

Are schools in Malaysia ready to open?

Norhayati Mohd Zain^{1,2}, Nur Anis Izzati Che Mut¹, Siti Hajar Norhan³, Medina Marzuki²

¹Research Management Centre, KPJ Healthcare University College, Negeri Sembilan, Malaysia

²School of Health Sciences, KPJ Healthcare University College, Negeri Sembilan, Malaysia

³Psychology Department, KPJ Healthcare University College, Negeri Sembilan, Malaysia

Article Info

Article history:

Received Aug 8, 2021

Revised Jul 26, 2022

Accepted Sep 1, 2022

Keywords:

Challenges

COVID-19

Readiness

School reopening

Teachers

ABSTRACT

The decision on school reopening has evoked mixed reactions from parents as they become nervous regarding this action and are uncertain to send their children to school. Therefore, this study was conducted to assess the teachers' perspectives on the readiness and challenges of school reopening in Malaysia. A study was conducted through online interview sessions amongst 20 teachers for primary and secondary schools at Seremban district, Negeri Sembilan, Malaysia from October 2020 until February 2021. Data were coded into themes and sub-themes based on the similarities of the data. The respondents in this study agreed that they are ready for school reopening and fully follow the guidelines prepared by the Ministry of Education Malaysia such as checking body temperature, physical distancing inside and outside the classroom, enforcement of wearing mask and sanitize the area regularly. Undeniably, the teachers faced some challenges regarding new norms during school sessions. Therefore, to ensure that the students receive proper education, at the same time the measures to contain the transmission of COVID-19 are followed properly, a few suggestions have been made. The cooperation from the teachers, parents and students are also needed to ensure and achieve the smoothness of school sessions.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Norhayati Mohd Zain

Research Management Centre & School of Health Sciences, KPJ Healthcare University College

71800 Nilai, Negeri Sembilan, Malaysia

Email: norhayati@kpjuc.edu.my

1. INTRODUCTION

The COVID-19 pandemic is giving a major impact on society, whereby frequently increasing the social and economic inequality. In an effort to contain its spread, the suspension of face-to-face learning in schools was implemented. However, the prolonged closure of schools due to COVID-19 pandemic had greatly impacted the education system. To date, the closure of schools still applies in order to counter and prevent the spread of COVID-19 virus amongst children. School closures is recognized as a common tool in the battle against COVID-19 virus. Children are affected by the virus in the same way as other age groups and they may serve as carriers in spreading it [1]. It is found that younger children with mild to moderate COVID-19 virus infection have high amount of SARS-CoV-2 viral RNA in their nasopharynx as compared to older children and adults [2]. This may make them become the medium for spreading the virus. Besides, their behavioral habits when meeting friends at schools are of concern. Therefore, closing schools is the only option to control the children and COVID-19 pandemic. It is widely acknowledged as one of the most effective actions for preventing the pandemic [3], [4].

However, the effect from the prolonged school closure had caused loss in educational physical activity, mental health, and increased exposure to violence on students at home, reduce student's performance and lack of learning motivation [5]–[7]. Besides, children and teenagers are at a significant risk

of being victimized under the exceptional situation brought on by the COVID-19 issue [8]. Concurrent effects on the economy due to the pandemic also makes the parents unable to provide necessary learning equipment for their children. This gave huge impact on the students' financial constraint due to poor family background, whereby the students experienced a more significant learning loss during this period [5]. The expensive cost for internet packages and laptop are the stresses faced by poor families as they feel that the daily basis is more prioritized than the learning equipment [9]. The concern is that compared to the children from higher socio-economic background, the children in lower socio-economic backgrounds were less likely to participate in online classes [10]. Furthermore, in reaching the equality and balancing the students' needs were difficulties faced by the schools [11]. Therefore, the continuity of school closure may lead to more impacts on the students and teachers. Data on learning loss during the school closure have shown that it is a struggle to adopt online learning and the students made little progress while learning from home [12], [13].

School reopening is the way to overcome this. Careful planning can help in addressing the concerns of school reopening. Standard guidelines were suggested for a few countries on the school reopening. In Denmark, the government has decided to allow the children aged of up to 11 years old to return to school on April 15th, 2020, with the adoption, such as: small groups of children for lessons and playtime, frequent hand washing, and spacing between desks of about six feet apart. These measures were found to be effective [14]. Similarly in Japan, the measures on daily temperature checking, physical distancing and wearing face masks to control the infection were implemented [14]. This is not an exception for Malaysia with the announcement made by the Education Senior Minister on school reopening started on July 15th, 2020 with the stringent standard operation procedure (SOP) rules that were enforced, such as social distancing, suspected sick students were not allowed to attend school, no physical education class, no school assembly, one-meter distance apart between tables and mandatory to wear face masks throughout the school sessions [15].

Despite the suggested strategies to counter the infection, the confidence level of parents to send their children back to school has become relatively low. Decision on reopening schools has raised the concerns among the parents in the aspects of health and safety, despite the Ministry's strict enforcement on SOP [15], [16]. The concern is also raised in other countries, whereby school reopening after the lockdown is lifted is likely to cause an increase in the number of COVID-19 cases [17]. About 30% of parents in the United States responded that they would probably or definitely keep their child at home if school opened in fall season. They worried that their children would catch the virus or that the health care system would not be able to protect their loved ones, and cause multisystem inflammatory syndrome in children [18].

However, it is reported that severe COVID-19 disease is less likely to happen amongst infants, children and young adults as compared to older adults. Large epidemiological studies suggest that children make up only 1% to 2% of all COVID-19 cases [19]. Therefore, it is relatively safe for school reopening according to the medical evidence [20]. Currently, there is a limited study on the school reopening in Malaysia. According to the previous study, the SOP implementation in schools did not go as intended due to facility and workforce issues [21]. Consequently, this study was conducted amongst teachers to assess their perspectives on the readiness and challenges of school reopening in Malaysia. This would consider on the preparations of school reopening for children. The findings on this study may raise confidence amongst parents to send their children back to school and also for the institutions to improve the infection control measures. It is important for school authorities to address these concerns amongst parents to increase their confidence level [22]. This may also improve the teaching and learning approach amongst teachers and schools, besides, ensuring the compliance on COVID-19 SOP. Therefore, the students can receive their rights in education with more effective learning in any conditions.

2. RESEARCH METHOD

2.1. Study design and population

This qualitative study was conducted amongst teachers in primary and secondary schools in Seremban, Negeri Sembilan. A total of 20 teachers were selected by using the purposive sampling method [23]. The results of this study are important because they can provide an insight into clear preparations for the teachers and school authorities for school reopening. Permission was obtained from the Institutional Review Board of KPJ Healthcare University College with a registration number (KPJUC/RMC/SOHS/EC/2020/314), Ministry of Education Malaysia and Jabatan Pendidikan Negeri Sembilan. Respondents had verbally consented to participate prior to any data collection.

The study began with a discussion with the headmasters and principals of respective schools for the study approval. Respondents were approached through emails or phone calls with the date for an interview was set. The interview was conducted through Google Meet to abide with the SOP of COVID-19. Prior to the interview, respondents were given clear explanations about the study and informed of their rights. Respondents were assured that all information would remain confidential.

2.2. Construction of interview script

The literature and guidelines were firstly reviewed to provide a questionnaire framework. Then, a self-developed and structured questionnaire was developed by the researchers. The self-developed interview questions were established in Malay language, and then translated into English before being presented to the experts for evaluation and to check whether they were clear and understandable for the respondents.

2.3. Data analysis

The data obtained were independently examined to form the theme and sub-themes. The inductive content analysis began with data familiarization by repeatedly listening to audio recordings, transcriptions, and reading the transcripts [24]. The agreed themes were used while the disagreed themes were discussed and rearranged. The content analysis process involved coding and categorizing of data, finding themes, organizing and defining the data based on the codes and themes. Then, the findings were interpreted based on direct quotations from the opinions of interviewed teachers. The discussion had agreed on themes which reflected the readiness for school reopening. Table 1 summarizes five main themes highlighted by the respondents as key of school reopening measures done in selected schools in this study.

Table 1. Measures for school reopening

Themes	Thematic statement
Change in school schedule	Staffs briefing conducted before school reopening New academic calendar Alternative activities
Minimizing contact	No curricular activities, gathering and assemblies Discouraged canteen usage Physical distancing in classroom Separated tables
Hygiene and cleaning	Canteen cleanliness and food preparation Disinfect and cleaning classroom Hand sanitizer provided Wearing masks
Student emotional and health screening	Liaising with school counsellor Motivational program Body temperature monitoring screen Isolation room
Dissemination of information	Sent home if students not well Awareness on COVID-19 posters Guidelines are disseminated Simulation of SOP to parents and students Reminder to students and parents

3. RESULTS AND DISCUSSION

The school closure had wreaked havoc on the education system, disrupting familiar patterns of the education system and impacting the teachers and students. After a series of school closure, on June 24th, 2020, the Malaysian Government has allowed more than 500,000 students from about 2,500 schools to return to their schools as they were sitting for the public examination shortly [25]. The longer time the children remain out of school, the greater loss and harm will be faced by them [26]. This school reopening came along with the guidelines on SOP, which included daily temperature checks, children and teachers to wear face masks at all times and social distancing practice, including no outdoor activities and sports [15]. The parents gave negative feedbacks regarding their worries on COVID-19 infection amongst the children.

According to Viner *et al.* [27], there was preliminary evidence that children younger than 10 to 14 years had lower susceptibility to COVID-19 infection than adults. However, there was weak evidence that children and adolescents play a limited role in the COVID-19 transmission. Furthermore, a preliminary result by Li *et al.* [28] suggested that children may be less likely to be infected or infect others. However, the evidence was limited. This uncertain impact of school reopening on COVID-19 transmission is unclear and there is no evidence that children are more likely to transmit as compared to adults, unlike with other respiratory viruses [7]. Moreover, there is no clear evidence that children with COVID-19 would have severe illness or die [29]. Together, these data suggest that children are likely to be amongst the safer groups [7]. However, they still need to practice and follow the SOP in order to prevent the COVID-19 transmission. Therefore, the readiness and preparation of schools and teachers are important to gain the trust from the parents in sending the children to school. In this study, the respondents agreed that they were ready for the school reopening and will follow the rules and guidelines provided by the Ministry of Education.

3.1. School reopening measures

3.1.1. Change in school schedule

After the school reopening, many amendments and changes were needed to keep the children on track with their education. During online classes, they might not be able to follow some modules hence, respondents have to make a new timetable and revise the modules to focus on important ones. This also was emphasized on the guideline by Ministry for teachers to conduct their teaching and learning sessions according to the children's preparation and current situation [15]. Teachers must respond to the changing needs of children throughout a lesson, adapt to manage unexpected situations relating to children's behavior, and make adjustments to teaching plans when the timetable changes [30].

"Before the school starting, we, the teachers have our meeting to discuss on the students, the classroom, and the school session. In this, we discuss on the way of managing and handling the necessary procedure and duties" (Respondent 7)

"We prepared the new timetable for the class to ensure the subjects can be covered. We are guiding the students so that they are able to catch up easily" (Respondent 10)

"The subject was arranged accordingly, the hard subject such as Arabic period become shorter to lessen the burden of students. We also pick the most important topic to be covered. Teacher that is not major in the subject learn from other teacher to help covering many classes, too" (Respondent 18)

In this study, most respondents stated that their schools followed the guidelines and most activities were not allowed. Instead of having co-curricular or sport activities, some were changed to interactive games or competition, either in class or online. These were able to help the students to have fun after study. In agreement to this, Fawkner *et al.* [31] stated that even though there was limited evidence on benefits of home-based activities, activities that need some movements are beneficial, such as playing traditional games indoors, dancing to music and other creative courses.

"In my school, the assemblies are completely banned. Sports and co-curricular activities were also banned" (Respondent 3)

"Other activities were done during co-curricular sessions such as poster competitions" (Respondent 5)

"During COVID-19 we still undergo this activity, but in groups where the students won't be moving around in class. After the school sessions end, we had a lot of programs such as healthy lifestyle program where the parents have to upload videos on their activities every Wednesday. On sports, they had to upload like a routine, they had to record and play the video in Google Meet" (Respondent 14)

3.1.2. Minimizing contact

According to the Guidelines of School Management and Operation in New Norm 2.0 by Ministry of Education Malaysia, assemblies or activities that require students or staff gathering are not allowed. Besides, the co-curricular activities were allowed in minimal ways with strict SOP, depending on the current instruction by the Ministry [15]. Physical distancing was the most widely used policy to control the spread of COVID-19 [32]. This is also suggested by Viner *et al.* [33] for schools to close the playground and stop all communal activities, such as dining, assemblies and sports.

"No curriculum activities were done in school but we changed them to activities in class such as BINGO during co-curriculum time. This an example of entertainment for them" (Respondent 1)

"No sports or co-curricular activities allowed; thus, we conduct online competitions. During class, we conducted group assignments in a form of rows" (Respondent 2)

Practicing physical distancing by separating the desks by one meter apart is also another step implemented by the schools in this study. Previous study emphasized that this measure was to reduce the incidence of COVID-19, which is mainly transmitted by viral particles whenever people talk, breathe, cough, or sneeze [34]. Keen preparations were made by school authorities to ensure there was physical distancing between the children not only in class, but also outside the classroom. Avoiding group works and no gathering in school canteen were also implemented to ensure that the students did not have direct contact with each other. This was suggested in previous study [33]. According to the study, it was practiced in Taiwan, whereby the children were separated by newly built plastic partitions between their desks in the classroom. In Denmark, they even limited the school reopening to ensure that there was sufficient physical

classroom space to accommodate small size of classes, which required them to have morning and afternoon school sessions [35]. Centre for Disease Control and Prevention also emphasized that physical distancing should be maximized to the greatest extent possible and revised physical distancing to at least three feet between students [36]. A systematic review study provided the evidence that current policies implemented on at least 1-meter physical distancing are related with a significant reduction in infection and distances of two meters may be even more effective [37]. Most respondents also stated that the children were not allowed to eat at the canteen, so food will be served to the students in the classroom at their own tables to limit movement.

“We have arranged the table according to the guideline. The tiles and pathways were painted or taped to ensure they followed physical distancing and the correct pathways” (Respondent 9)

“We rearranged all the school items in class and we would always remove all the irrelevant items that have nothing to do with the class, so the students won’t touch all those items” (Respondent 11)

“The table is well prepared and disinfected every day” (Respondent 2)

“In my school, the teacher will take the food and students will eat in the classroom. So, the movement of students will be lesser” (Respondent 10)

3.1.3. Hygiene and cleaning

The infrastructure and facilities management were important and needed detailed attention. In this study, the respondents stated that their schools have planned and prepared the facilities and equipment in class according to the guideline by the Ministry. Most respondents stated that their schools also made an effort to provide hand sanitizers in school, so that the children can use them. Face masks wearing in schools were strongly enforced. These measures were also recommended by previous studies [38], [39]. It is also suggested for hygiene practices and infection control implemented [33]. This was also implemented in Denmark and Switzerland, whereby hand washing and sanitizing were practiced when the school reopened [35], [40]. Wearing face masks during school sessions was also an additional component for school reopening in Belgium, Japan, South Korea and Taiwan [40]. Wearing face masks has been considered as the first step to prevent and contain the spread of disease, while the hand sanitizer acts as an antiseptic, and thus these need to be worn correctly [41], [42]. This will develop a new good habit for the children and also reduce the likelihood of COVID-19 transmission. It is agreed by majority that wearing face masks in public places is important to prevent COVID-19 infection [43]. The evidence on face masks effectiveness could be seen from the data, schools that required teachers and staff to wear face masks had 37% fewer cases and 21% fewer cases in schools that mandated children to wear face masks [44].

“We also provide the students with face masks and hand sanitizer in every classroom. Even NGOs have actually delivered face shields for all students” (Respondent 14)

“The school authorities ensure the safety of school by placing hand sanitizers in the area which easier for students to reach” (Respondent 16)

Besides, the canteen staff were given explanations on cooking and food preparation. Based on the literature review, some measures were taken with regard to school canteens where schools should ensure optimal hygiene during food preparation, offer the chance to eat in classroom, organize separate meal time and clean after every utilization [45].

“For recess, the students are not allowed to go out, students need to eat in their respective classroom and are always advised to wash their hands after eating and sanitize the table after eating” (Respondent 13)

“In the canteen we always remind and explain the canteen’s staff that they need to prepare food that is sealed and ensure the cleanliness such as wearing face masks, and practices hand hygiene” (Respondent 15)

3.1.4. Students’ emotional and health screening

Children may face increased social, emotional, and mental health challenges brought on by the COVID-19 pandemic, and therefore the presence of a coordinated health program, which is led by school nurses or teachers, would contribute to identify illness and management of COVID-19 in the classrooms [46]. The respondents in this study said that they even gave attention to children, and helped them if they were having problems in studies or mentally disturbed during the pandemic. Besides, the body temperature checking frequently done to ensure the conditions of the students.

“We change the session to motivational programs through online” (Respondent 3)

“For students that we see likely to have difficulties, we will try to talk to them or counsellor will talk to them. So, if they have any problems, we will try to help them to ease their burden to ensure the good mental health of the students” (Respondent 8)

“The challenge for this school reopening is new responsibility such as taking temperatures” (Respondent 1)

“We have prepared an isolation room but usually we call the parents to come fetch them if they are sick. In the room we provide the face masks, hand sanitizers and necessary equipment for COVID-19” (Respondent 3)

3.1.5. Dissemination of information

To ensure that the children were aware about the SOP and guidelines that they should follow, the school management decided to print out posters and hang them in the school areas. By doing this, children have an easy access to read the guidelines. The parents were also updated regarding SOP, whereby they were not allowed in the school area. The respondents also stated that they always reminded the children to keep them aware and abide the SOP. According to guidelines provided by the Ministry, school authorities should exhibit printed materials regarding hygiene and safety measures which can be downloaded from the Ministry of Health website [15].

“The SOP guidelines were put up everywhere around the school. We also always remind them about the SOP and ensure they follows the rules” (Respondent 1)

“We also did a lot of simulation for student regarding the direction and school plan for COVID-19” (Respondent 9)

“We held meetings between teachers and parents and we also explained all regarding SOP and we always remind the parents to always remind these new rules to the children” (Respondent 13)

“We have a SOP simulation and also provide a video for parents to show what to do in an event that may happen and what to follow” (Respondent 20)

3.2. Impact of school reopening on teachers

3.2.1. New duties

Despite the preparations and readiness of schools and teachers regarding the school reopening, some challenges were faced. The new school norm has a huge difference as compared to previous school sessions. With the guidelines by the Ministry, there are some new tasks and responsibilities for the teachers. The respondents shared they had new tasks in schools, whereby they needed to check the students' body temperature, keep alert about the condition of students, ensure cleanliness of the surroundings, monitor the students and extra preparations for classroom and schools. In a study conducted in Spain at the beginning of the pandemic, teachers also reported that they had workloads, psychosomatic problems, and exhaustion [47]. The development of pandemic fatigue may lead to greater violations of SOP [48].

“We got new tasks such as we have to check the body temperatures of students so we need to arrive earlier than usual and stand by to monitoring the students' entrance in schools” (Respondent 7)

“The workload is getting twice as much as before. We have to move around the school just to take care of students and advising them to follow SOP” (Respondent 8)

“We got extra work where we need to know the background of students such as medical history because they are not encouraged to come to school” (Respondent 15)

3.2.2. Students' attitudes

From this study, the respondents were stressful due to the new SOP and guidelines in ensuring the children obey the rules correctly. The pandemic has not only affected the mental state of children [49], but also the teachers. This is similar to a study in Spain, whereby a high percentage of teachers suffered from symptoms of anxiety, stress and depression when the schools and universities reopened [50]. The factors caused high level of stress amongst school-aged children, having to deal with a heavy workload, combined with the stress of carrying out family care duties [50]. Furthermore, with a large number of children in schools, it has become a challenge for them to keep and monitor the student movements. To ensure that the students follow the guidelines and SOP is also a challenge for the respondents.

“Handling children is quite hard as they move around” (Respondent 2)

“As my school is the biggest with many students, taking care and monitoring of the students is very hard for us. Some of them did not obey the new rules and SOP especially when teachers are not around” (Respondent 6)

“We need to always remind the students on SOP but the students do not accept this new normal and always moving around and gather with friends, not wearing face masks. We also need to arrange tables following social distancing guideline” (Respondent 9)

“A quite difficult to handle the students as they are excited when seeing their friends” (Respondent 13)

School reopening challenges happened in ensuring the smoothness of school sessions and to minimize the transmission of COVID-19 in school. These burden faces by the teachers can be minimized if the government and school authorities able to find a way to make these guidelines more flexible, easier to understand and have clear action plans for teachers, but it can still maximize the COVID-19 preventions. An open-discussions can be done amongst teachers to hear any suggestions and feedback from their sides. Furthermore, guidelines provided by the Ministry are good measures [51]. However, there is lack in specific, clear instruction and action plans for important areas, such as the way to strengthen the SOP practices amongst teachers and students, especially regarding hygiene and face masks, mechanism on cleaning classrooms between transition of morning and afternoon school sessions, policy for toilets and staff rooms, and also provision of resources or tools such as temperature scanners and hand sanitizers.

Besides, one of the respondents suggested that *“... the engagement with parents in school reopening plan may increase their confidence level in sending their children to schools.”* It is suggested that parents' concerns to be addressed quickly, and options for what will be available to them if they want to keep their child at home must be made available and it is a must to ensure that schools have sufficient resources to meet the parents' expectations on SOP in school [18]. Each individual should play his role to ensure that the community and country can be free from COVID-19 [52], and thus parents and students also should be alert and fully obey the rules and SOP.

However, with the uncertainty of COVID-19 situation, people should be ready and prepare to face them especially on education side. In this study, most of the respondents suggested that teachers should be strengthen their ability and knowledge in handling technology, such as E-Nilam, Google Classroom, interactive learning through quizlet and livebook. The medium for interactive teaching and learning should be more varieties and applicable for all students of any backgrounds. To ensure the effectiveness of SOP implemented in schools, it is impossible if the students are cramming in one classroom. A practical and feasible alternative, a hybrid-blended learning strategy is proposed and teachers can decide on the model that is suitable for the subjects. Furthermore, hybrid and blended training combine face-to-face and online learning with scheduled and self-paced activities [53]. Thus, it is important in fostering teacher competency in ICT-related teaching and learning during teacher's education and professional development [54].

There are more advantages of school reopening and it should be considered because the longer students remain out of school, they will be loss in education and social development. Children will miss out on essential academic and social-emotional learning, formative relations with friends and adults, opportunities for play, and other development necessities [55]. Moreover, in school, they will not be facing any difficulties to learn comfortably because there are numerous benefits and facilities in school. The study provision of school facilities improves the school building as well as the physical learning environments [56]. Moreover, these adequate provision and proper maintenance will directly improve the teaching sessions and give positive impact on academic performance [57]. Besides, in schools, children can have interactions with peers, and therefore will develop their personal and social skills. In agreement to this, it is stated that this could develop peer relation skills, prosocial behaviors, leadership skills, problem-solving skills, and personal and social responsibility skills [58]. However, the limitation of this study is that this interview was conducted before school reopening. Therefore, further study should be conducted to assess the effectiveness of these SOP on minimizing the transmissions of the COVID-19 and the study on the children's readiness on practicing SOP in schools.

4. CONCLUSION

The actions taken by the Ministry of Education Malaysia on school reopening together with the guideline and SOP showed that the school reopening actions were not decided without proper analysis from the Ministry. Furthermore, the Ministry also keeps a close monitoring on every school during this pandemic. The findings from this study highlighted those schools and teachers were ready for school reopening and the preparations have been made well. A few challenges from the school reopening happened to ensure that the COVID-19 transmission can be minimized in schools.

It is proven that teachers and school authorities have done their best in ensuring the SOP by ministry were fully complied, thus parents should feel more relief to send their children to school. Besides, the challenges faced by the teachers should be raise and there is a need for the discussion to find solutions between authorities involved. There is no sign of COVID-19 pandemic to end in the near future and people are afraid of this pandemic. However, society should able to face this and adapt the new norm, especially in education. Education should be continuous because every child has his or her right for a better and effective education.

ACKNOWLEDGEMENTS

The study was funded by Internal University Grant [KPJUC/RMC/SOHS/EC/2020/314]. Authors would like to express their heartfelt gratitude to all who have contributed to this study formally and informally. We thank all the respondents for their cooperation and support.

REFERENCES




- [1] H. Saleem, J. Rahman, N. Aslam, S. Murtazaliev, and S. Khan, "Coronavirus Disease 2019 (COVID-19) in Children: Vulnerable or Spared? A Systematic Review," *Cureus*, vol. 2019, no. May, 2020, doi: 10.7759/cureus.8207.
- [2] T. Heald-Sargent, W. J. Muller, X. Zheng, J. Rippe, A. B. Patel, and L. K. Kocielek, "Age-Related Differences in Nasopharyngeal Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Levels in Patients with Mild to Moderate Coronavirus Disease 2019 (COVID-19)," *JAMA Pediatrics*, vol. 174, no. 9, p. 902, 2020, doi: 10.1001/jamapediatrics.2020.3651.
- [3] N. Qualls *et al.*, "Morbidity and Mortality Weekly Report Community Mitigation Guidelines to Prevent Pandemic Influenza-United States, 2017," *Recommendations and Reports*, vol. 66, no. 1, pp. 1–34, 2017, [Online]. Available: <https://www.cdc.gov/mmwr/volumes/66/rr/rr6601a1.htm>.
- [4] T. C. Germann *et al.*, "School dismissal as a pandemic influenza response: When, where and for how long?" *Epidemics*, vol. 28, 2019, doi: 10.1016/j.epidem.2019.100348.
- [5] G. Di Pietro, F. Biagi, P. Costa, Z. Karpiński, and J. Mazza, *The likely impact of COVID-19 on education: Reflections based on the existing literature and recent international datasets*. Publications Office, 2020, doi: 10.2760/126686.
- [6] A. Schleicher, "The impact of COVID-19 on Education Insights from Education at a Glance 2020," *OECD*, 2020, [Online]. Available: <https://www.oecd.org/education/the-impact-of-covid-19-on-education-insights-education-at-a-glance-2020.pdf>.
- [7] R. M. Viner *et al.*, "School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review," *Lancet Child Adolesc. Heal.*, vol. 4, no. 5, pp. 397–404, 2020, doi: 10.1016/S2352-4642(20)30095-X.
- [8] N. Pereda and D. A. Díaz-Faes, "Family violence against children in the wake of COVID-19 pandemic: a review of current perspectives and risk factors," *Child and Adolescent Psychiatry and Mental Health*, vol. 14, no. 1, pp. 1–7, 2020, doi: 10.1186/s13034-020-00347-1.
- [9] H. A. Hamid and J. R. Khalidi, "Covid-19 and Unequal Learning," *Khazah Research Institute*, 2020, [Online]. Available: http://www.krinststitute.org/assets/content/MS/img/template/editor/20200426_Covid_Education_v3.pdf.
- [10] A. Andrew *et al.*, "Inequalities in Children's Experiences of Home Learning during the COVID-19 Lockdown in England*," *Fiscal Studies*, vol. 41, no. 3, pp. 653–683, 2020, doi: 10.1111/1475-5890.12240.
- [11] N. Ziauddeen, K. Woods-Townsend, S. Saxena, R. Gilbert, and N. A. Alwan, "Schools and COVID-19: Reopening Pandora's box?" *Public Health in Practice*, vol. 1, p. 100039, 2020, doi: 10.1016/j.puhp.2020.100039.
- [12] M. Kuhfeld, J. Soland, B. Tarasawa, A. Johnson, E. Ruzek, and J. Liu, "Projecting the Potential Impact of COVID-19 School Closures on Academic Achievement," *Educational Researcher*, vol. 49, no. 8, pp. 549–565, 2020, doi: 10.3102/0013189X20965918.
- [13] P. Engzell, A. Frey, and M. D. Verhagen, "Learning loss due to school closures during the COVID-19 pandemic," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 118, no. 17, 2021, doi: 10.1073/PNAS.2022376118.
- [14] M. P. Fantini, C. Reno, G. B. Biserni, E. Savoia, and M. Lanari, "COVID-19 and the re-opening of schools: A policy maker's dilemma," *Italian Journal of Pediatrics*, vol. 46, no. 1, pp. 10–12, 2020, doi: 10.1186/s13052-020-00844-1.
- [15] Ministry of Education Malaysia, "School Reopening Management Guidelines," Malaysia Ministry of Education, 2020, [Online]. Available: <https://www.moe.gov.my/en/kuat-turun/pekeliling-dan-garis-panduan/3449-garis-panduan-pengurusan-pembukaan-semula-sekolah-4-6-2020>
- [16] C. A. Limbers, "Factors Associated with Caregiver Preferences for Children's Return to School during the COVID-19 Pandemic," *Journal of School Health*, vol. 91, no. 1, pp. 3–8, 2021, doi: 10.1111/josh.12971.
- [17] L. Di Domenico, G. Pullano, C. E. Sabbatini, P. Y. Boëlle, and V. Colizza, "Modelling safe protocols for reopening schools during the COVID-19 pandemic in France," *Nature Communications*, vol. 12, no. 1, 2021, doi: 10.1038/s41467-021-21249-6.
- [18] E. Kroshus, M. Hawrilenko, P. S. Tandon, and D. A. Christakis, "Plans of US Parents Regarding School Attendance for Their Children in the Fall of 2020: A National Survey," *JAMA Pediatrics*, vol. 174, no. 11, pp. 1093–1101, 2020, doi: 10.1001/jamapediatrics.2020.3864.
- [19] P. Zimmermann and N. Curtis, "Why is COVID-19 less severe in children? A review of the proposed mechanisms underlying the age-related difference in severity of SARS-CoV-2 infections," *Archives of Disease in Childhood*, vol. 106, no. 5, pp. 429–439, 2021, doi: 10.1136/archdischild-2020-320338.
- [20] Y. Rajaendran and R. Gong, "Back to School: Reopening Schools Safety," *Khazanah Research Institute Views*, pp. 1–9, 2021, [Online]. Available: https://www.krinststitute.org/Views-@-Back_to_School-;_Reopening_Schools_Safely.aspx
- [21] A. Ubaidah, A. N. Mansor, and H. Hashim, "Challenges of COVID Standard Operating Procedure Compliance in a Secondary Private School," *Creative Education*, vol. 12, no. 08, pp. 1881–1890, 2021, doi: 10.4236/ce.2021.128143.
- [22] D. G. Dooley, J. N. Simpson, and N. S. Beers, "Returning to School in the Era of COVID-19," *JAMA Pediatrics*, vol. 174, no. 11, p. 1028, 2020, doi: 10.1001/jamapediatrics.2020.3874.
- [23] A. M. Yusof, E. G. S. Daniel, W. Y. Low, and K. A. Aziz, "Teachers' Perceptions on the Blended Learning Environment for Special Needs Learners in Malaysia: A Case study," *2nd International Conference on Management, Education, Social Sciences and Technology*, 2011, vol. 13, pp. 29–33.

- [24] M. A. Neergaard, F. Olesen, R. S. Andersen, and J. Sondergaard, "Qualitative description-the poor cousin of health research?" *BMC Medical Research Methodology*, vol. 9, no. 1, pp. 1–5, 2009, doi: 10.1186/1471-2288-9-52.
- [25] Q. Gasibat, A. Aymen, and M. Gasibat, "Should schools reopen during the covid-19 pandemic?" *Journal of Medicine*, vol. 22, no. 1, pp. 57–59, 2021, doi: 10.3329/jom.v22i1.51393.
- [26] R. M. Sarwar, "On School Reopening," UNICEF Malaysia, 2021, [Online]. Available: <https://www.unicef.org/malaysia/press-releases/school-reopening>.
- [27] R. M. Viner *et al.*, "Susceptibility to SARS-CoV-2 Infection among Children and Adolescents Compared with Adults: A Systematic Review and Meta-Analysis," *JAMA Pediatrics*, vol. 175, no. 2, pp. 143–156, 2021, doi: 10.1001/jamapediatrics.2020.4573.
- [28] X. Li *et al.*, "The Role of Children in the Transmission of SARS-CoV2: Updated Rapid Review," *Journal of Global Health*, vol. 10, no. 2, pp. 1–11, 2020, doi: 10.7189/jogh.10.021101.
- [29] N. G. Davies *et al.*, "Age-dependent effects in the transmission and control of COVID-19 epidemics," *Nature Medicine*, vol. 26, no. 8, pp. 1205–1211, 2020, doi: 10.1038/s41591-020-0962-9.
- [30] R. J. Collie and A. J. Martin, "Adaptability: An Important Capacity for Effective Teachers," *Educational Practice and Theory*, vol. 38, no. 1, pp. 27–39, Mar. 2016, doi: 10.7459/ep/38.1.03.
- [31] S. Fawcner, A. Niven, S. Hanson, C. Williamson, and C. L. Hanson, "Physical activity for children and young people aged 5-18 years during COVID-19. Stay safe; be active," *British Journal of Sports Medicine*, 2020, [Online]. Available: <https://blogs.bmj.com/bjbm/2020/04/13/physical-activity-for-children-and-young-people-aged-5-18-years-during-covid-19-stay-safe-be-active/>.
- [32] S. C. Newbold, D. Finnoff, L. Thunström, M. Ashworth, and J. F. Shogren, "Effects of Physical Distancing to Control COVID-19 on Public Health, the Economy, and the Environment," *Environmental and Resource Economics*, vol. 76, no. 4, pp. 705–729, 2020, doi: 10.1007/s10640-020-00440-1.
- [33] R. M. Viner *et al.*, "Reopening schools during the COVID-19 pandemic: Governments must balance the uncertainty and risks of reopening schools against the clear harms associated with prolonged closure," *Archives of Disease in Childhood*, vol. 106, no. 2, pp. 111–113, 2021, doi: 10.1136/archdischild-2020-319963.
- [34] M. Jayaweera, H. Perera, B. Gunawardana, and J. Manatunge, "Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy," *Environmental Research*, vol. 188, pp. 1–18, 2020.
- [35] H. B. Stage, J. Shingleton, S. Ghosh, F. Scarabel, L. Pellis, and T. Finnie, "Shut and re-open: The role of schools in the spread of COVID-19 in Europe," *Philosophical Transactions of the Royal Society B: Biological Sciences*, vol. 376, no. 1829, 2021, doi: 10.1098/rstb.2020.0277.
- [36] Centers for Disease Control and Prevention, "K-12 School Operational Strategy," 2021, [Online]. Available: <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/operation-strategy.html>.
- [37] D. K. Chu *et al.*, "Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis," *Lancet*, vol. 395, no. 10242, pp. 1973–1987, 2020, doi: 10.1016/S0140-6736(20)31142-9.
- [38] D. T. Marshall and M. Bradley-Dorsey, "Reopening America's Schools: A Descriptive Look at How States and Large School Districts are Navigating Fall 2020," *Journal of School Choice*, vol. 14, no. 4, pp. 534–566, 2020, doi: 10.1080/15582159.2020.1822731.
- [39] D. Gurdasani *et al.*, "School reopening without robust COVID-19 mitigation risks accelerating the pandemic," *Lancet*, vol. 397, no. 10280, pp. 1177–1178, 2021, doi: 10.1016/S0140-6736(21)00622-X.
- [40] B. L. Guthrie *et al.*, "Summary of School Re-opening Models and Implementation Approaches during the COVID 19 Pandemic," *Washington (state) Department of Health*, 2020. [Online]. Available: <https://www.hsd.org/?abstract&did=841669>.
- [41] C. Matuschek *et al.*, "Face masks: Benefits and risks during the COVID-19 crisis," *European Journal of Medical Research*, vol. 25, no. 1, pp. 1–8, 2020, doi: 10.1186/s40001-020-00430-5.
- [42] J. Francis, V. Vishnu Priya, and L. Prathap, "Awareness on the use of hand sanitizer and face mask in disease spread-a survey among college students," *Indian Journal of Forensic Medicine & Toxicology*, vol. 14, no. 4, pp. 5786–5793, 2020, doi: 10.37506/ijfimt.v14i4.12514.
- [43] F. K. Sikakulya *et al.*, "Use of face masks to limit the spread of the COVID-19 among western Ugandans: Knowledge, attitude and practices," *PLoS One*, vol. 16, no. 3 March, pp. 1–13, 2021, doi: 10.1371/journal.pone.0248706.
- [44] B. M. Kuehn, "Fewer COVID-19 Cases in Schools With Masks and Improved Ventilation," *JAMA Pediatrics*, vol. 326, no. 2, p. 125, 2021, doi: 10.1001/jama.2021.17973.
- [45] G. Lo Moro, T. Sinigaglia, F. Bert, A. Savatteri, M. R. Gualano, and R. Siliquini, "Reopening schools during the COVID-19 pandemic: Overview and rapid systematic review of guidelines and recommendations on preventive measures and the management of cases," *International Journal of Environmental Research and Public Health*, vol. 17, no. 23, pp. 1–21, 2020, doi: 10.3390/ijerph17238839.
- [46] J. A. Lambert, K. Trott, and R. F. Baugh, "An Analysis of K-12 School Reopening and Its' Impact on Teachers," *Journal of Primary Care & Community Health*, vol. 11, 2020, doi: 10.1177/2150132720967503.
- [47] V. Prado-Gascó, M. T. Gómez-Domínguez, A. Soto-Rubio, L. Díaz-Rodríguez, and D. Navarro-Mateu, "Stay at Home and Teach: A Comparative Study of Psychosocial Risks Between Spain and Mexico During the Pandemic," *Frontiers in Psychology*, vol. 11, no. September, pp. 1–12, 2020, doi: 10.3389/fpsyg.2020.566900.
- [48] M. R. Hassan, S. S. Syed Abdul Rahim, and M. S. Jeffree, "Pandemic Fatigue: A Challenge in Combatting against COVID-19," *Borneo Epidemiology Journal*, vol. 2, no. 1, pp. 19–21, 2021, doi: 10.51200/bej.v2i1.3232.
- [49] J. Cachón-Zagalaz, M. Sánchez-Zafra, D. Sanabrias-Moreno, G. González-Valero, A. J. Lara-Sánchez, and M. L. Zagalaz-Sánchez, "Systematic Review of the Literature About the Effects of the COVID-19 Pandemic on the Lives of School Children," *Frontiers in Psychology*, vol. 11, no. October, pp. 1–8, 2020, doi: 10.3389/fpsyg.2020.569348.
- [50] N. Ozamiz-Etxebarria, N. Berasategi Santxo, N. Idoiaga Mondragon, and M. Dosil Santamaria, "The Psychological State of Teachers During the COVID-19 Crisis: The Challenge of Returning to Face-to-Face Teaching," *Frontiers in Psychology*, vol. 11, no. January, pp. 1–10, 2021, doi: 10.3389/fpsyg.2020.620718.
- [51] Amar-Singh, Z. Ismail, L. C. Hung, and W. Y. Wong, "Safety Profile and Specific of the School Reopening Guidelines Need Strengthening," *Malaysia Paediatric Association*, 2020, [Online]. Available: <https://mpaeds.my/safety-profile-and-specifics-of-the-school-reopening-guidelines-need-strengthening/>.
- [52] A. U. M. Shah *et al.*, "COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government," *International Journal of Infectious Diseases*, vol. 97, pp. 108–116, 2020, doi: 10.1016/j.ijid.2020.05.093.
- [53] J. Singh, "Enhancing Student Success in Health Care Programs: Active Learning in a Hybrid Format," *Journal of Instructional Pedagogies*, vol. 18, pp. 1–14, 2017.




- [54] J. König, D. J. Jäger-Biela, and N. Glutsch, "Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany," *European Journal of Teacher Education*, vol. 43, no. 4, pp. 608–622, 2020, doi: 10.1080/02619768.2020.1809650.
- [55] M. Levinson, M. Cevik, and M. Lipsitch, "Reopening Primary Schools during the Pandemic," *The New England Journal of Medicine*, vol. 383, no. 10, pp. 981–985, 2020, doi: 10.1056/nejmms2024920.
- [56] S. W. Ornstein, N. S. Moreira, R. Ono, A. J. G. L. França, and R. A. M. F. Nogueira, "Improving the quality of school facilities through building performance assessment," *Journal of Educational Administration*, vol. 47, no. 3, pp. 350–367, May 2009, doi: 10.1108/09578230910955782.
- [57] N. M. Ibrahim, M. M. Osman, S. Bachok, and M. Z. Mohamed, "Assessment on the Condition of School Facilities: Case Study of the Selected Public Schools in Gombak District," *Procedia - Social and Behavioral Sciences*, vol. 222, pp. 228–234, 2016, doi: 10.1016/j.sbspro.2016.05.151.
- [58] K. Opstoel *et al.*, "Personal and social development in physical education and sports: A review study," *European Physical Education Review*, vol. 26, no. 4, pp. 797–813, 2020, doi: 10.1177/1356336X19882054.

BIOGRAPHIES OF AUTHORS






Norhayati Mohd Zain    is the Associate Professor and Senior Lecturer in Medical Imaging Department, School of Health Sciences, KPJ Healthcare University College. She is also the Director of Research Management Centre. She graduated in Doctor of Philosophy (Diagnostic Imaging) in 2019 from National University of Malaysia and Master in Health Sciences (Diagnostic Imaging) in 2014 from National University of Malaysia. She also had her Bachelor of Diagnostic Imaging & Radiotherapy in 2007 from National University of Malaysia. She is experienced in breast imaging and breast cancer related research activities, as well as research related to teaching and learning activities. She has been awarded with numbers of internal university research grants. She can be contacted at email: norhayati@kpjuc.edu.my.






Nur Anis Izzati Che Mut    is the Research Officer at KPJ Healthcare University College. She graduated in Bachelor of Medical Imaging (Hons) in 2019 from KPJ Healthcare University College. She has also published numbers of articles related to breast screening and teaching and learning related research. She can be contacted at email: nur.anis@kpjuc.edu.my.



Siti Hajar Norhan    is lecturer in School of Business and Management, KPJ Healthcare University College. She graduated in Master of Human Sciences (Clinical Psychology) in 2018 and Bachelor of Human Sciences (Psychology) in 2015 from International Islamic University Malaysia. She is experienced in psychology and clinical psychology. She can be contacted at email: hajar.norhan@kpjuc.edu.my.



Medina Marzukhi    has graduated in Bachelor of Medical Imaging (Hons) in 2021 from KPJ Healthcare University College and has experience as radiographer. Currently, she pursues her study in Advanced Diploma in Medical Ultrasonography in Vision College. She can be contacted at email: dnainspirit@gmail.com.