

Meditation Guidance, Spiritual Strengthening, and Mental Health for Patients with Covid-19: Neuroscience Approach

Mohammad Jailani^{1*} and Suyadi²

¹Department of Education Arabic (Tarbiyah), Education Arabic Studies, Institut Studi Islam Muhammadiyah Pacitan, Indonesia

²Department of Master of Islamic Religious Education, Faculty of Islamic Studies, Universitas Ahmad Dahlan Yogyakarta, Indonesia

*corresponding author: m.jailani@isimupacitan.ac.id

ARTICLE INFO

ABSTRACT

Article history

Received 1/1/23

Revised 1/18/23

Accepted 3/28/23

Keywords

Covid-19 patients

Disaster jurisprudence

Neuroscience

Spiritual

Background: The spread of the Covid-19 virus outbreak in early March 2020, caused a high number of deaths worldwide. People infected with Covid-19 are not only physically infected but mentally (spiritually) are also infected. In Indonesia, many hospitals in all cities and villages have been instructed to lock down (limit communication and interaction). This research focuses on analyzing neuro-spiritual as an alternative spiritual approach to improving mental health for Covid-19 patients. **Method:** This study uses a qualitative method (content analysis), based on case studies at Muhammadiyah hospitals throughout the city of Yogyakarta, Indonesia which are fully accredited (perfect). This study interviewed asymptomatic and symptomatic Covid-19 patients using a purposive sampling technique. The data qualitative analysis technique uses triangulation. **Results:** This study describes that patients suffering from Covid-19 are very diverse. Before the neuro-spiritual approach, Covid-19 patients felt constrained. The existence of a neuro-spiritual approach, namely a spiritual approach, such as fasting, night prayers (*tahajjud*), reading the Koran, and interacting with friends, has a good and positive impact on Covid-19 patients. A neuro-spiritual approach that prioritizes and relies on spiritual power (worship) that responds to the brain, is an alternative method used by PKU Muhammadiyah Yogyakarta. **Conclusion:** A neuro-spiritual approach can improve the mental health of Covid-19 patients. This approach is very relevant to the reference perspective of Islamic studies which has implications for the Covid-19 disaster in Indonesia.



This is an open access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Introduction

Since the outbreak of the Covid-19 case in Indonesia, the government issued a policy to limit activities outside the home and social distancing in early March 2020 [1]. This policy was carried out to break the chain of transmission of the Covid-19 virus [2]. The high number of Covid-19 patients and limited health facilities have resulted in difficulties in handling Covid-19 patients in healthcare facilities. Patients with severe symptoms are mostly accommodated in hospitals, while patients with mild symptoms and patients without symptoms are only required to carry out independent isolation without special health facilities from the State [3]. However, self-isolation for asymptomatic patients raises problems in the form of exclusion and discrimination by the surrounding community [4]. This causes the patient's mental health to decline and results in a longer recovery time [5]. Therefore, an



alternative isolation model is needed that does not marginalize Covid-19 patients. They still live in isolation but still socialize with other people [6].

The main problem in this study is the unstoppable number of Covid-19 patients in hospitals throughout Indonesia. But unfortunately in this case the alternatives provided by the government are very limited. Based on preliminary data, researchers found the location of a hospital that is still developing and managing drugs and services for Covid-19 patients, namely the Muhammadiyah Hospital in the City of Yogyakarta, which is collaborating with Yogyakarta 'Aisyiyah University under the leadership of Muhammadiyah Disaster Management Center (MDMC). The city of Yogyakarta accommodates Covid-19 patients by establishing a health institution called the Yogyakarta Muhammadiyah Covid-19 Islamic Boarding School.

So far, many studies have discussed and studied Covid-19, Covid-19 patients, and the Muhammadiyah Hospital, both in Indonesia and in Yogyakarta [7]. Followed by research that responds to meditation for the recovery of Covid-19 patients related to the stress of Covid-19 patients [8]. Health and mental health of Covid-19 patients due to the stress of suffering from Covid-19. Interesting research is also about the existence of alternatives and solutions for Covid-19 patients related to drugs or handling spiritual strengthening and motivation to stay healthy for Covid-19 patients.

Based on online information data issued by the government in Indonesia, it is interesting to follow up with researchers. As a contribution by researchers to the Indonesian government or hospital health doctors, this research is expected to be an alternative to health services and an alternative way of treating and treating health problems [9]. Based on previous research literature and references as support to continue in this study. There are references and supporting literature from Google Scholar that add validation and strength to the development of this research [10].

The novelty of this study is that the researcher wants to analyze research that has a field model or case study at the Covid-19 Islamic Boarding School which focuses on research at the Yogyakarta Muhammadiyah Hospital. The study aimed to analyze Muhammadiyah Covid-19 patients who were given health services using a spiritual (Neuro-spiritual) approach, Covid-19 meditation guidance with the perspective of disaster law issued by the Central Leadership of Muhammadiyah where the research was located within the Muhammadiyah environment.

Materials and Method

The research approach used in this study is qualitative [11]. In this study, the type of data analysis used the Miles and Huberman (1994) method, namely the activities in qualitative data analysis were carried out interactively and continued continuously until complete so that the data was saturated. Activities in data analysis are data reduction, data display, and drawing conclusions/verifying data [15]. The flow can be seen in Figure 1.

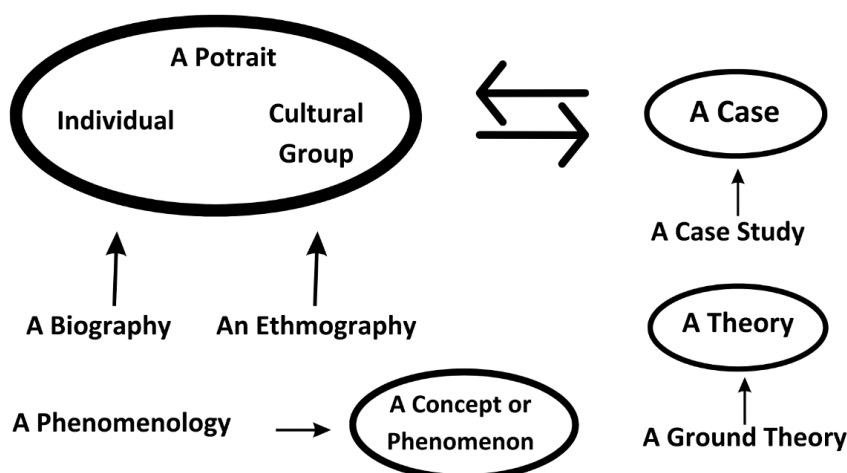


Figure 1. Case Study Research

The research subjects were PKU Muhammadiyah Yogyakarta medical staff and Covid-19 patients to obtain valid data, namely meditation guidance and a spiritual approach in Covid-19 patients with symptoms and Covid-19 patients without symptoms. The determination of research subjects was carried out using a purposive sampling technique. Data collection was carried out through interviews, observation, and documentation. Interviews were conducted using in-depth interviews based on interview guidelines and unstructured interviews. Observations were made by researchers by observing the environment of the Muhammadiyah Covid-19 Islamic boarding school, which was used as a *Pusat Kesehatan Masyarakat*. The documentation method that will be studied is text and photos of activities at the Covid-19 Muhammadiyah Islamic boarding school [14].

Results and Discussion

Based on the data obtained, the number of COVID-19 patients increased significantly at the beginning of the appearance of COVID-19 handled by the Muhammadiyah Hospital. Based on the results of the information obtained from the interviews, it was also known that Covid-19 patients who were affected and infected with Covid-19 consisted of adolescents, adults, and the elderly, both men and women. People are experiencing shocks of fear and anxiety, due to the uncertainty of Covid-19. As the following statement:

"At the beginning of the spread of Covid-19, many Covid-19 patients were infected with Covid-19. Both symptomatic and asymptomatic COVID-19 patients. Therefore, patients at the Yogyakarta City Muhammadiyah Hospital are followed up with other medical teams commanded or initiated by the leadership of the Covid-19 Islamic boarding school." (Informant 1)

Covid-19 meditation is practiced by Covid-19 patients to reduce excessive stress and anxiety. During the Covid-19 period, there needs to be stimulation or support for Covid-19 patients to always enjoy, calm and relax. As the following statement:

"The alternative provided by the medical team and doctors at PKU Muhammadiyah Yogyakarta is a meditation on the psychological and spiritual strengthening of Covid-19. This means that someone is tasked with providing strong motivation and support with the aim that Covid-19 patients recover quickly. It is known that Covid-19 patients on the one hand experience prolonged or excessive shock stress. Therefore, the alternative provided by the Medical Team is strengthening the Covid-19 Meditation." (Informant 1)

Based on [Table 1](#), there were 1 (one) symptomatic and 5 (five) asymptomatic Covid-19 patients at Muhammadiyah Yogyakarta as a shelter for the Muhammadiyah Covid-19 Islamic Boarding School. Meditation for Covid-19 is usually directed by doctors for spiritual strengthening meditation directed at remembrance, strengthening faith beliefs, strengthening faith, and religious advice that touches the heart.

Table 1. The Characteristic of Respondents

Covid-19 Patient Name	ASYMPTOMATIC/ ODP	Patient Response	Kind of People
A	ASYMPTOMATIC	75% Positive calm	Man
B	SYMPTOMATIC	75% quieter	Man
C	ASYMPTOMATIC	85% more relaxed	Man
D	ASYMPTOMATIC	70% Isolation be happy	Man
E	ASYMPTOMATIC	75% good	Man
F	ASYMPTOMATIC	70% less stress	Women

Based on the results of the interviews, it can be understood that the approach developed by the Yogyakarta Muhammadiyah Hospital in dealing with COVID-19 uses a vertical and horizontally based spiritual approach. The following is a map of the Covid-19 Spiritual landscape developed by PKU Muhammadiyah Yogyakarta ([Figure 2](#)). As the following statement:

"The activities managed by the Covid-19 Islamic boarding school include vertical and horizontal spiritual-based. The management of PKU Muhammadiyah Yogyakarta makes a team as well as a medical team but also continues to serve as a Covid-19 spiritual coach. The Covid-19 spiritual companion or coach is tasked 6 with providing direction, religious support, and prayer for both Covid-19 patients and their families at home." (Informant 2)

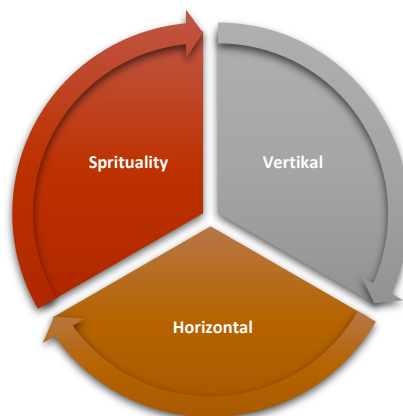


Figure 2. Spiritual Covid-19

Meetings are held online via Zoom with different topics every day. The example is getting to know the difference between regular headaches and headaches due to Covid-19 The Power of Positive Thinking, Vaccines, *aqidah* and mental health, patiently accepting life's trials, and building community health (herd immunity) through vaccination.

The approach and alternatives given by the Covid-19 management are more directed toward neuro-spiritual (spiritual brain approach). Based on the results of information provided by medical officers:

"One of the supporters in supporting the improvement and health of Covid-19 patients is the development of faith and spiritual improvement programs. Asymptomatic Covid-19 patients were given direction and guidance to increase faith and immunity by the Muhammadiyah Covid-19 Islamic boarding school. One example is the existence of a program of religious worship beginning with obligatory prayers, which are held regularly and consistently five times in Islamic boarding schools. And also coupled with sunnah prayers such as tahajjud and dhuha carried out as a routine activity. The Qur'an tadarus program is carried out after prayers for Covid-19 Asymptomatic patients." (Informant 3)

Discussion

The COVID-19 outbreak is a national and even global disaster. According to Law Number 24 of 2007, a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or non-natural factors as well as human factors, resulting in human casualties, environmental damage, losses possessions and psychological impact [32]. Therefore, Muhammadiyah views COVID-19 as a non-natural disaster category [21].

In looking at disasters, Muhammadiyah always links normative texts in the Qur'an and hadith with modern science. As an organization that carries the *tajdid* jargon, Muhammadiyah's perspective in viewing social reality, including Covid-19, always uses the *bayani*, *burhani* and *irfani* approaches [26]. Muhammadiyah rejects atomistic and partial views, especially the irrational view that disasters occur because of mystical things that have nothing to do with disasters [33].

The Covid-19 virus outbreak has created uncomfortable conditions in society, such as anxiety and fear of contracting the Covid-19 virus outbreak. This attitude is very influential in the pattern of our daily lives. Covid-19 in the Perspective of Islamic neuroscience education. When the Covid-19 outbreak occurred, irrational attitudes emerged in response to it, including; 1) Refusal to comply with health protocols including 3M (washing hands with soap in running water, wearing masks, and maintaining distance); 2) The emergence of residents' refusal to bury bodies affected by COVID-19 because it will become a source of transmission; 3) Rejection and intimidation of health workers who were evicted from their contracts because they could infect residents. This irrational attitude reflects a quality of thinking that is deadlocked on how to deal with this. then it is necessary to have the best solution needed to solve the problem [34].

Increasing the needs of the immune system in the body and preventing stress in handling Covid-19, it can be done with the help of meditation and relaxation. Meditation in general can be interpreted as ideas or contemplation, contemplation, and reflection [17]. Meditation is a psychophysiological condition in which a person experiences a passive but active and silent but creative state [18]. Therefore, for someone who does meditation, his soul will become calm and fresh.

Someone does meditation when the mind does something that can reflect on itself and learn to determine what the purpose and mission of life are. The way that needs to be done is to control the body, mind, and emotions to find our identity. Letting the mind hear and absorb all the positive energy and learning to be silent for satisfying results [19].

Meditation relaxation exercises can also reduce high blood pressure. Relaxation causes hypertension drugs to be effective if pharmacological treatment is done with shame. Meditation essentially maintains awareness of an object that is focused on always maintaining good manners, not being careless, and respecting yourself.

Meditation therapy is a way or method that can respond to the body so that it can respond positively and make the body calmer and fresher. It is also beneficial for improving health, both mentally and physically. When relaxed the mind will be focused so that the blood vessels become more elastic than before [20].

In the vertical aspect, the direction and management of the Covid-19 Islamic boarding school are more on the relationship between Covid-19 patients and Covid-19 peer members, both symptomatic and asymptomatic patients. Spiritual verticality means that it is more directed toward fellow human beings, especially Covid-19 patients who can still communicate with their families at home both online and offline face-to-face while still observing health protocols [21]. The musings given by the administrators of the Muhammadiyah Islamic boarding school are for all patients to stay together with their families for those who visit and are visited by their families. Fellow Covid-19 patients, can still chat, communicate, and meet. Meditation is psychosocially strengthened based on good religious behavior [22].

Spiritually level, meaning that Covid-19 patients are still given moral support, religious assistance, online recitation, and Islamic studies. The Covid-19 Islamic Boarding School has scheduled lecturers and *ustadz* (religion teacher) to give spiritual sermons according to the theme of the existing recitation. All patients are given spiritual guidance related to Allah SWT. Such as praying in congregation, reading the Qur'an, and sunnah fasting.

The spiritual approach here researchers associate it with a neuro-spiritual approach, namely in a scientific context, namely under neurobiology is a science related to the science of the brain [23]. The science of the brain, whose part is close to lifestyle or clear thinking, focuses on inner cultivation. Increasing worship and faith in the totality of religious behavior in life [24].

Certain brain abilities differ from those found in computers or other technologies. But unfortunately, sometimes people even think about this technology where the brain is used as a storage box only. The brain learns with a mixture of various emotions, memories, intentions, and so on that make up its mental life [25]. For this reason, in the learning process, it is the brain that puts information into containers that previously contained relevant information that requires restructuring, restructuring, and reassessment [26].

The neuro-spiritual in question is Spiritual Quotient (SQ), according to Danah Zohar and Ian Marshall as the initial initiator, is an ability related to transcendence to deal with problems of life's

meaning or values. SQ can also be understood as the ability to place behavior in a wider and richer context of meaning and judge that one's actions or way of life are more meaningful than others. Another term that is the same as SQ is *ma'rifah* Quotient (MaQ) or *makrifat* intelligence [27].

This intelligence was introduced by Abdul Munir Mul Khan and developed from the great tradition of Sufi intellectuals. In the great tradition of Sufi scholars, MaQ can be understood as guidance or giving what one can strive for (effort). In this context, education places humans as microcosmic figures connected by the spirit with the peak of synthetic unity between the senses, rational, philosophical, and metaphysical. The way MaQ works is called *kasyf* and the result is called *ma'rifat* knowledge [28].

Spiritual intelligence is another form of intelligence as the third aspect of the two previous aspects of intelligence (IQ and EQ), self-knowledge and especially self-awareness is internal awareness. The brain is a process that takes place within the brain itself without the influence of the five senses and outside the world, which forms true human consciousness [29].

Anatomically, the 3 pieces of intelligence have high singlism, although some are more dominant than others. Someone who has a high IQ does not necessarily have a high EQ or SQ. On the other hand, someone who has a high EQ has the opportunity to develop his IQ optimally but his SQ is not needed. Meanwhile, someone who has a high SQ automatically has the same IQ and EQ. That is why spiritual awareness or intelligence is also referred to as "Highest Intelligence", the pinnacle of intelligence or highest intelligence [30].

Spiritual intelligence gives birth to the ability to find the meaning of life and develop morals. A person can give meaning to his life in whatever capacity he has. One does not need to wait to reach a high position or education to give meaning to life, in other words, every time people have the same opportunity to give meaning to their lives regardless of their capacity. Spiritual intelligence is the ability to give spiritual meaning to thoughts, behaviors, and activities and to be able to comprehensively energize IQ, EQ, and SQ [31].

Etymologically, neuroscience is neuroscience that studies the nervous system, specifically studying neurons or nerve cells with a multidisciplinary approach [35]. In terminology, neuroscience is a field of science that specializes in the scientific study of neuroscience. On this basis, neuroscience is also referred to as the study of the brain and all other functions of the nerves. The development of the world of neuroscience as the science of the human nervous system or brain is currently experiencing significant progress. Experts continue to research its relationship with human life, including the world of education where the specificity of brain growth and development is closely related to the achievement of an educational process [34].

Conclusion

Based on the results and discussion, it can be concluded that Covid-19 meditation with a neuro-spiritual approach applied at Yogyakarta Muhammadiyah Hospital is a good alternative for improving the physical and spiritual health of Covid-19 patients. It is hoped that this research can contribute to the development of services for Covid-19 patients.

Declaration

Acknowledgments: The research was funded with the researcher's funds. We thank the Covid-19 Islamic boarding school, especially PKU Muhammadiyah Yogyakarta, which has contributed research data and research findings. We also don't forget to thank the Uphec Conference of the Faculty of Public Health, UAD.

Conflicts of Interest: The authors declare no conflict of interest

References

1. Waterfield KC, Shah GH, Etheredge GD, Ikhile O. Consequences of COVID-19 crisis for persons with HIV: the impact of social determinants of health. *BMC Public Health*. 2021;21(1):1–7. doi: <https://doi.org/10.1186/s12889-021-10296-9>
2. Badra M. Towards an aesthetics of belief in covid19 pandemic time: Performatism in brian friel's dancing at lughnasa. *Int J Arab Stud*. 2021;21(2):29–48. doi: <https://doi.org/10.33806/ijaes2000.21.2.2>
3. Benini F, Papadatou D, Bernad  M, Craig F, De Zen L, Downing J, Drake R, Friedrichsdorf S, Garros D, Giacomelli L, Lacerda A, Lazzarin P, Marceglia S, Marston J, Muckaden MA, Papa S, Parravicini E, Pellegatta F, Wolfe J. International

- Standards for Pediatric Palliative Care: From IMPaCCT to GO-PPaCS. *J Pain Symptom Manage.* 2022 May;63(5):e529-e543. doi: [10.1016/j.jpainsymman.2022.05.006](https://doi.org/10.1016/j.jpainsymman.2022.05.006). Epub 2022 Jan 11. PMID: 35031506.
4. Haas EJ, Casey ML, Aldrich K, Ragsdale T, Crossway S, Moore SM. Lessons Learned from the Development and Demonstration of a PPE Inventory Monitoring System for US Hospitals. *Health Secur.* 2021 Nov;19(6):582-591. doi: [10.1089/hs.2021.0098](https://doi.org/10.1089/hs.2021.0098). Epub 2021 Nov 9. PMID: 34757851; PMCID: PMC8796036.
 5. Kotani H, Okai H, Tamura M. Mosque as a vaccination site for ethnic minority in Kanagawa, Japan: leaving no one behind amid the COVID-19 pandemic. *Disaster Med Public Health Prep.* 2022 Mar 23:1-9. doi: [10.1017/dmp.2022.78](https://doi.org/10.1017/dmp.2022.78). Epub ahead of print. PMID: 35317878; PMCID: PMC9095853.
 6. Chiaravalloti ND, Amato MP, Bricchetto G, Chataway J, Dalgas U, DeLuca J, Meza C, Moore NB, Feys P, Filippi M, Freeman J, Inglese M, Motl R, Rocca MA, Sandroff BM, Salter A, Cutter G, Feinstein A; CogEx Research Team. The emotional impact of the COVID-19 pandemic on individuals with progressive multiple sclerosis. *J Neurol.* 2021 May;268(5):1598-1607. doi: [10.1007/s00415-020-10160-7](https://doi.org/10.1007/s00415-020-10160-7). Epub 2020 Aug 19. PMID: 32813051; PMCID: PMC7436067.
 7. Norbury A, Liu SH, Campaña-Montes JJ, Romero-Medrano L, Barrigón ML, Smith E; MEmind Study Group; Artés-Rodríguez A, Baca-García E, Perez-Rodríguez MM. Social media and smartphone app use predicts maintenance of physical activity during Covid-19 enforced isolation in psychiatric outpatients. *Mol Psychiatry.* 2021 Aug;26(8):3920-3930. doi: [10.1038/s41380-020-00963-5](https://doi.org/10.1038/s41380-020-00963-5). Epub 2020 Dec 14. PMID: 33318619; PMCID: PMC7734389.
 8. Qodir Z, Jubba H, Hidayati M, Abdullah I, Long AS. A progressive Islamic movement and its response to the issues of the ummah. *Indones J Islam Muslim Soc.* 2020;10(2):323-52. doi: <https://doi.org/10.18326/ijims.v10i2.323-352>
 9. Baidowi A, Salehudin A, Mustaqim A, Qudsy SZ, Hak N. Theology of health of quranic pesantren in the time of COVID-19. *HTS Teol Stud / Theol Stud.* 2021;77(4):1-11. doi: <https://doi.org/10.4102/hts.v77i4.6452>
 10. Suyadi, Nuryana Z, Fauzi NAF. The fiqh of disaster: The mitigation of Covid-19 in the perspective of Islamic education-neuroscience. *Int J Disaster Risk Reduct [Internet].* 2020;51(2):1-15. doi: <https://doi.org/10.1016/j.ijdr.2020.101848>
 11. Sawatsky AP, Ratelle JT, Beckman TJ. Qualitative Research Methods in Medical Education. *Anesthesiology.* 2019 Jul;131(1):14-22. doi: [10.1097/ALN.0000000000002728](https://doi.org/10.1097/ALN.0000000000002728). PMID: 31045898.
 12. Xu J, Sun Z, Wu J, Rana M, Garza J, Zhu AC, Chakravarthy KV, Abd-Elsayed A, Rosenquist E, Basi H, Christo P, Cheng J. Peripheral Nerve Stimulation in Pain Management: A Systematic Review. *Pain Physician.* 2021 Mar;24(2):E131-E152. PMID: 33740342; PMCID: PMC8897810. doi: <https://doi.org/10.36076/ppj.2021.24.e131-e152>
 13. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Soc Sci Med.* 2022 Jan;292:114523. doi: [10.1016/j.socscimed.2021.114523](https://doi.org/10.1016/j.socscimed.2021.114523). Epub 2021 Nov 2. PMID: 34785096.
 14. Thoman DB, Yap MJ, Herrera FA, Smith JL. Diversity Interventions in the Classroom: From Resistance to Action. *CBE Life Sci Educ.* 2021 Dec;20(4):ar52. doi: [10.1187/cbe.20-07-0143](https://doi.org/10.1187/cbe.20-07-0143). PMID: 34546104; PMCID: PMC8715788.
 15. Busetto L, Wick W, Gumbinger C. How to use and assess qualitative research methods. *Neurol Res Pract.* 2020 May 27;2:14. doi: [10.1186/s42466-020-00059-z](https://doi.org/10.1186/s42466-020-00059-z). PMID: 33324920; PMCID: PMC7650082.
 16. Surzykiewicz J, Skalski SB, Niesiołbiedzka M, Toussaint LL, Konaszewski K. Polish Adaptation and Psychometric Properties of the Long- and Short-Form Interfaith Spirituality Scale. *Int J Environ Res Public Health.* 2022 Oct 14;19(20):13274. doi: [10.3390/ijerph192013274](https://doi.org/10.3390/ijerph192013274). PMID: 36293849; PMCID: PMC9602451.
 17. Skoko I, Topić Stipičić D, Tustonja M, Stanić D. Mental Health and Spirituality. *Psychiatr Danub.* 2021 Spring-Summer;33(Suppl 4):822-826. PMID: 35026808. doi: <https://doi.org/10.1080/19349637.2022.2109241>
 18. Ushuluddin A, Madjid A, Masruri S, Affan M. Shifting paradigm: From Intellectual Quotient, Emotional Quotient, and Spiritual Quotient toward Ruhani Quotient in ruhology perspectives. *Indones J Islam Muslim Soc.* 2021;11(1):139-62. doi: <https://doi.org/10.18326/ijims.v11i1.139-162>
 19. Stier-Jarmer M, Throner V, Kirschneck M, Immich G, Frisch D, Schuh A. The Psychological and Physical Effects of Forests on Human Health: A Systematic Review of Systematic Reviews and Meta-Analyses. *Int J Environ Res Public Health.* 2021 Feb 11;18(4):1770. doi: [10.3390/ijerph18041770](https://doi.org/10.3390/ijerph18041770). PMID: 33670337; PMCID: PMC7918603.
 20. Bensaid B, Machouche SBT, Tekke M. An Islamic Spiritual Alternative to Addiction Treatment and Recovery. *Al-Jami'ah.* 2021;69(1):127-62. Doi: <https://doi.org/10.14421/ajis.2021.591.127-162>
 21. Suyadi, Nuryana Z, Fauzi NAF. The fiqh of disaster: The mitigation of Covid-19 in the perspective of Islamic education-neuroscience. *Int J Disaster Risk Reduct.* 2020 Dec;51:101848. doi: [10.1016/j.ijdr.2020.101848](https://doi.org/10.1016/j.ijdr.2020.101848). Epub 2020 Sep 15. PMID: 32953437; PMCID: PMC7490240.
 22. Markova OM. The Phenomenon of Musicality in Expressiveness of V. Kandinsky's Canvases. *Linguist Cult Rev.* 2021;5(June):303-16. doi: <https://doi.org/10.21744/lingcult.v5ns2.1354>
 23. Suyadi, Nuryana Z, Asmorojati AW. The insertion of anti-corruption education into Islamic education learning based on neuroscience. *Int J Eval Res Educ.* 2021;10(4):1417-25. doi: <https://doi.org/10.11591/ijere.v10i4.21881>
 24. Suyadi, Widodo H. Millennialization Of Islamic Education Based On Neuroscience In The Third Generation University In Yogyakarta Indonesia. *QJIS Qudus Int J Islam Stud.* 2019;7(1):173-202. doi: <https://doi.org/10.21043/qjis.v7i1.4922>
 25. Susanto E, Suyadi S. The Role of Parents' Attention in the Moral Development of Children in the Amid of COVID-19 Pandemic. *J Ilm Sekol Dasar.* 2020;4(3):355. doi: <https://doi.org/10.23887/jisd.v4i3.25536>
 26. Suyadi, Nuryana Z, Fauzi NAF. The fiqh of disaster: The mitigation of Covid-19 in the perspective of Islamic education-neuroscience. *Int J Disaster Risk Reduct [Internet].* 2020;51:101848. doi: <https://doi.org/10.1016/j.ijdr.2020.101848>
 27. Naheed A, Islam MS, Hossain SW, Ahmed HU, Uddin MMJ, Tofail F, Hamadani JD, Hussain AHME, Munir K. Burden of major depressive disorder and quality of life among mothers of children with autism spectrum disorder in urban bangladesh. *Autism Res.* 2020 Feb;13(2):284-297. doi: [10.1002/aur.2227](https://doi.org/10.1002/aur.2227). Epub 2019 Oct 24. PMID: 31647184.
 28. Suyadi S. Hybridization of Islamic Education and Neuroscience: Transdisciplinary Studies of Aql in the Quran and the Brain in Neuroscience. *Din Ilmu J Pendidik.* 2019;19(2):237-49. doi: <https://doi.org/10.21093/di.v19i2.1601>
 29. Apriloka DV, Suyadi S, Na'imah N. The Use of Games Virus Hunter in Pandemic COVID-19 Against Development of Early Childhood. *Indones J Early Child Educ Stud.* 2020;9(1):19-23. doi: <https://doi.org/10.15294/ijeces.v9i1.39153>
 30. Suyadi S. Immunology Pedagogical Psychology of Pesantren Kindergarten: Multicase Study at Pesantren Kindergarten in Yogyakarta. *Addin.* 2019;13(1):57. doi: <https://doi.org/10.21043/addin.v13i1.3510>
 31. Suyadi, Nuryana Z, Sutrisno, Baidi. Academic reform and sustainability of Islamic higher education in Indonesia. *Int J Educ Dev [Internet].* 2022;89:102534. doi: <https://doi.org/10.1016/j.ijedudev.2021.102534>
 32. Adeni, Hasanah S. Islam and Disaster Communication via Online Media amid the Covid-19 in Indonesia: The Case of Nahdlatul Ulama, Muhammadiyah, and the Salafism. *Al-Milal J Relig Thought.* 2021;3(2):153-69. doi: <https://doi.org/10.30935/ojcm/13095>
 33. Dossey L. Consilience: Are Science and Religion Compatible?. *Explore (NY).* 2019 Jul-Aug;15(4):245-252. doi: [10.1016/j.explore.2019.04.006](https://doi.org/10.1016/j.explore.2019.04.006). Epub 2019 May 6. PMID: 31160229.

34. Nurpratiwi S, Effendi MR, Amaliyah A. Improving Religious Literacy Through Islamic Religious Education Course Based On The Flipped Classroom. *Istawa J Pendidik Islam*. 2021;6(1):16. doi: <https://doi.org/10.24269/ijpi.v6i1.3107>
35. Jin C. Impact of the COVID-19 Pandemic on China's Stock Market Volatility, During and After the Outbreak: Evidence From an ARDL Approach. *Front Public Health*. 2022 May 18;10:810102. doi: [10.3389/fpubh.2022.810102](https://doi.org/10.3389/fpubh.2022.810102). PMID: 35664100; PMCID: PMC9159152.