**Title:**

RESPONS SYSTEM AND EARLY ALERT OF COVID-19 IN HIGHER EDUCATION: A QUALITATIVE STUDY IN PEKALONGAN UNIVERSITY

**Short Title:**

RESPON SYSTEM AND EARLY ALERT OF COVID-19 IN HIGHER EDUCATION

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**ABSTRACT**

**Background**:The COVID-19 pandemic has brought new disruptions for higher education due to a fundamental paradigm shift; by organizing higher education while at the same time mitigating sustainably. The purpose of this study is to determine the mitigation of COVID-19 through the response system and early alertness of universities to prevent transmission.

**Methods**:This qualitative research uses the *phenomenology approach*. The data collection techniques used in this research are *structured interviews* and *participant observation*. Furthermore, *purposive sampling* is used to select informants—validity and reliability with triangulation techniques to measure the convergence of information from other sources.

**Results:** Pekalongan University has developed a policy response system: online learning, mitigation and education. The COVID-19 pandemic has been responded to as a momentum to improve research performance. The response to social distancing suggests implementing a *work from home* system (remote working) to reduce the building's occupancy by half. Early alertness for COVID-19 is oriented towards preventing the spread of cases, including communication and education, risk assessment, and academic activity-based health protocols. Other efforts include providing health protocol support facilities and forming a COVID-19 prevention task force team.

**Conclusions:** Higher education's resilience in facing a pandemic is determined by the early response and alertness systems it builds. Both system models still need to be implemented even though the pandemic is over to anticipate long-term effects on education administration.

**Keywords:** response, alerts, COVID-19, higher education

**Introduction**

The COVID-19 pandemic was first known in Wuhan City, Hubei Province, China, from the discovery of pneumonia cases with unclear aetiology. (1)

At the end of December 2019, it was discovered that the cause of the respiratory syndrome was the novel SARS-Cov-2 (*severe acute respiratory syndrome coronavirus 2*), called Corona Virus Disease-19 (COVID-19). (2) The mortality rate caused by COVID-19 is low at 2%, with a higher mortality rate than SARS and MERS. (3) The spread of COVID-19 occurs very fast and spreads globally throughout the world. (4) The World Health Organization designated COVID-19 as a *public health emergency of international concern* on January 30, 2020. WHO raised the status of COVID-19 as a global pandemic on March 11, 2020. (1) The high level of human mobility globally has caused the coronavirus to spread rapidly throughout the world. (5)

The Indonesian Government officially announced the first two cases of COVID-19 in Indonesia on March 2, 2020. Since then, the addition of daily cases has increased significantly. (6). President Joko Widodo declared the COVID-19 pandemic a national disaster based on Presidential Decree No.12 of 2020 on April 13, 2020. (7) On August 1, 2020, the addition of daily cases had reached 1,560 cases with an accumulated number of 109,936 cases. (8) Data were taken from WHO's COVID-19 Situation Report – 194 dated August 1, 2020, Indonesia ranks third after India and Bangladesh. Case transmission in Indonesia is included in the classification of *community transmission.* (9)

Almost all countries in the world implement social distancing policies to limit human activity and movement. Its goal is to reduce the spread of the coronavirus transmitted from human to human. (10) In fact, Social distancing makes people feel bored staying at home by stopping economic, social, educational, and other activities. (11) The education sector experienced a revolutionary impact and forced universities to make changes and adjustments to the education system. A fundamental paradigm shift in the management of higher education due to COVID-19 has not been anticipated beforehand. To prevent the COVID-19 widespread, almost all universities have closed campuses and switched from face-to-face to online activities. (12) The teaching and learning process completely shifts to e-learning based on information and communication technology. (10)

COVID-19 reveals new disruptions for universities; the return of the value of social solidarity. (12) These two values are actualized in community service activities in the prevention and control of COVID-19. The academic community has good literacy to educate the public. Higher education institutions have sufficient resources to develop innovation and technology to control the impact of COVID-19. (13) A campus's characteristics as a community with a large population, high interaction intensity, and a broad and diverse reach can be at risk of becoming a cluster of case transmission. Therefore, universities need to develop an early warning and response system to prevent the transmission of COVID-19 in their environment. The models of response and early alert system in higher education vary, depending on their resources, commitment, and strong leadership.

The Indonesian Ministry of Health issued a *The Guidebook of Covid-19 Campus Alert* for all educational institutions or universities, regardless of whether they have a health faculty or not. According to their resources, the goal is to develop a COVID-19 response and early alert system. (13) Guidelines for the prevention and handling of COVID-19 in educational institutions issued by Word Health Organization include *Key Messages and Actions for COVID-19 Prevention and Control in Schools, COVID-19: Occupational health and safety for health workers, Schools and other educational institutions transmission investigation protocol for coronavirus disease 2019 (COVID-19)*. Referring to existing guidelines, universities can implement them in a campus environment. Indonesian tertiary institutions' various characteristics and responses pose a challenge in developing a response and early alert system. Thus, this research aims to construct the COVID-19 response and early alert system in universities. This effort is a form of a health-promoting university oriented to aspects of health promotion and case prevention. The study stages include a response and early alert system. The research was conducted at Pekalongan University, Indonesia.

# Methods

The study was conducted in June - August 2020, when cases increased significantly and spread to almost all Indonesian regions. This type of qualitative research was chosen to explore the response and early alert system for COVID-19 in universities.

Researchers use a phenomenology approach to develop a deeper understanding. (14) Data collection used two techniques, namely structured interviews and participant observation. Structured interviews were conducted individually, structured, in-depth, openly, and dynamically. (15) In addition to interviews, data collection was carried out using the 'participant observation' technique, in which researchers joined the Pekalongan University COVID-19 early alert system. Researchers took data in the context of the response and early alert system for COVID-19 in higher education and developed questions according to research needs. (16)

Informants who knew information about COVID-19 early alert efforts were selected using purposive sampling. The primary informants were the Chancellors and Vice-Chancellors 1, 2, and 3. Triangulation informants were the Chair of the Quality Assurance Institute, the Chair of the Institute for Research and Community Service. Researchers use triangulation techniques to develop a comprehensive understanding and measure the convergence of information from other sources. (17) The triangulation informant chosen was The Dean considering having information related to the COVID-19 control policy at the faculty.

# Results

**The response of the academic community to the COVID-19 outbreak**

The Government officially announced the first case of COVID-19 in Indonesia on March 2, 2020. Pekalongan University has shown different responses. Based on the analysis of lecturers' conversations in social media groups, there is a fear of contracting the coronavirus. Nevertheless, some deny the existence of COVID-19 and choose not to believe it. Several academy lecturers responded to the coronavirus outbreak from a spiritual perspective and responded by surrendering to God. This view makes them feel unnecessarily afraid of facing a pandemic outbreak.

Lecturers who believe in the anti-science theory consider that the coronavirus results from a conspiracy that aims to destroy world civilization. In general, academicians respond to the COVID-19 pandemic from a scientific point of view. In this group, they provide support for prevention and control efforts. Based on participant observation, the Pekalongan University campus community has not shown 'extra' behaviour to protect themselves from the risk of coronavirus transmission. Wearing a mask, washing hands, and maintaining physical distance have not been done massively.

At the beginning of the pandemic, the world community did not know much about the SARS-Cov-2. People tend to seek as much information as possible. Information related to COVID-19 was shared massively and rapidly, causing an uncontrolled infodemic. This situation also occurs in Pekalongan University; COVID-19 information is shared on social media groups all the time. They tend to want to share the first and most recent information due to the information being shared continuously. However, some have rejected information related to COVID-19.

**Pekalongan University Response System**

The Government officially established a social distancing policy that President Joko Widodo delivered at a press conference at the Bogor Palace on March 15, 2020. Responding to Government policies at the start of the pandemic, Pekalongan University established three strategic policies for preparedness to face COVID-19. *First*, the Chancellor's Circular Letter regulates three efforts to deal with COVID-19. 1) Replace academic activities with an online system along with information technology support. 2) COVID-19 mitigation, which is oriented towards preventing, reporting, tracking, and handling cases. 3) Encourage academicians to play an active role in preventing the spread of COVID-19 by carrying out education, promotion, and prevention.

*Second*, make the COVID-19 pandemic a strategic momentum to improve research performance. Through the Chancellor's policy, Pekalongan University encourages lecturers to carry out scientific research and studies on COVID-19 from various scientific frameworks. *Third*, enforce work from home regulations to reduce the campus capacity to apply physical distancing.

**Early Alert**

At the end of June 2020, the COVID-19 pandemic outbreak is in its third month in Indonesia. The addition of new cases reached 1,293 with an accumulated number of 56,385 cases. Pekalongan University prepares mitigation efforts by implementing a pandemic outbreak early alert system. The early alert system applies five approaches: 1) communication and education, 2) build a risk assessment system, 3) prepare a comprehensive campus health protocol, 4) build a health protocol support facilities, and 5) establish a campus task force team for handling COVID-19.

*Communication and education* emphasize COVID-19 literacy to control infodemics and prevent institutional panic. Information about COVID-19 is conveyed through meeting forums, webinars, and scientific discussions. Increase the literacy of academics regarding COVID-19 to place posters or banners at accessible and strategic locations. Pekalongan University uses the official website [www.unikal.ac.id](file:///C:\Users\Yuniarti\AppData\Local\Temp\www.unikal.ac.id), social media, and YouTube channels as communication channels and information on COVID-19.

The second approach is an *online system-based health risk assessment*. The risk assessment results consist of three categories: low risk, medium risk, and high risk. Permits to enter the campus environment are given to academics with low risk. The health risk assessment includes a history of illness that leads to the signs and symptoms, a history of travel from abroad / outside the city, a history of congenital diseases, and a history of contact with an infected person. The third approach is *to establish a health protocol* that includes academic, non-academic, and student activities. The health protocol also regulates case tracking, health protocols for activities carried out outside the campus, and coordination protocols with local governments in case tracking and referral.

The fourth approach is *to provide facilities to support the enforcement of health protocols*. Includes hand washing stations, providing masks and hand sanitizers, tools for measuring temperature, engineering the entrance and exit of buildings, adjusting the distance in student service units, setting parking zones based on safe distances, and improving health clinic facilities and functions. The fifth approach is *to establish a task force team* tasked with managing and coordinating all efforts to prevent and handle COVID-19 on campus. The task force team is also tasked with coordinating with regional cluster teams in testing, tracing contacts, and referrals in case of case transmission within the campus environment.

# Discussion

COVID-19 pandemic occurs in the modern era, where people around the world are connected globally. The flow of information spreads rapidly without limits through social media and other media. Social media can deliver infodemic phenomena related to anxiety and panic events. (18) The COVID-19 pandemic creates a tense atmosphere, fear, anxiety, insecurity, and uncertain situations. Psychological stress usually occurs in people who are not ready to face new situations. These conditions may harm life and cause health crises. (19) The high level of anxiety during pandemic creates new problems besides COVID-19 itself. It also can lead to functional disorders, alcohol and drug abuse, spiritual disturbances, hopelessness, and increased suicidal thoughts. (20)

Among Pekalongan University academic community, there are different views on COVID-19 from a religious perspective. Some believe that the coronavirus is God's creation so that humans do not need to be afraid of other God's creatures. This peculiar view has the potential to become a contradictory message to efforts to break the chain of transmission of COVID-19. The second view is to believe in the dangers of coronavirus and its impact on human life. Academic groups with this view tend to obey efforts to prevent the transmission of COVID-19. The divided spiritual views reflect the dynamics of society's social structure. (21) Spirituality provides positive values ​​as coping with building resilience and hope in facing the pandemic. Religion and spirituality are inseparable parts of human life and provide physical and psychological health. (22) Indonesian people who have a high level of spirituality positively correlate with health status. (23)

One of the challenges in facing COVID-19 is the development of a non-scientific (anti-science) perspective. Anti-science attitudes can worsen the handling of a pandemic. The only way to deal with anti-science attitudes is to think scientifically by increasing literacy through research. (24) The campus community is a community that has high literacy and is accustomed to thinking scientifically. (13) The emergence of an anti-science attitude among a small number of Pekalongan University academics is an anomaly and does not represent Pekalongan University's efforts to deal with COVID-19.

Another challenge in handling COVID-19 is poor communication and information to the public. As a result, the community lost confidence in the Government's ability to handle the pandemic. Effective communication is a crucial intervention to increase public response. Adequate information regarding COVID-19 can reduce the risk of life loss and other losses due to a pandemic. (25)

Every epidemic is always accompanied by a very swift and uncontrolled flow of information that becomes a double burden in its handling within the era of social media when it causes information to spread quickly beyond the transmission of the virus itself. Infodemics become an invisible disaster if no correct, accurate, and credible sources are available. WHO states that we are not only fighting a pandemic but also fighting infodemics. (26)

Based on the data on April 1, 2020, UNESCO stated that 1,542,412,000 students in 185 countries were affected by the COVID-19 due to schools and universities' closure. The IUA Impact COVID-19 Global Survey data on 424 universities in 109 countries (Africa, Europe, America, and the Asia Pacific) stated that 59% of institutions have stopped all activities and closed completely. However, as many as 30% of institutions open some activities but with significant obstacles. (27) World Health Organization instructs educational institutions to track cases in their environment and provide real-time reports by referring to WHO protocol. (28) Pekalongan University responds quickly to the crisis due to the pandemic through three strategic steps. Policies oriented to building a response system and an early alert system for COVID-19.

The policy to stop all campus activities and use an online-learning system is an institutional effort to maintain health protection. Online learning is the best choice in the COVID-19 crisis. However, online learning also has various implications for students with different characteristics. Online learning is not able to provide an excellent professional relationship between educators and students. The transfer of learning in online systems places more emphasis (than offline systems) on introducing new systems and adaptations. Quality assurance in online learning still has to follow the principles of quality education. (29) The Government needs to develop an online learning policy as a reference framework for educational institutions. This support is to encourage universities to compete globally. Online learning is one of the COVID-19 pandemic response systems to minimize the impact on universities or other educational institutions. (30)

Higher education institutions are taking a more prominent role in mitigation through innovation and research. Innovations that have never been thought of before can be born in a crisis. Literacy and knowledge of COVID-19 are integrated into educational curricula and internet platforms to build collective awareness. Crises can be resolved if there is mutual awareness to change the situation together. (31) Ironically, even though they have been preparing for the industrial revolution 4.0 for years, universities still experience disruption when they shift their online activities. The COVID-19 pandemic has brought higher education institutions to carry out a more profound and broader social solidarity role. This situation puts tertiary institutions at a balance point in the framework of the industrial revolution 4.0 while at the same time playing a humanist role. (12)

Exploration of knowledge regarding COVID-19 can increase the number of products and types of research. Research plays a strategic role in the policy-making process related to handling COVID-19. (32) During the campus closure period, environmental hygiene and sanitation factors are fundamental in breaking the COVID-19 transmission chain.

Health services in educational institutions are strengthened to improve the campus health monitoring system—the pandemic impacts students' mental health, which encourages the increasing need for mental health services. Mental health counselling can be virtually provided, which is easily accessible to students. (33)

Following the Government's appeal, Pekalongan University's academic community has *work from home* since mid-March 2020. Working from afar provides two benefits: protecting health from the risk of COVID19 transmission and keeping business running; to achieve effectiveness and efficiency, a work from home system needs technical support and human resource development under changes in organizational processes. In the long term, remote working systems will be maintained even after the pandemic has ended. (34)

# Conclusions

Pekalongan University is one of the higher education institutions affected by COVID-19, as experienced by other universities globally. Higher education resilience during the COVID-19 pandemic is determined by how universities build response systems and alert systems.

The speed and accuracy of universities in responding to crises can reduce the risks and impacts of COVID-19, especially health risks. We cannot be sure that the long-term impact of COVID-19 will end. Therefore response and alertness systems can be developed according to the situation.

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## **References**

1. Oh TK, Choi J-W, Song I-A. Socioeconomic disparity and the risk of contracting COVID-19 in South Korea: an NHIS-COVID-19 database cohort study. BMC Public Health. 2021;21(144):1–12.

2. Choi B, Jegatheeswaran L, Minocha A, Michele A, Nakhoul M, Mutengesa E. The impact of the COVID-19 pandemic on final year medical students in the United Kingdom: a national survey. BMC Med Educ. 2020;20(206):871–5.

3. Shoja E, Aghamohammadi V, Bazyar H, Moghddam HR, Nasiri K, Dashti M, et al. Covid-19 effects on the workload and mental health of Iranian healthcare workers. BMC Public Health. 2020;20(1636):1–7.

4. Doumbia S, Sow Y, Diakite M, Lau CY. Coordinating the research response to COVID-19: Mali’s approach. Heal Res Policy Syst. 2020;18(105):1–7.

5. Ayuningtyas D, Haq HU, Utami RRM. Initiating global civil society as a strategy for handling the Covid-19 public health threat: A policy review. Kesmas. 2020;15(2):1–5.

6. Nuraini R. Kasus Covid-19 pertama, masyarakat jangan panik. indonesia.go.id. 2020.

7. Humas. Presiden Tetapkan Bencana Non alam Penyebaran Covid-19 sebagai Bencana Nasional. Sekretariat Kabinet Republik Indonesia. www.setkab.go.id/presiden-tetapkan-bencana-nonalam-penyebaran-covid-19-sebagai-bencana-nasional.2020.

8. Gugus Tugas Percepatan Penanganan COVID-19. Peta sebaran COVID-19. covid19.go.id. 2020.

9. WHO (World Health Organization). Coronavirus disease (COVID-19) Situation Report–194. WHO. www.who.int/docs/default-source/coronaviruse/situation-reports/20200801-covid-19-sitrep-194.pdf?sfvrsn=401287f3\_22020.

10. Amir LR, Tanti I, Maharani DA, Wimardhani YS, Julia V, Sulijaya B, et al. Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. BMC Med Educ. 2020;20(1):1–8.

11. Kim JY, Han JO, Lee H. Recommendation for response to the COVID-19 pandemic: Korean context of “distancing in daily life,” considering vulnerable population. Int J Equity Health. 2020;19(1):1–5.

12. Mas’udi W, Winanti PS, editors. Tata Kelola Penanganan COVID-19 di Indonesia : Kajian Awal. Yogyakarta: Gadjah Mada University Press; 2020.

13. Kementerian Kesehatan RI. Buku Panduan Kampus Siaga COVID-19. Garini W, Marsuli, Aryani WS, Sibuea D, editors. Jakarta: Kementerian Kesehatan RI; 2020.

14. Tenny Steven, Brannan GD, Brannan JM, Sharts-Hopko C. N. Qualitative Study. Treasure Island: StatPearls Publishing; 2020.

15. Maxwell JA, Reybold LE. Qualitative Research. In: International Encyclopedia of the Social & Behavioral Sciences: Second Edition. 2015.

16. Moen K, Middelthon AL. Qualitative Research Methods. In: Research in Medical and Biological Sciences: From Planning and Preparation to Grant Application and Publication. 2015.

17. Carter N, Bryant-Lukosius D, Dicenso A, Blythe J, Neville AJ. The use of triangulation in qualitative research. Oncol Nurs Forum. 2014;41(5):545–7.

18. Amad A, Psychol HBMC, Amad SH Al, Hussein A. Anxiety among dental professionals and its association with their dependency on social media for health information : insights from the COVID ‑ 19 pandemic. BMC Psychol. 2021;1–9.

19. Yıldırım M, Akgül Ö, Geçer E. The Effect of COVID-19 Anxiety on General Health: the Role of COVID-19 Coping. Int J Ment Health Addict. 2021.

20. Choi EPH, Hui BPH, Wan EYF. Depression and anxiety in Hong Kong during covid-19. Int J Environ Res Public Health. 2020;17(10).

21. Al-Astewani A. To open or close? COVID-19, mosques and the role of religious authority within the British Muslim community: A socio-legal analysis. Religions. 2021;12(1):1–26.

22. Ribeiro MRC, Damiano RF, Marujo R, Nasri F, Lucchetti G. The role of spirituality in the COVID-19 pandemic: A spiritual hotline project. J Public Heal (United Kingdom). 2020;42(4):855–6.

23. Rias YA, Rosyad YS, Chipojola R, Wiratama BS, Safitri CI, Weng SF, et al. Effects of Spirituality, Knowledge, Attitudes, and Practices toward Anxiety Regarding COVID-19 among the General Population in Indonesia: A Cross-Sectional Study. J Clin Med. 2020;9(12):3798.

24. Sumartiningtyas HKN. Hoaks Covid-19 dan Infodemik, Tantangan Ilmuwan Indonesia Sikapi Konstruksi Anti-Sains. www.kompas.com. 2020.

25. East M, Covid- T, Rcce E, Rcce E, Rcce E, Rcce E. Risk communication and community engagement readiness and response to coronavirus disease (COVID-19). 2020;(3):1–5.

26. Hua J, Rajib S. Corona Virus (COVID-19) “Infodemic” and emerging issues through a data lens: the case of China. Int J Environ Res Public Health. 2020;17(7).

1. G. Marinoni, L. H. Van’t, and T. Jensen, *The Impact of Covid-19 on Higher Education around the World*. Paris: International Association of Universities (IAU), 2020.
2. World Health Organization, *Schools and other educational institutions transmission investigation protocol for coronavirus disease 2019 (COVID-19)*. 2020;2019(9):1-80.
3. S. A. Ahmed *et al.*, “Model for utilizing distance learning post COVID-19 using (PACT)TM a cross sectional qualitative study,” *BMC Med. Educ.* 2020;20(400):1–13. 2020.
4. R. K. Alhassan, “Assessing the preparedness and feasibility of an e-learning pilot project for university level health trainees in Ghana: a cross-sectional descriptive survey,” *BMC Med. Educ.* 2020;20(465):1–10.
5. A. Chickering and A. Chickering, *Higher education in pandemic era*, First edit. Patiala: Twentyfirst Century Publication, 2020.
6. B. Yazdizadeh, R. Majdzadeh, A. Ahmadi, and B. Mesgarpour, “Health research system resilience: lesson learned from the COVID-19 crisis,” *Heal. Res. Policy Syst.* 2020;18(1): 1–7.
7. C. M. Toquero, “Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context,” *Pedagog. Res.*2020; 5(4): 063.
8. E. Brynjolfsson, J. J. Horton, A. Ozimek, D. Rock, G. Sharma, and H. TuYe, “Covid-19 and Remote Work: an Early Look At US Data,” Cambridge, 27344, 2020.