



# Indonesian Student Preparedness Living in the Pandemic

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**Abstract.** Entering the second year of the Covid 19 pandemic, it has become clear that preparedness to live and adapt to the pandemic situation is key to survival and filled life. High school students are among the high-risk demographic group of the pandemic in Indonesia, which saw their age group excluded from the initial vaccination effort. Coupled with the tendencies of being bold and brash, it is important to assess the student's preparedness to inform policymaking in education. This study aims to investigate students' preparedness in living with the Covid 19 pandemic. We surveyed 439 students from several cities across Indonesia who were determined by random sampling technique. The survey was conducted using online questionnaire. Data were analyzed by descriptive statistical techniques. The result shows that Indonesian high school students actively seek information about the COVID-19 pandemic. However, they are found to be less disciplined in following health protocols especially in avoiding crowds or limiting their social and outdoor activities. The study also found notable unwillingness among students to get vaccinated. The study concludes that Indonesian students are prepared with adequate information about COVID-19, but are not prepared to adjust their lifestyle to the health protocols of the pandemic. This should be taken into account in policymaking in education such as the plan to reopen schools countrywide.

**Keywords:** Students · Adolescence · Preparedness · Pandemic · COVID-19

## 1 Introduction

Since January 30, 2020, the World Health Organization (WHO) has declared the coronavirus outbreak a health emergency of international concern, and this was followed by a declaration of a pandemic on March 11, 2020 [1]. COVID-19 has so far infected more than 200 million people worldwide and caused more than 4 million deaths [2]. Authorities around the world enforced strict measures to limit the virus outbreak, including restrictions on public activities, closing public services and facilities, closing schools, and lock-down policies [3].

The school closure policy is not only intended to curb the spread of the COVID-19 virus, but also to minimize the serious health impacts that might manifest on school-age children if they contracted the disease [4]. COVID-19 is reported to show different severity impacts for various age ranges [5]. Adolescents in the age range of 10–19 years tend to

show milder symptoms and lower cases of death compared to adults with comorbidities [6]. However, based on the socio-emotional aspect, teenagers are the most vulnerable group to be affected by the COVID-19 pandemic. The greatest impact on adolescents comes from closing schools, being at home with family, and being isolated from peers [7]. Based on these arguments, the debate on school reopening becomes very interesting, so supporting studies are needed to determine students' readiness to return to school.

Adolescents have unique developmental characteristics. They have developmental needs that are different from adults, especially a high need to connect with the peer environment. Adolescents are at a stage of life where they desperately need to be involved in social relationships and tend to want to be separated from their parents [8]. Research conducted by Adolescents are prone to experiencing mood instability and emotional reactivity during the COVID-19 pandemic due to restrictions on social activities in their peer environment [7]. Other studies have shown that the negative effects of the pandemic are more pronounced in girls than boys [9].

Socio-emotional instability causes adolescents to be more impatient in implementing positive behaviors during pandemic conditions. Adolescents are more likely to engage in behavioral practices that are risky for coronavirus transmission [10]. Studies conducted in China and Iran show that adolescents tend to neglect health protocols, such as not being obedient in using masks [11, 12]. Studies in Jordan show relatively similar results. The study found that adolescents with lesser knowledge about COVID-19 are inclined to have negative attitudes towards the prevention of virus transmission and are involved in risky practices related to the spread of infection [10].

Adolescent health is very important for world civilization, both through its direct impact on development and indirect impact on health and well-being during later stages of life [13]. Behavioral patterns in adolescence, such as nutritional intake patterns or lifestyle will have an impact on the formation of behavioral patterns and have long-term impacts on their health. The positive attitudes and practices of teenagers, especially in responding to pandemic conditions, greatly affect their safety as well as the safety of those around them. Given the importance of caring for adolescents in maintaining a positive attitude and concern for their health during a pandemic, a study was conducted that aims to evaluate the preparedness and readiness of adolescents during the COVID-19 pandemic. Understanding students' preparedness in living with the pandemic is important to form the basis for data-driven policymaking in our education system. The results of this study are expected to serve as an important consideration in discussions on reopening schools in the COVID-19 pandemic situation.

## 2 Methods

The study was conducted using a survey method involving 439 high school students spread across 22 districts/cities in Indonesia in the age range of 16–18 years. The online questionnaire used in this study was distributed through various platforms and filled out by respondents within 3 days (13–15 July 2021). The questionnaire is presented in the Google Form platform, where each question can be answered directly by the respondent with one click. In the introductory part of the questionnaire, a brief explanation of the purpose and procedure of the survey, voluntary participation, and the confidentiality and

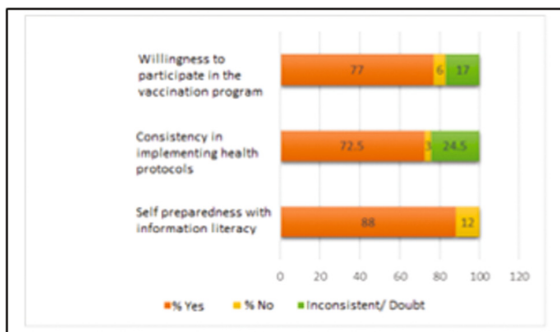
anonymity of respondents is given. This is important to assure respondents to respond freely according to the actual situation. The instrument was developed to explore information on aspects of students' readiness to face COVID-19 including efforts to equip themselves with information literacy, students' consistency in implementing health protocols, and willingness to participate in vaccination programs. The data were analyzed by descriptive statistics to see the distribution of the percentage of student responses.

### 3 Results and Discussion

The survey process conducted using an online questionnaire was responded to by 439 high school students in class XI and XII from 22 districts/cities in Indonesia (139 male (32%) and 300 female (62%)). The samples were determined by random sampling technique. Students' preparedness to face pandemic conditions was assessed from three facets namely equipping themselves with knowledge/literacy related to the pandemic, behaviour in implementing health protocols, and willingness to participate in vaccinations. These three facets were chosen as important characterizing points for students based on the United Nation policy brief regarding education in the COVID-19 pandemic [14] (Fig. 1).

Based on the survey conducted, it was found that around 75% of students were prepared to live to adapt to the conditions of the COVID-19 pandemic, while the other 25% did not appear to have the readiness to adapt to the conditions of the COVID-19 pandemic. The aspect of equipping themselves with information literacy is the aspect of readiness that most students have done compared to other aspects (Table 1).

Information literacy is one of the important aspects in dealing with a pandemic situation that is full of data, information, misinformation, and disinformation [15]. Based on the results of the questionnaire, it was found that most students (88%) stated that they were actively seeking information about how to avoid the COVID-19 virus. Actively seeking information about issues that are important in one's life is the key to building literacy related to these issues [16]. This finding also indicates that students have curiosity and care about the situation that is happening around them. One component of curiosity is the desire to obtain information and knowledge [17].



**Fig. 1.** Student Questionnaire Results in Each Aspect

**Table 1.** The percentage of students' responses on the preparedness questionnaire to face the pandemic

Facets	Statements	Yes	No	Inconsis-tent
Self-preparedness with information literacy	I'm always looking for information on how to avoid the covid 19 virus	387 (88%)	52 (12%)	
Consistency in implementing health protocols	I always wear a mask when I leave the house	384 (87%)	5 (1%)	50 (11%)
	I always maintain a diet and rest pattern to increase my body's immunity.	295 (67%)	20 (5%)	124 (28%)
	I always try to avoid crowds during a pandemic	337 (77%)	5 (1%)	97 (22%)
	I can always restrain myself and don't go out of the house if there's nothing important	321 (73%)	11 (3%)	107 (24%)
	I always take a shower after doing activities outside the house	256 (58%)	22 (5%)	161 (37%)
		<b>Yes</b>	<b>No</b>	<b>Doubt</b>
Willingness to participate in the vaccination program	I am willing to take part in the covid 19 vaccination program	340 (77%)	25 (6%)	74 (17%)

Note: *M* = male, *F* = female

Curiosity can be represented by the ability to learn and the spirit to investigate. In addition, high curiosity can also be reflected through behavioral indicators such as the desire to explore information, explore information, adventure with information, and dare to ask questions [18]. One of the character formations such as curiosity can be done through literacy activities [19]. In addition, it can also be trained through appropriate learning processes such as inquiry-based learning [20].

Good knowledge about how to avoid transmission of the COVID-19 virus is a key factor in forming preparedness [21]. Equipping themselves with information related to the COVID-19 pandemic can certainly increase students' knowledge, and also increase preparedness in the face of COVID-19. This is in line with research [22] which states that there is a significant relationship between knowledge and preparedness in dealing with COVID-19. Information related to how to prevent Covid 19 is the most sought-after information during this pandemic [23]. Various information can be obtained by students easily at this time. Sources of information can be obtained from teachers, parents, news portals, social media, and also through online seminars. As done other researcher [24] it is known that online seminars can be a way to disseminate appropriate health information in increasing knowledge to deal with COVID-19. Packaging educational activities in the

form of counseling through active discussion can reinforce the information that has been received by students [25].

The aspect of consistency in implementing health protocols, it is known that more students (72.5%) have been consistent in implementing preventive behavior against COVID-19 than students who have not (27.5%). Preventive behavior against COVID-19 is carried out by following health protocols, such as using masks which is the most behavior (87%) that has been done by students. The application of behaviors such as washing hands, doing social distancing, using disinfectants, and other behaviors are some of the behaviors that have also been widely understood by the public [26]. This preventive behavior is important to be applied by students through an educational process related to clean living behavior which is believed to be able to increase students' understanding as a provision for readiness to face COVID-19 [27]. This finding shows that the number of students who apply the health protocol (72%) is lower than the number of students who are actively seeking information about the COVID-19 pandemic (88%). These results can be attributed to the health-believe model theory which is influenced by the demographic character of a group [28]. Students in their teens tend to have a relatively fit and disease-free body so that which can cause overconfidence so that this group can be laxer in maintaining health protocols [29]. Further explanation can be explored in the study conducted by Styck, et al. which revealed that stress levels related to the covid pandemic tend to be lower in the adolescent group compared to other age groups [30].

The aspect of willingness to participate in the vaccination program, most students (77%) stated their willingness to be vaccinated. This figure tends to be consistent with findings in other studies which showed that student's willingness to take vaccinations never reached 100% [31]. The willingness of students to take vaccinations is most likely also influenced by the level of education and the field of science pursued [32]. Vaccination is one of the efforts to achieve herd immunity and is used as the basis for determining policies for opening schools and other public services [33]. These findings provide a warning that students still need to get an explanation about the benefits of vaccination, given the importance of vaccines as a form of preparedness in the face of a pandemic [34]. Educational activities in the form of counseling and discussions are believed to be able to increase the interest of students to participate in the success of the COVID-19 Vaccination program in Indonesia [25].

Although the results have been obtained where most students already have the readiness to face the covid pandemic (75%), there are still many students who do not have readiness, which is around 25%. One of the reasons for this could be the lack of information obtained by students related to COVID-19 and because of the large amount of false information (Hoax) circulating regarding COVID-19. Exposure to this misinformation will be related to confidence in receiving the information and this will also affect the low implementation of COVID-19 prevention behavior [35]. In the discourse on the reopening of schools for face-to-face meetings, these findings need to be considered to create safer, fairer, and more effective educational practices during and after the COVID-19 pandemic.

## 4 Conclusion

The results showed that most Indonesian students (88%) actively seek information and knowledge about COVID-19 prevention. However, only 72% of the respondent would follow such preventive health protocols. On the other hand, only 77% of respondents intend to follow the COVID-19 vaccination program. Overall, out of three aspects, the respondent's pandemic preparedness score is 75%. Two years into the COVID-19 pandemic, this result is worrying since it indicated that the previous effort of health promotion has not been effective. This finding is contributed in part by numerous false information (hoax) received by Indonesian students, making it difficult for students to distinguish between false and true information. The tendency of adolescent groups to be overconfident is also the cause of their laxness in implementing health protocols. Based on these findings, more attention should be paid to education policies to prepare students to face the pandemic so that they do not pose a threatening risk to both the youth group itself and the surrounding environment.

**Acknowledgments.** This study is sanctioned and funded by the Institute of Research, Community Service, and Internal Quality Assurance (LP3M), Universitas Maritim Raja Ali Haji.

## References

1. S. Chavez, B. Long, A. Koyfman, S. Y. Liang,, Coronavirus Disease (COVID-19): A primer for emergency physicians. *American Journal of Emergency Medicine*, 2021, <https://doi.org/10.1016/j.ajem.2020.03.036>
2. World Health Organization, No Title. WHO Coronavirus (COVID-19) Dashboard, 2021.
3. A. Atalan, Is the Lockdown important to prevent the COVID-9 pandemic? Effects on Psychology, Environment and Economy-Perspective, vol.2, *Annals of Medicine and Surgery*, 2020. <https://doi.org/10.1016/j.amsu.2020.06.010>
4. I. P. Sinha,, R. Harwood, M.G. Semple, D.B. Hawcutt, R. Thursfield, O. Narayan, S. E. Kenny, R. Viner, S.L. Hewer, K.W. Southern, COVID-19 infection in children, vol.5, *The Lancet Respiratory Medicine*, 2020, pp.446–447. [https://doi.org/10.1016/S2213-2600\(20\)30152-1](https://doi.org/10.1016/S2213-2600(20)30152-1)
5. R. Aroos, B. L. L. Wong, R. A. Merchant, Delayed health consequences of COVID-19 lockdown in an older adult. *Age and Ageing*, vol.3, 2021, pp.673–675., <https://doi.org/10.1093/ageing/afab052>
6. Y. Hu, W. Liang, L. Liu, L. Li, Clinical Characteristics of Coronavirus Disease 2019 in China, vol.18, *W. N Engl j Med*, 2020, pp. 1708–1728. <https://doi.org/10.1056/NEJMoa2002032>
7. K. H. Green, S. van de Groep, S. W. Sweijen, A.I. Becht, M. Buijzen, R. N. H. de Leeuw, D. Remmerswaal, R. van der Zanden, R. C. M. E. Engels, E. A. Crone, Mood and emotional reactivity of adolescents during the COVID-19 pandemic: short-term and long-term effects and the impact of social and socioeconomic stressors, vol.1, *Scientific Report*, 2021, pp.1–13. <https://doi.org/10.1038/s41598-021-90851-x>
8. J. Holzer, S. Korlat, C. Haider, M. Mayerhofer, E. Pelikan, B. Schober, C. Spiel, T. Toumazi, K. Salmela-Aro, U. Kaser, A. Schultze-Krumbholz, S. Wachs, M. Dabas, S. Verma, D. Iliev, D. Andonovska-Trajkovska, P. Plichta, J. Pyzalski, N. Walter, M. Luftenegger, Adolescent well-being and learning in times of COVID-19-A multi-country study of basic psychological need satisfaction, learning behavior, and the mediating roles of positive emotion and intrinsic motivation, vol. 16, *PLoS ONE*, 2021. <https://doi.org/10.1371/JOURNAL.PONE.0251352>

9. T. Halldorsdottir, I. E. Thorisdottir, C.C.A. Meyers, B.B. Asgeirsdottir, A.L. Kristjansson, H. B. Valdimarsdottir, J.P. Allegrante, I.D. Sigfusdottir, Adolescent well-being amid the COVID-19 pandemic: Are girls struggling more than boys? Vol.2, JCPP Advances, 2021. <https://doi.org/10.1002/jcv2.12027>
10. L. A. Dardas, I. Khalaf, M. Nabolsi, O. Nassar, S. Halasa, Developing an Understanding of Adolescents' Knowledge, Attitudes, and Practices Toward COVID-19, vol. 16, Journal of School Nursing, 2020. pp.430–441, <https://doi.org/10.1177/1059840520957069>
11. B.-L. Zhong, W. Luo, H.-M. Li, Q.-Q. Zhang, X.-G. Liu, W.-T. Li, Y. Li, Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey, vol.10, International Journal of Biological Sciences, 2020, pp.1745–1752, <https://doi.org/10.7150/ijbs.45221>
12. A. Erfani, R. Shahriarirad, K. Ranjbar, A. Mirahmadizadeh, M. Moghadami, Knowledge, attitude and practice toward the novel coronavirus (COVID-19) outbreak- A population-based survey in Iran. Bulletin of the World Health Organization, 2020.
13. G. C. Patton, S.M. Sawyer, J.S. Santelli, D.A. Ross, R. Afifi, N.B. Allen, M. Arora, P. Azzopardi, W. Baldwin, C. Bonell, R. Kakuma, E. Kennedy, J. Mahon, T. McGovern, A.H. Mokdad, V. Patel, V., Petroni, S., Reavley, N., Taiwo, K., ... Viner, R. M. Our future: a Lancet commission on adolescent health and wellbeing, vol. 387, The Lancet, 2021 (10036), 2423–2478. [https://doi.org/10.1016/S0140-6736\(16\)00579-1](https://doi.org/10.1016/S0140-6736(16)00579-1)
14. United Nations. Education during COVID-19 and beyond. 2020.
15. U. Patil, U. Kostareva, M. Hadley, J. A. Manganello, O. Okan, K. Dadaczynski, P.M. Massey, J. Agner, T. Sentell, Health literacy, digital health literacy, and COVID-19 pandemic attitudes and behaviors in U.S. college students: Implications for interventions, vol. 6, International Journal of Environmental Research and Public Health, 2021. <https://doi.org/10.3390/ijerph18063301>
16. P. A. Archila, G. Danies, J. Molina, A.M. Truscott de Mejía, S. Restrepo, Towards COVID-19 Literacy: Investigating the Literacy Levels of University Students in Colombia, vol.4, Science and Education, 2021, pp.785–808, <https://doi.org/10.1007/s11191-021-00222-1>
17. J. Rowson, J. Young, N. Spencer, E. Lindley, E. Gecius, The power of curiosity: How linking inquisitiveness to innovation could help to address our energy challenges. RSA Social Brain Centre, 2012, pp.1–36.
18. D. Hopkins, W. Craig, Curiosity and powerful learning, vol. 65, In Education Today 2016.
19. C.H.C. Ningrum, K. Fajriyah, M. A. Budiman, Pembentukan Karakter Rasa Ingin Tahu Melalui Kegiatan Literasi. Indonesian Values and Character, vol.2. Education Journal, 2019, pp.69. <https://doi.org/10.23887/ivcej.v2i2.19436>
20. V. Ulva, I. Ibrohim, S. Sutopo, Mengembangkan Sikap Ilmiah Siswa SMP Melalui Pembelajaran Inkuiri Terbimbing pada Materi Ekosistem, vol.5. Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan, 2017, pp.622–626.
21. M. Tadese, A. Mihretie, Attitude, preparedness, and perceived selfefficacy in controlling COVID-19 pandemics and associated factors among university students during school reopening, vol.6, PLoS ONE, 2021. <https://doi.org/10.1371/journal.pone.0255121>
22. R. N., Natalia, E. Malinti, Y. Elon, Tingkat Pengetahuan Dan Kesiapsiagaan Remaja Dalam Menghadapi Wabah COVID-19, vol.2, Jurnal Ilmiah Kesehatan Diagnosis, 2020, pp. 2302–2531.
23. S. Sulistyawati, R. Rokhmayanti, B. Aji, S. P. M. Wijayanti, S. K. W. Hastuti, T. W. Sukesi, S. A. Mulasari, Knowledge, attitudes, practices and information needs during the COVID-19 pandemic in Indonesia, vol.14, Risk Management and Healthcare Policy, 2021, pp.163–175 <https://doi.org/10.2147/RMHP.S288579>

24. M. Fadilah, W. I. F. Ningsih, O. Berlin, A. Wimaulia, A. Azlin, R. A. Syakurah, Pengaruh Seminar Online Terhadap Pengetahuan Dalam Meningkatkan Imunitas Untuk Menghadapi COVID-19 Dan Persepsi Mengenai New Normal Pada Masyarakat Awam, vol.2, J-KESMAS: Jurnal Kesehatan Masyarakat, 2021, pp.134. <https://doi.org/10.35329/jkesmas.v6i2.1877>
25. I. M. Zulfa, F.D. Yunitasari, Edukasi Generasi Muda Siap Vaksinasi COVID-19, vol.2, Asta, 2021, pp.100–112.
26. R. O’Conor, L. Opsasnick, J. Y. Benavente, A. M., Russell, G. Wismer, M. Eiffler, D. Marino, L. M. Curtis, M. Arvanitis, L. Lindquist, S. D. Persell, S. C. Bailey, M. S. Wolf, Knowledge and Behaviors of Adults with Underlying Health Conditions During the Onset of the COVID-19 U.S. Outbreak: The Chicago COVID-19 Comorbidities Survey, vol.6, Journal of Community Health, 2020, pp.1149–1157. <https://doi.org/10.1007/s10900-020-00906-9>
27. N. Nurnainah, S. W. Bahrhun, S. Dardi. Pentingnya Perilaku Hidup Bersih dan Sehat dalam Pencegahan Penyebaran Virus COVID-19 Pada Anak dan Remaja, Vol.2, Jurnal Peduli Masyarakat, 2021, pp.59–64.
28. D. Taylor, M. Bury, N. Camppling, S. Carter, S. Garfied, J. Newbould, T. Rennie, A Review of the use of the Health Belief Model (HBM), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB) and the Trans-Theoretical Model (TTM) to study and predict health related behaviour change, 2007.
29. F. Angoulvant, N. Ouldali, D. D. Yang, M. Filser, V. Gajdos, A. Rybak, R. Guedj, V. Soussan-Banini, R. Basmaci, A. Lefevre-Utile, D. Brun-Ney, L. Beaujouan, D. Skurnik, Coronavirus Disease 2019 Pandemic: Impact Caused by School Closure and National Lockdown on Pediatric Visits and Admissions for Viral and Nonviral Infections - A Time Series Analysis, vol.2, Clinical Infectious Diseases, 2021, pp.319–322. <https://doi.org/10.1093/cid/ciaa710>
30. K. M. Styck, C. K. Malecki, J. Ogg, M.K. Demaray, Measuring COVID-19-Related Stress Among 4th Through 12th Grade Students. School Psychology Review, 2020.. <https://doi.org/10.1080/2372966X.2020.1857658>
31. Y. Zhou, Y. Wang, Z. Li, Intention to get vaccinated against COVID-19 among nursing students: A cross-sectional survey. Nurse Education Today, 2021, pp.107, <https://doi.org/10.1016/j.nedt.2021.105152>
32. A. Kecojevic, C.H. Basch, M. Sullivan, Y-T. Chen, N. K. Davi, COVID-19 Vaccination and Intention to Vaccinate Among a Sample of College Students in New Jersey, Journal of Community Health, 2021 <https://doi.org/10.1007/s10900-021-00992-3>
33. T. Zhao, Y. Zhang, C. Wu, Q. Su, Will anti-epidemic campus signals affect college students’ preparedness in the post-COVID-19 era?, vol.17, International Journal of Environmental Research and Public Health, 2021. <https://doi.org/10.3390/ijerph18179276>
34. A. Sheikh, A. Sheikh, Z. Sheikh, S. Dhami, Reopening schools after the COVID-19 lockdown, vol.1, In Journal of Global Health University of Edinburgh, 2020. <https://doi.org/10.7189/JOGH.10.010376>
35. J. J. Lee, K. A. Kang, M. P. Wang, S. Z. Zhao, J. Y. H. Wong, S. O’Connor, S. C. Yang, S. Shin, Associations between COVID-19 misinformation exposure and belief with COVID-19 knowledge and preventive behaviors: cross-sectional online study, vol.11, Journal of Medical Internet Research, 2020, pp.1–13. <https://doi.org/10.2196/22205>



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