, and cognitive performance during lecture activities underscores the significance of maintaining physical fitness as a fundamental component of student lifestyles, directly influencing their health and academic achievements (Sampaio et al., 2020).

Thus, comprehending and modifying sleep patterns and daily activities are imperative in endeavors to preserve and enhance physical fitness and overall well-being (Wang, 2019). This study accentuates the significance of effectively managing sleep patterns to bolster student well-being, particularly amidst rigorous academic demands. Furthermore, it explores the impact of daily activity on the spiritual preparedness and knowledge of Indonesian sports students. Investigating how sports-related activities shape students' spiritual dimensions and contribute to their knowledge acquisition elucidates the intricate relationship between daily activity, spiritual preparedness, and academic proficiency, offering valuable insights into the multifaceted role of sports students in higher education.

Physical Fitness

Physical fitness encompasses an optimal body condition, comprising crucial elements such as cardiorespiratory endurance, muscle strength, flexibility, and body composition (Wang, 2019). Serving as a cornerstone of a healthy lifestyle, physical fitness not only serves as a marker of health but also holds the potential to positively impact overall well-being (Sanchez & Gilabert, 2023). Research conducted by Klijajevic et al. (2022) underscores the significant influence of individual physical activity levels on the attainment of physical fitness. Statistical findings from studies by Ozcan et al. (2018) indicate that engaging in physical activity leads to noteworthy enhancements in muscle strength and balance. Thus, physical activities not only contribute to enhancing fitness indicators but also hold promise for bolstering overall body strength and balance (Prayoga et al., 2024).

Meredith et al. (2011) elucidated that active participation in exercises requiring full-body engagement can be instrumental in enhancing overall

fitness levels and physical capabilities. Such exercises not only cultivate coordination but also target various facets including strength, flexibility, and balance holistically (Wang, 2019). Consistent engagement in physical activity yields substantial benefits for bone health, aiding in the prevention of osteoporosis (Loprinzi et al., 2012) and bolstering bone strength (Gabel et al., 2017). Intensive and repetitive physical activity acts as a stimulus for muscle strength development (Witzke & Snow, 2000), also improvement of physical condition (Ramirez et al., 2024).

Maintaining adequate nutritional intake is crucial for preserving bone mass, particularly by ensuring sufficient levels of calcium, magnesium, vitamin D, vitamin C, and vitamin K in daily dietary intake (Kunutsor et al., 2017; Wang et al., 2017; Karpinski et al., 2017). Furthermore, increased muscle mass in adults correlates with augmented bone mass (Ho et al., 2014). Sustaining a balanced nutritional profile, especially through adherence to a healthy diet, can lead to enhancements in both bone mass and bone mineral density (BMD) (23). Consequently, the role of proper nutrition emerges as a pivotal factor in safeguarding bone health and strength.

Gabel et al. (2017) underscores that physical inactivity poses various health risks, including obesity and hypertension. College students, considered a vulnerable demographic, often grapple with adverse outcomes stemming from reduced physical activity, which can detrimentally impact their overall physical health (Mandaric, 2001). Common barriers to maintaining physical activity among students include limited free time due to demanding lecture schedules and obligations in social and family spheres (Klijajevic et al., 2022). Conversely, findings from a study by Ristanto et al. (2022) indicate that students enrolled in sports faculties exhibit superior physical fitness levels attributed to increased engagement in physical activity. This underscores the importance of fostering students' awareness regarding the significance of sustaining physical activity to uphold holistic health.

Another pivotal determinant of enhancing physical fitness is maintaining adequate sleep patterns. Sufficient sleep directly influences the functioning of the prefrontal cortex, responsible for critical cognitive processes such as thinking, language, working memory, logical reasoning, and creativity (Alhola & Polo, 2007). Sleep deprivation can lead to impaired performance in these domains (Hidayatullah et al., 2023). Research by Gujar et al. (2011) suggests that even one day of sleep deprivation can impair memory

encoding, resulting in diminished information retention. Furthermore, studies have demonstrated that longer sleep durations among college students are associated with improved exam scores and academic performance (Medeiros et al., 2001). Sleep plays an integral role in learning and memory consolidation processes. During sleep, synapses form between dendritic branches, facilitating the retention of learned information (Albahtiti et al., 2020). Consequently, maintaining optimal sleep patterns not only supports mental and physical well-being but also becomes pivotal in optimizing cognitive functions essential for learning and daily problem-solving attempts.

Spiritual Aspects in Sports

Spiritual preparation within the realm of sports pertains to the spiritual dimension or religious values held by individuals (Goncalves et al., 2017). It involves the exploration and integration of profound and meaningful values into sports practice (Guimaraes & Avezum, 2007). From a sporting perspective, both performance excellence and personal development are deemed equally significant outcomes (Danish & Nellen, 1997). Performance excellence pertains to competitive sports outcomes, whereas personal excellence encompasses holistic health and well-being (Watson & Nesti, 2005).

Spiritual preparation serves to enhance the sports experience by aligning religious values or spirituality with purpose and accomplishment (Guimaraes & Avezum, 2007). While performance excellence underscores achievement in competition and exercise, personal excellence encompasses mental and physical health as well as overall life equilibrium. Focusing on mental health makes it easier to manage negative emotions, enhance performance, and maintain positive concentration during sports activities (Solomon & Malik, 2021). Through the exploration of spiritual values, individuals engaging in sports activities can find deeper meaning in each endeavor, unveiling a broader dimension of interconnectedness and purpose (Goncalves et al., 2017). It plays a crucial role in offering additional motivation, fostering mental resilience, and positively impacting well-being both within and beyond the sports arena (Koenig et al., 2012). Spirituality is recognized as an integral component of achieving health and well-being (Emmons, 2003). Cultivating personal attributes such as perseverance, courage, and optimism enables individuals to better navigate adversity and pressure in sports contexts with heightened levels of readiness (Lucchetti & Lucchetti, 2014).

Utilizing spiritual and religious practices in sports, particularly pre-activity prayers, can aid in overcoming performance anxiety and personal challenges (Watson & Nesti, 2005). In Indonesia, the tradition of praying before engaging in activities, including sport activities, has become a cultural norm (Fenwick, 2017). This practice stems from Indonesia's reputation as a country rich in religious values (Rofii & Hosen, 2023). Spiritual practices like prayer serve as a means to help athletes attain inner tranquillity and mental focus before engaging in competitions or exercises (Koenig et al., 2012). This can positively impact athletes' confidence, concentration, and mental endurance levels (Lucchetti & Lucchetti, 2014). Moreover, comprehending spiritual values and fostering positive personal attributes can furnish athletes with a robust foundation for confronting challenges and transitions in the realm of sports (Goncalves et al., 2017). The development of perseverance, courage, and optimism through the spiritual dimension contributes to the cultivation of a resilient and well-rounded athlete's character (Guimaraes & Avezum, 2007). In this context, spirituality serves as an additional reservoir of strength for athletes, aiding them in surmounting various obstacles and striking a balance between achievement and personal well-being.

Hypothesis

1. Daily activity has a significant and positive effect on spiritual preparation
2. Daily activity has a significant and positive effect on knowledge about football
3. Spiritual preparation has a significant and positive effect on knowledge about football
4. Spiritual preparation mediates the relationship between daily activity and knowledge about football.

Method

The data analysis technique employed in this study is path analysis coupled with the bootstrap method. Path analysis is a statistical tool utilized to investigate causal relationships among variables within a model. This methodology enables researchers to assess the extent to which an independent variable influences a dependent variable through a specific pathway or trajectory. What sets this study apart is the incorporation of the bootstrap method, a non-parametric statistical approach designed to address challenges such as small sample sizes, non-normal distribution, or data uncertainty. Bootstrapping involves creating subsamples by randomly drawing observations from the original dataset (with replacement). Each bootstrap subsample contains the same number of observations as the original sample, ensuring stability in the

results. To ensure robustness, a large number of bootstrap subsamples is recommended, typically around 10,000 for final result preparation. Bootstrapping yields more reliable confidence interval estimates and enables significance testing of model parameters. By combining path analysis with bootstrapping, this study aims to provide a more robust and reliable analysis of causal relationships among the variables under investigation. This approach enhances the validity of research findings and facilitates a deeper understanding of the factors influencing the variables studied. Although the study initially involved 204 respondents, it should be noted that the analysis is not limited to this number. Through bootstrapping techniques, the dataset was expanded to include 500 datasets, significantly enhancing the statistical reliability and validity of the analysis. One of the primary advantages of bootstrapping is its ability to generate numerous synthetic datasets by resampling from existing data, thereby mitigating the limitations associated with small sample sizes. By creating a multitude of synthetic datasets, bootstrapping improves estimation accuracy, reduces bias, and enables the measurement of uncertainties inherent in limited data. Consequently, the utilization of bootstrapping techniques not only broadens the research framework but also enhances the reliability of statistical analysis results, rendering the research more comprehensive and dependable. The variables examined in this study include daily activity, spiritual preparation, and knowledge.

Table 1. Respondent Demographics

	Descriptive	n	%
Gender	Male	140	68.6
	Female	64	31.4
Age	15-20	93	45.6
	21-25	104	51.0
	26-30	7	3.4
Length of Study	Over the fourth year	12	5.9
	Second year	23	11.3
	Fourth year	21	10.3
	Third year	101	49.5
	First year	47	23.0
Majors	Non-Sports	81	39.7
	Sports	123	60.3
Sleep Hours	4-6 hours	111	54.4
	7-9 hours	70	34.3
	Less than 4 hours	11	5.4
	More than 9 hours	12	5.9
Food Consumption	Twice a day	96	47.1
	More than three times a day	9	4.4
	Once a day	13	6.4
	Three times a day	86	42.2

The demographics table provides a concise overview of a diverse participant group, presenting their gender distribution and age demographics. Predominantly, male participants constituted 68.6% of the sample, with females accounting for 31.4%. Regarding age distribution, participants spanned various life stages, with the majority falling within the 21-25 year age bracket (51.0%), followed by the 15-20 year age group (45.6%). A smaller proportion, 3.4%, comprised individuals aged 26-30 years. In terms of academic progression, the largest cohort of respondents were in their third year of study (49.5%), while the second and fourth years represented 11.3% and 10.3% respectively. Regarding academic disciplines, 60.3% of respondents specialized in sports-related fields, whereas the remaining 39.7% pursued non-sports disciplines. Analysis of sleep patterns, an integral aspect of overall well-being, indicates that the majority (54.4%) reported obtaining 4-6 hours of sleep per night. However, a notable proportion (34.3%) adhered to a healthier sleep routine, ranging between 7-9 hours. Furthermore, smaller segments reported inadequate sleep (5.4%, less than 4 hours) or excessive sleep (5.9%, more than 9 hours). Regarding food consumption habits, nearly half of the respondents (47.1%) reported consuming meals twice a day, while 42.2% adhered to the conventional three-meal-a-day pattern. A minority opted for alternative dietary practices, with 6.4% consuming one meal a day and 4.4% exceeding the standard three meals per day. These dietary choices may be influenced by individual preferences, cultural factors, or academic demands, among other factors.

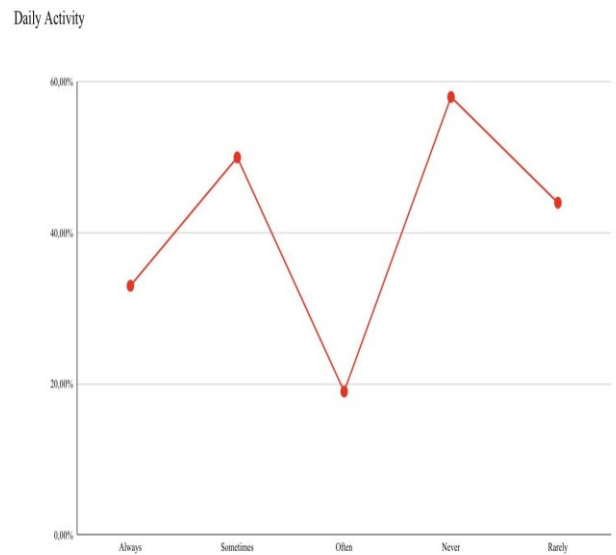


Figure 1. Daily Activity Variable Description

According to Figure 1, the largest proportion of respondents (28.4%) reported never being involved in sports clubs (Never), followed by 21.6% who participated rarely (Rarely). Additionally, 24.5% indicated occasional involvement (Sometimes), while 9.3% reported frequent participation (Often), and 16.2% claimed constant involvement (Always).

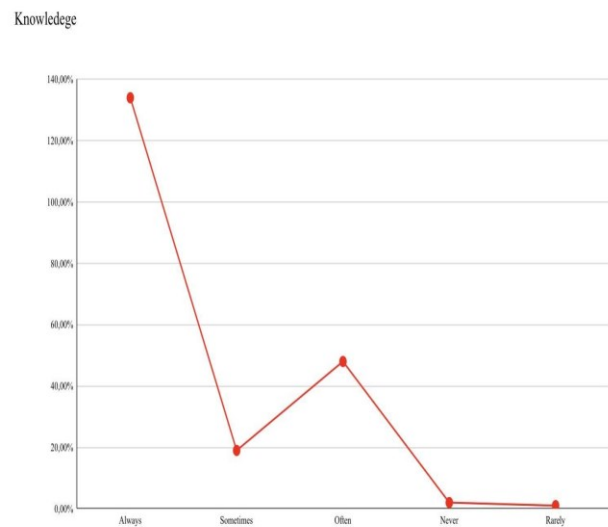


Figure 2. Knowledge Variable Description

In terms of the knowledge variable, as illustrated in Figure 2, the majority of respondents (65.7%) reported always understanding the concept of power necessity in football activities (Always), while 23.5% indicated frequent understanding (Often). Moreover, 9.3% stated occasional understanding (Sometimes), with only a small percentage reporting rare (Rarely, 0.5%) or non-existent (Never, 1%) comprehension

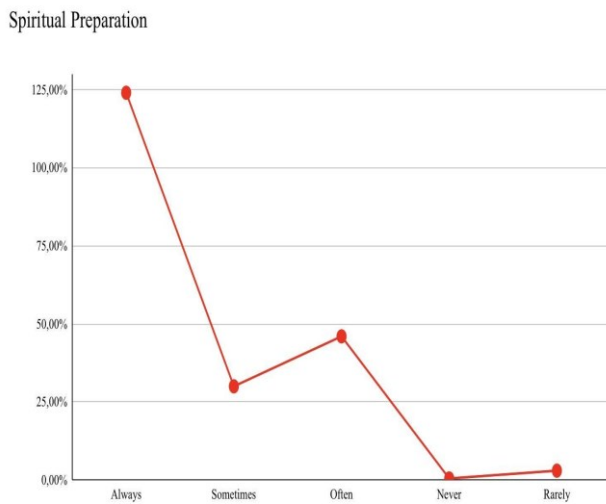


Figure 3 . Description of Spiritual Preparation Variables

Evaluation of the Spiritual Preparation variable, depicted in Figure 3, reveals that a significant majority of respondents (60.8%) reported always praying before commencing sports activities (Always). Furthermore, 22.5% indicated frequent prayer (Often), while 14.7% reported occasional prayer (Sometimes). A minor percentage reported rare (Rarely, 1.5%) or non-existent (Never, 0.5%) engagement in prayer before sports activities.

Hypothesis Testing

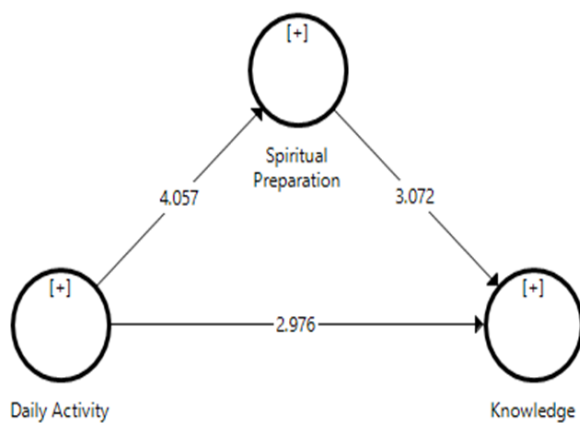


Figure 4. Hypothesis Testing

Table 2
Data Analysis

	Koef	T Value	P Values
Daily Activity_ -> Knowledge	0.169	2.976	0.003
Daily Activity_ -> Spiritual Preparation	0.230	4.057	0.000
Spiritual Preparation -> Knowledge	0.252	3.072	0.002
Daily Activity_ -> Spiritual Preparation -> Knowledge	0.058	2.238	0.026

The results of the data analysis unveiled a significant influence between daily activity and knowledge, as evidenced by a T value surpassing 1.96 and a P value

less than 0.05. A positive coefficient of 0.16 indicates a unidirectional relationship, implying that higher levels of daily activity correspond to higher levels of knowledge. Conversely, a decrease in daily activity levels correlates with a decrease in knowledge levels.

Additionally, the analysis revealed a significant influence between daily activity and Spiritual Preparation (SP), with T values exceeding 1.96 and P values less than 0.05. A positive coefficient of 0.230 signifies a unidirectional relationship between daily activity and SP. This suggests that higher levels of daily activity are associated with higher levels of Self-Perception, while lower levels of daily activity are linked to lower levels of Self-Perception.

Furthermore, the data analysis demonstrated a significant influence between SP and knowledge, indicated by T values surpassing 1.96 and P values less than 0.05. A positive coefficient of 0.252 highlights a unidirectional relationship between self-perception and knowledge. Consequently, higher levels of SP correspond to higher levels of knowledge, and vice versa.

It is noteworthy that SP mediates the relationship between daily activity and knowledge. With significant T values ($T > 1.96$ and $P < 0.05$), the analysis underscores an indirect influence of daily activity on knowledge through SP mediation. This implies that Self-Perception plays a pivotal role in bridging daily activities with the level of knowledge possessed by individuals.

Discussion

Adopting a healthy lifestyle is integral to achieving balance and sustainability, with regular physical activity being a key manifestation of this lifestyle (Henriques et al., 2020). Physical activity not only enhances physical health but also positively impacts mental well-being (Alvarez et al., 2019). Engaging in regular physical activity strengthens the body, increases flexibility, boosts the immune system, and reduces the risk of chronic diseases (Ito et al., 2020). Moreover, physical activity serves as a stress-reliever, contributing to an overall improvement in quality of life (Chen et al., 2018). SepThus, making physical activity a consistent part of daily life is crucial for achieving a healthy lifestyle.

Individuals who incorporate regular physical activity into their daily routines experience significant health and well-being benefits (Perez et al., 2018). Consistent engagement in physical activity leads to increased energy and vitality, enhancing performance

in daily activities (Astrino et al., 2019). Integrating physical activity into daily routines also allows individuals to discover enjoyable activities, fostering motivation to sustain a healthy lifestyle and alleviating boredom that may arise during these daily activities (Cortes et al., 2017).

Furthermore, physical activity integrated into daily routines can positively impact an individual's spiritual preparation (Goncalves et al., 2017). The research findings support the notion of a positive correlation between daily physical activity and spiritual preparation, this suggests that engaging in physical activity can serve as a moment of reflection and unity between the body, mind, and spirit. Through regular physical activity, individuals may find spiritual peace and balance (Fysh & Lucas, 1998), influencing their self-understanding and perception of their surroundings (Watson & Nesti, 2005). Consequently, this habit fosters an awareness to maintain healthy sleep, dietary, and lifestyle patterns. Additionally, individuals tend to exhibit a more sportsmanlike demeanor, facilitated by the inner peace cultivated through physical activity (Guimaraes & Avezum, 2007). Practices such as walking, running, yoga, or movement meditation serve as avenues to increase self-awareness and concentrate the mind (Guimaraes & Avezum, 2007). Engaging in physical activity encourages individuals to be fully present, letting go of distractions to attain heightened levels of concentration (Alhola & Polo, 2007).

The research results show a positive correlation between the consistency of sports activities and a person's level of knowledge and highlight the importance of physical activity in influencing a person's cognitive function. With a routine exercise regimen, individuals tend to have a lower risk of cognitive impairment, such as dementia or Alzheimer's disease (Rockwood & Middleton, 2007). The influence on cognitive function is due to the positive effects of physical activity on basal neurons and neurotrophic factors in the brain that regulate glucose metabolism and energy to prevent cell damage (Ploughman, 2008). The consistency of physical activity also has an impact on increasing concentration during learning (Rockwood & Middleton, 2007; Alhola & Polo, 2007). This means that through regular physical exercise, a person can experience an increase in focus and sharpness of thinking, which facilitates the absorption and processing of information. In addition, an individual's level of knowledge can be influenced by how often they engage in sports activities. Involvement in physical activity not only has an impact on physical health but also makes a significant contribution to cognitive function and a person's knowledge. Therefore, the importance of active involvement in physical activity as an effort to improve knowledge and overall quality of life becomes increasingly clear.

Limitation

Researchers believe that the findings of the study are significant. However, they acknowledge limitations, such as the use of cross-sectional studies involving participants easily accessible to the researchers. Over time, it's important to address these limitations by considering a more holistic and representative research approach.

Conclusion

In summary, the study demonstrates that daily activities exert an influence on both spiritual preparation and knowledge. Regular physical activity not only enhances physical and mental well-being but also significantly impacts the spiritual dimension and knowledge acquisition. Engaging in physical activity becomes a spiritual endeavour, fostering inner peace and equilibrium, which subsequently enriches individuals' self-awareness and comprehension of their surroundings. Moreover, consistent physical activity correlates with a reduced risk of cognitive impairment and enhances concentration during academic pursuits, facilitating improved knowledge absorption and processing. Hence, integrating regular physical activity into students' daily routines is essential for maintaining physical health, sharpening cognitive abilities, and deepening spiritual insights, ultimately fostering a more balanced life.

Funding

We acknowledge the support funding for research, authorship and publication of this article from the Center for Education Financial Service-Indonesian Ministry of Education, Culture, Research, and Technology (Puslapdik-Kemendikbudristek) and Indonesia Endowment Funds for Education (LPDP)

References

- Albahtiti, N. H., Khazaei, R., Sasa, T. H., et al. (2020). Effects of Daily Activities on Academic Performance of Applied Science University Students. *Journal of Sociology and Anthropology*, 4(1). 8-22. <https://doi.org/10.12691/jsa-4-1-2>.
- Alhola, P., & Polo-Kantola, P. (2007). Sleep Deprivation: Impact on Cognitive Performance. *Neuropsychiatric disease and treatment*, 3(5). 553-567. <https://doi.org/10.2147/ndt.s12160203>
- Álvarez, I. C. G., Maldonado, A. S., Jimenez, V. S.,

- et al. (2019). High Levels of Physical Fitness Are Associated with Better Health-Related Quality of Life in Women with Fibromyalgia: The al-Ándalus Project. *Phys Ther*, 99(11). <https://doi.org/10.1093/ptj/pzz113>
- Annur, C. M. (2023, August 18). Durasi Tidur Responden dalam Semalam. [Respondents' Sleep Duration Overnight]. *Databoks*. <https://databoks.katadata.co.id/datapublish/2023/08/18/berapa-lama-durasi-tidur-orang-indonesia-ini-hasil-surveinya>
- Astrino, T. A., Bediamol, N., Cotoia, S., et al. (2019). Verification testing to confirm VO₂max attainment in persons with spinal cord injury. *Journal Spinal Cord. Med*, 42(4). 494-501. <https://doi.org/10.1080/10790268.2017.1422890>
- Chen, W., Hammond, B., Hypnar, A., & Mason, S. (2018). Health-related physical fitness and physical activity in elementary school students. *BMC Public Health*, 18(1). 1-12. <https://doi.org/10.1186/s12889-018-5107-4>
- Cortes, A. S., Diaz, A. M. C., & Arias, M. L. B. (2017). Motivational factors and effects associated with physical-sport practice in undergraduate students. *Social and Behavioral Sciences*, 237(2017). 811-815. <https://doi.org/10.1016/j.sbspro.2017.02.153>
- Danish, S. J., & Nellen, V. C. (1997). New roles for sport psychologists: Teaching like skills through sport to at risk youth. *Quest*, 49. 100–113. <https://doi.org/10.1080/00336297.1997.10484226>
- Emmons, R. A. (2003). *Personal goals, life meaning, and virtue: Wellsprings of a positive life*. Washington: American Psychological Association.
- Fenwick, S. (2017). *Blasphemy, Islam, and the State: Pluralism and Liberalism in Indonesia*. London: Routledge.
- Ferrie, J. E., Shipley, M. J., Akbaraly, T. N., et al. (2011). Change in Sleep Duration and Cognitive Function: Findings from the Whitehall II Study. *Sleep*, 34(5). 565-573. <https://doi.org/10.1093/sleep/34.5.565>
- Fysh, R. & Lucas, K. B. (1998). Religious beliefs in science classrooms. *Research in Science Education*, 28, 399-427. <https://doi.org/10.1007/BF02461507>
- Gabel, L., Macdonald, H. M., Nettlefold, L., & McKay, H. A. (2017). Physical activity, sedentary time, and bone strength from childhood to early adulthood: a mixed longitudinal HR-pQCT study. *Journal of bone and mineral research*, 32(7). 1525-1536.
- Goncalves, J. P. B., Lucchetti, G., Menezes, P. R., & Vallada, H. (2017). Complementary religious and spiritual interventions physical health and quality of life: A systematic review randomizes controlled clinical trials. *PloS one*, 12(10). <https://doi.org/10.1371/journal.pone.0186539>
- Guimaraes, H. & Avezum, A. (2007). Impact of spirituality on physical health. *Archives of Clinical Psychiatry*, 34(1). 88-94. <https://doi.org/10.1590/S0101-60832007000700012>
- Gujar, N., Yoo, S. S., Hu, P., & Walker, M. P. (2011). Sleep deprivation amplifies reactivity of brain reward networks, biasing the appraisal of positive emotional experiences. *Journal of Neuroscience*, 31(12). 4466-4474. <https://doi.org/10.2147/ndt.s12160203>
- Henriques, D. N., et al., (2020). Active commuting and physical fitness: A systematic review. *International Journal of Environmental Research and Public Health*, 17(8). <https://doi.org/10.3390/ijerph17082721>
- Hidayatullah, A., Naz, F., & Niazi, S. (2023). Internet Addiction: Predictor of Disturbed Emotion Regulation, Sleep Quality, and General Health in University Students. *FWU Journal of Social Sciences*, 17(2)0, 78-89. <http://doi.org/10.51709/19951272/Summer2023/6>
- Ho, L. T. P., Nguyen, U. D., & Nguyen, T.V. (2014). Association between lean mass, fat mass, and bone mineral density: A meta-analysis. *The Journal of Clinical Endocrinology & Metabolism*, 99(1). 30-38. <https://doi.org/10.1210/jc.2013-3190>
- Ito, Y., et al. (2020). Comparison of quadriceps setting strength and knee extension strength test to evaluate lower limb muscle strength based on health-related physical fitness values i elderly people. *BMJ Open Sport Exercise Media*, 6(1). <https://doi.org/10.1136/bmjsem-2020-000753>
- Shahzadi, N. & Ijaz, T. (2014). Reliability and Validity of Pre-sleep Arousal Scale for Pakistani University Students. *FWU Journal of Social Sciences*, 8(1), 78-82.
- Karpiński, M., Popko, J., Maresz, K., Badmaev, V., & Stohs, S. J. (2017). Roles of Vitamins D and K, Nutrition, and Lifestyle in Low-Energy Bone Fractures in Children and Young Adults. *Journal of the American College of Nutrition*, 36(5). 399-412. <https://doi.org/10.1080/07315724.2017.1307791>

- Klijajevic, V., Stankovic, M., Dordevic, D., et al. (2022). Physical Activity and Physical Fitness among University Students-A Systemic Review. *International Journal Environment Research Public Health*, 19(1). 158-170. <https://doi.org/10.3390/ijerph19010158>
- Koenig, H., King, D., & Carson, V. B. (2012). *Handbook of religion and health*. New York: Oxford University Press.
- Kulinski, J. P., Khera, A., Ayers, C. R., et al. (2014). Association between cardiorespiratory fitness and accelerometer-derived physical activity and sedentary time in the general population. *Mayo clin proc*, 89(8). 1063-1071. <https://doi.org/10.1016/j.mayocp.2014.04.019>
- Kunutsor, S. K., Whitehouse, M. R., Blom, A. W., & Laukkanen, J. A. (2017). Low serum magnesium levels are associated with increased risk of fractures: A long-term prospective cohort study. *European journal of epidemiology*, 32, 593-603. <https://doi.org/10.1007/s10654-017-0242-2>
- Long, C.S., Harrel, P., Subramaniam, K., et al. (2023). Strengthening Elementary Preservice Teachers Physical Science Content. *Research in Science Education*, 53, 613-632. <https://doi.org/10.1007/s11165-022-10071-9>
- Loprinzi, P. D., Cardinal, B. J., Loprinzi, K. L., & Lee, H. (2012). Benefits and environmental determinants of physical activity in children and adolescents. *Obesity Facts*, 5(4). 597-610. <https://doi.org/10.1159/000342684>
- Lucchetti, G., & Lucchetti. A. L. G (2014). Spirituality, religion, and health: Over the last 15 years of field research (1999-2013). *The International Journal of Psychiatry in Medicine*, 48(3). 199-215. <https://doi.org/10.2190/PM.48.3.e>
- Mandarić, S. (2001). Effects of programmed exercising to music of female pupils. *Facta universitatis-series: Physical Education and Sport*, 1(8), 37-49.
- Medeiros, A. L. D., Mendes, D. B., Lima, P. F., & Araujo, J. F. (2001). The relationships between sleep-wake cycle and academic performance in medical students. *Biological rhythm research*, 32(2). 263-270. <https://doi.org/10.1076/brhm.32.2.263.1359>
- Meredith, J. et al. (2011). Upright water-based exercise to improve cardiovascular and metabolic health: a qualitative review. *Complementary therapist in medicine*, 19(2). 93-103. <https://doi.org/10.1016/j.ctim.2011.02.002>
- Ozcan, R., Irez, G. B., Saygin, O., & Ceylah, H. I. (2018). Aqua-pilates exercises improves some physical fitness parameters of healthy young women. *Journal of Physical Education & Sports Science*, 12(3). 160-176. <https://doi.org/10.1080/07448481.2018.1515747>
- Perez, D. C., Cuesta, A. I. V., Vera, G. F., & Mayoral, C. F. (2018). The relationship between quality of life and physical fitness in people with severe mental illness. *Health qual life outcomes*, 6(1). <https://doi.org/10.1186/s12955-018-0909-8>
- Perez, L. S., Videla, A. J., Richaudeau, A., et al. (2013). A multi-step pathway connecting short sleep duration to daytime somnolence, reduced attention, and poor academic performance: an exploratory cross-sectional study in teenagers. *Journal of Clinical Sleep Medicine*, 9(5). 469-473. <https://doi.org/10.5664/jcsm.2668>
- Ploughman, M. (2008). Exercise is brain food: The effects of physical activity on cognitive function. *Developmental Neurorehabilitation*, 11(3). 236-240. <https://doi.org/10.1080/17518420801997007>
- Prayoga, H. D., Tomoliyus., Lumintuarso, R., et al. (2024). A case study of Indonesian amateur boxing athletes: Is there an influence of organization culture and quality of service on performance through achievement motivation as a mediator. *Retos*, 56, 63-72. <https://doi.org/10.47197/retos.v56.103128>
- Ramirez, Y. P., Calvo, M. M., & Paton, R. N. (2024). Effects of physical exercise programs on body composition, physical fitness and quality of life in older people with overweight or obesity: a systematic review. *Retos*, 56, 47-62. <https://doi.org/10.47197/retos.v56.104052>
- Ristanto, K. O., Retno, S., Utomo, R., & Ardha, M. A. A. (2022). University Students Daily Activities and Physical Fitness during Covid-19 Pandemic. *International Journal of Human Movement and Sports Sciences*, 10(2). 166-172. <https://doi.org/10.13189/saj.2022.100205>
- Rockwood, K. & Middleton, L. (2007). Physical activity and the maintenance of cognitive function. *Alzheimer's & Dementia*, 3(2007). 838-844. <https://doi.org/10.1016/j.jalz.2007.01.003>
- Rodriguez, C. C., Camargo, E. M., Rodriguez, C. R. A., & Reis, R. S. (2020). Physical activity, physical fitness and academic achievement in adolescents: A systematic review. *Rev Bras Med do Esporte*, 26(5). https://doi.org/10.1590/1517-8692202026052019_0048
- Rofii, A., & Hisen, N. (2023). *Constitutional Democracy*

- in Indonesia. United Kingdom: Oxford Press.
- Sanchez, A. H. & Gilabert, A. B. (2023). Influence of physical education on physical activity levels in adolescence: A systematic review. *Retos*, 401, 123-146. <https://doi.org/10.4438/1988-592X-RE-2023-401-586>
- Sampaio, A., et al. (2020). Physical fitness in institutionalized older adults with dementia: Association with cognition, functional capacity and quality of life. *Aging Clin Exp Res*, 32(11). <https://doi.org/10.1007/s40520-019-01445-7>
- Solomon, V. & Malik, F. (2021). Psychological Skills and Performance Efficacy in Hockey Players: The Mediating Role of Sportsmanship. *FWU Journal of Social Sciences*, 15(2), 173-189. <http://doi.org/10.51709/19951272/Summer-2/10>
- Wang, C., Cao, X., & Zhang, Y. (2017). A novel bioactive osteogenesis scaffold delivers ascorbic acid, β -glycerophosphate, and dexamethasone in vivo to promote bone regeneration. *Oncotarget*, 8(19), 1-11. <https://doi.org/10.18632/oncotarget.15779>
- Wang, J. (2019). The association between physical fitness and physical activity among Chinese college students. *Journal of American College Health*, 67(6), 602-609.
- Watson, N. J. & Nesti, M. (2005). The role of spirituality in sport psychology consulting: An analysis and integrative review of literature. *Journal of applied sport psychology*, 17, 2228-239. <https://doi.org/10.2147/ndt.s12160203>
- Witzke, K. A., & Snow, C. M. (2000). Effects of plyometric jump training on bone mass in adolescent girls. *Medicine and science in sports and exercise*, 32(6), 1051-1057.
- Yang, Y. J. (2019). The effects of weekly exercise time on VO2max and resting metabolic rate in normal adults. *Journal Physical Therapy Sciences*, 28(4), 1359-1363. <https://doi.org/10.1589/jpts.28.1359>

Datos de los/as autores/as y traductor/a:

Nurwahidin Hakim	Nurwahidin_9904922012@mhs.unj.ac.id	Autor/a
Iman Sulaiman	Iman4zamzami@gmail.com	Autor/a
Samsudin	samsudin@unj.ac	Autor/a
Ika Novitaria Marani	novi.coaching13@gmail.com	Autor/a
Rasyidah Jalil	rasyidah@umpalopo.ac.id	Autor/a
Dery Rimasa	dery.rimasa@upi.edu	Autor/a
Fatiha Khoirotunnisa Elfahmi	fatihakelfahmi@gmail.com	Autor/a – Traductor/a
Arrahman	arrahman@unj.ac.id	Autor/a
Eko Bagus Fahrizqi	Eko_9904922002@mhs.unj.ac.id	Autor/a