

# Awareness Towards COVID-19 Among Junior High School Student: A Questionnaire Based Survey

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## ABSTRACT

Indonesia now against catastrophic events due to the COVID-19 pandemic. Stringent preventive measures are one of the critical successes to control COVID-19 transmission. The level of public awareness influences adherence to preventive measures. This study investigated the level of awareness among junior high school toward COVID-19. A descriptive survey study using data collected via an online questionnaire was conducted between 30<sup>th</sup> September and 2<sup>nd</sup> October 2020. The survey instrument consisted 24 items, 10 items assessed knowledge, 8 items assessed attitude, and 6 items assessed practices. A total of 157 students took part in this study, of which 109 females and 48 males. The finding of this study shows that level of awareness among junior high schools toward COVID-19 is high. However, a significant number of students lack knowledge aspect, especially at the clinical symptom points of COVID-19, comorbidities that can aggravate COVID-19, the proper procedure for using masks, and determining the effectiveness of masks recommended by WHO. A comprehensive education program is essential to increase awareness and to reach sufficient knowledge related COVID-19.

**Keywords:** Awareness, COVID-19, Survey

## 1. INTRODUCTION

The world is facing health emergency due to the COVID-19 pandemic, including Indonesia. On March 2, 2020, the decision of BNPB Head-Director No. 9. 2020, declared COVID-19 as *disastrous* status. This decision was conducted after the first case was detected in Indonesia. Initially, two Indonesian citizens have confirmed COVID-19; the number of cases rapidly increased since then. On March 1 - September 30, 2020, Indonesia has confirmed 287.008 positive cases, with 10.740 deaths [1]. The COVID-19 pandemic disrupted public health and took away human freedom in social and economic life's. Based on the OECD survey [2], the toll on mental health, employment, disposable income, access to education, familial and friendship relationships are the main public concern while social distancing, school, and industry closures are implemented in effort to mitigate the COVID-19 pandemic.

The COVID-19 outbreak is an unprecedented event, and much about the virus remains

unknown. Due to the obscurity of this virus make a lot of disinformation and panic attacks. Previously, recognize six types of coronavirus that can infect humans. SARS-CoV-2, which causes COVID-19, is the 7<sup>th</sup> member of the *Coronaviridae* family; furthermore, it belongs to the same subgenus as the coronavirus causes SARS disease [3, 4]. The viability of SARS-CoV-2 is quite good; they can survive on inanimate surfaces for up to 3 days [5]. It is no wonder that COVID-19 spreads widely by droplets. People who are infected with COVID-19 show varied symptoms, with the main symptoms being fever, dry cough, fatigue, myalgia, sore throat, and shortness of breath, while more severe conditions are characterized by pneumonia, respiratory failure, septic shock, and multiple organ dysfunction which can lead to death [6, 7]. Age and the presence of comorbidities (heart disease, diabetes, chronic respiratory disorders, hypertension, and cancer) can lead to more severe conditions with a mortality ratio (> 10%) [8].

After seven months of COVID-19 outbreak in Indonesia, there is no vaccine or treatment against COVID-19. Preventive measures rely on 3M protocol, wash hands with soap/hand sanitizer, maintain a safe distance, and wear a mask. Even though data from the Indonesian Ministry of Health [9] shows the case fatality rate (CFR) has decreased from 8.9% (the beginning of the pandemic) to 3.7% and the cure rate reached 75% this September, stringent preventive measures must be followed until the pandemic ends. Public adherence in implementing health protocols is the key to success in controlling the spread of COVID-19. The level of public awareness influences adherence in implementing health protocols. Disaster awareness is defined [10, 11], having relevant knowledge and skills about disaster management before, during, and after a disaster to reduce disaster risk. The study results by Alahdal [12] show that awareness is positively correlated with attitude and practice. An awareness study of COVID-19 is urgent to be carried out so that gaps can be found in implementing government policies related to COVID-19.

Several studies [13, 14] related to awareness of COVID-19 have previously been carried out with most target sample students in the health sector. The general public awareness study of COVID-19 [15, 16] enrollment of junior high school student respondents only small (< 20%). This study aims to investigate the awareness level of junior high school students towards COVID-19. Assessing awareness toward COVID-19 among junior high school students would help provide the development of preventive strategies. In terms of their age development, junior high school students are not included in the vulnerable group, but they feel the secondary impact of COVID-19. In Indonesia, 8.2 million children are taken care of by an elderly caregiver (> 60 years age) who are at high risk of being exposed to COVID-19 [17]. This condition can be worrying, but it could be a good opportunity if junior high school students are trained to become disaster awareness agents expected to build a community that can survive both psychologically and physically in this pandemic. To the authors' knowledge, this study is the first to be conducted in Yogyakarta to determine junior high school students' awareness level.

**2. RESEARCH METHOD**

This descriptive survey was conducted from September 30, 2020, to October 2, 2020. An online survey using Google form was done in this study considering the COVID-19 situation. The minimum target sample size was 131 from 384 students at on of

junior high school in Bantul, Yogyakarta. The smallest acceptable size determined using the Harry King Nomogram formula [18] with a ±5% margin of error and a confidence level of 85%. After three days, a total of 157 students took part in the survey.

The self-reported questionnaire was developed by the authors, according to guidelines for the community of COVID-19, by the Centers for Disease Control and Prevention (CDC) and World Health Organisation (WHO) to assess knowledge [19, 20]. Attitude and practices instrument was adapted from Hanawi et al. [21]. The survey questions consisted of 24 items in a multiple-choice format, consisting of; (1) 10 questions of knowledge (K1-K10); (2) 8 questions of attitude (A1-A8); (3) 6 questions of practices (P1-P6) and; one question regarding the source of COVID-19 information. Students are given a choice of answers "agree" and "disagree" to respond to the attitude question, "Yes" and "No" to respond to the practice question. Knowledge questions are given four answer choices (A, B, C, D), and students can answer them according to their knowledge. Each correct answer will be given 1 point, while the wrong answer will be given 0 points. Awareness is assessed from the total score, with a higher score indicating a higher level of awareness towards COVID-19. Student awareness levels are classified using the modified Bloom's cut-off point (Table 1). The data obtained were analyzed using descriptive statistics with the help of SPSS ver.20 in the form of frequency, percentage, mean, and histogram to show the level of awareness.

**Table 1.** Criteria level of student awareness

Score	Level
80-100%	High
50-79%	Moderate
<50%	Low

**3. RESULT AND DISCUSSION**

A total of 157 students were involved in the final analysis, of which 109 females and 48 males. Concerning the student's source of information, the result disclosed that the primary source of information was social media (50.9%), followed by mass media (33.8%) and government web (15.3%).

**3.1 Knowledge toward the COVID-19**

Several questions were given to students to find out their knowledge of COVID-19 (Table 2). Students' knowledge of the source of COVID-19 transmission and the incubation period was high (> 90%) students

answered correctly. Question K1 (97.5%) of students answered correctly that a viral infection caused COVID-19. Question K2, as many as (94%) students answered correctly on question K2 that bats act as

intermediaries for transmitting COVID-19 to humans. Question K3 of students answered correctly that the SARS-CoV-2 incubation period was 2-14 days (91.7%).

**Table 2.** Student knowledge toward COVID-19

Indicator	Question	True (%)	False (%)	Knowledge Score (Mean±SD)	
				Female	Male
Describe the source of transmission of COVID-19 and the incubation period	K1	97.5	2.5	70.18±16.27	65.21±18.79
	K2	94.3	5.7		
	K3	91.7	8.3		
Understand the clinical symptoms that a person infected with COVID-19	K4	37.6	62.4		
Grouping groups who are susceptible to infection with COVID-19 based on their age and medical history	K5	65.6	34.4		
	K6	46.5	53.6		
Describes the mode of COVID-19 transmission	K7	51	49		
Understand the measures to prevent and treat COVID-19 infection	K8	56.7	43.3		
	K9	53.5	46.5		
	K10	92.4	7.6		

The second indicator, more than half of the students (62.4%) incorrectly answered questions about clinical symptoms indicated by people infected with COVID-19. Question K5, students can answer the age group > 60 years correctly, and pregnant women are more susceptible to COVID-19 (65.6%). On question K6 the students answered correctly and wrongly were not significantly different from the previous indicators. Students answered correctly (46.5%) that hypotension was not a comorbid disease that could aggravate the COVID-19 infection condition (53.6%). The fourth indicator on question K7, students, answered correctly (51%) and answered wrong (49%) the COVID-19 transmission mode.

Respectively, students answered correctly (56.7%) for K8 and (53.5%) for K9. Question K8 students were asked to identify inappropriate steps in using masks; from the results, there are (43.3%) students who do not know the steps that are not appropriate when using masks. Similar to question K9, whereas (46.5%) students still have difficulty ranking the effectiveness of several types of masks recommended by WHO. The fourth and fifth indicators of student knowledge are not significantly different, except for the fifth indicator, question K10. The majority of students (92.4%) answered questions on question K10 correctly

if the minimum isolation period for COVID-19 patients was 14 days. A small number of students (7.6%) did not know the minimum isolation period for COVID-19 patients.

Depend on the mean value, the average student knowledge of COVID-19 was at a moderate level. This finding is similar to a previous study conducted in Malaysia; knowledge about COVID-19 was also at a moderate level with a mean score of 10.5 ± 1.4 [23]. Students still have difficulty answering some knowledge questions related to COVID-19. There were several questions (K4, K6, K7, K8, and K9) that almost half of the students (> 40%) miss it. That question is more unfamiliar to the student with no medical basis. Based on previous studies, students who take medical degrees have better knowledge than non-medical students [24]. Knowledge of COVID-19 is positively correlated with gender; women have higher knowledge than men [25]. The results of measuring students' knowledge of COVID-19 showed the same thing, the mean score (70.18±16.27) for female students and (65.21±18.79) for male students. This finding contrasts with the study results in Uganda, where male students had a higher knowledge score than women (83.2% vs. 80.9%), although it was not statistically significant [26].

**3.2 Attitude towards the COVID-19**

Students’ attitudes toward COVID-19 are measured by two indicators consisting of 8 questions (Table 3). The first indicator is prevention efforts, and the second indicator is trust in the government in controlling COVID-19. Question A1 regarding the importance of keeping a safe distance of at least 1 meter, students 100% agree. In question A2, most students agreed (96%) that washing hands using soap/hand sanitizer is an effort to protect themselves

from exposure to COVID-19; only (3.8%) disagree. Question A3, most students agree (97.5%) essential to change masks after they feel damp and wet, but some students disagree (2.5%). Question K4 (94.9%) students agreed that they should stay at home only unless they got flu accompanied by a fever above 38°C and a cough they agreed to get medical treatment, while (5.1%) responded disagree. Not much different from the previous attitude response, most students (98.7%) agreed to do a rapid test and swab test if they experienced symptoms that indicated COVID-19.

**Table 3.** Student attitude toward COVID-19

Indicator	Question	True (%)	False (%)	Knowledge Score (Mean±SD)	
				Female	Male
Attitude towards efforts to prevent COVID-19	A1	100	-	98.34±4.67	96.52±6.83
	A2	96.2	3.8		
	A3	97.5	2.5		
	A4	94.9	5.1		
	A5	98.7	1.3		
Trust in the government in controlling COVID-19	A6	99.4	0.6		
	A7	96.8	3.2		
	A8	99.4	0.6		

In the second indicator, which consists of 3 questions, most students (> 95%) give a positive response. Question A6, only (0.6%) students responded that they disagreed that COVID-19 in Indonesia would be controlled if the community adhered to health protocol. Responding to question A7, (96.8%) students agreed PSBB could control the spread of COVID-19, and (3.2%) students disagree. Last question attitude, most students (99.4%) agreed that the preventive measures (washing hands regularly, using masks, maintaining distance, and maintaining immunity by consuming nutritious foods) recommended by the Indonesian MOH could help prevent the spread of COVID-19. The results of measuring students' attitudes show the same thing in several previous studies [27, 28, 29] that students have a positive attitude towards COVID-19. It is indicated by acquiring a mean score (98.34 ± 4.67) for female students and (96.52 ± 6.83) for male students. Attitude is directly influenced by knowledge [30]. The higher the attitude score, the more frequently they are doing practices to prevent COVID-19 [31].

**3.3 Practices towards the COVID-19**

Practices questions were asked to determine how to practice prevention measures for the spread of COVID-19 in students' daily lives (Table 4). As many (68.2%) students answered yes, while others (31.8%) answered no. Students have implemented a safety distance from other people at least 1 meter in question P2 (90.4%). Question P3, (93%) students had avoided the handshake culture, while (7%) students did not. Students (87.9%) have applied washing hands using soap with running water for 40 seconds after going to public places, while (12.1%) did not. Question P5 is about disinfection practices on frequently touched surfaces such as door handles, cellphone screens, and computer keyboards. Students disinfected more frequently on surfaces that were touched frequently in recent times (73.2%), and others (26.8%) did not. Lastly, when asked about the use of masks when leaving the house, most students (98.1%) used masks when leaving the house. There is still a small percentage of students (1.9%) who do not use masks when leaving the house.

**Table 4.** Student practices toward COVID-19

Indicator	Question	True (%)	False (%)	Knowledge Score (Mean±SD)	
				Female	Male
Take measures to prevent the spread of COVID-19 in everyday life during the pandemic	P1	68.2	31.8	88.79±12.9	76.10±23.4
	P2	90.4	9.6		
	P3	93	7		
	P4	87.9	12.1		
	P5	73.2	26.8		
	P6	98.1	1.9		

Generally, students have acceptable practices against COVID-19 with a mean score of (88.79) for female students and (76.10) for male students. These results are similar to Jordanian and Bangladesh students; they have acceptable practices in preventing COVID-19 [32, 33]. Practices were positively correlated with knowledge with a score ( $r = 0.291$ ,  $P < 0.01$ ). Adherence to implementing practices in preventing COVID-19 is influenced by knowledge [34]. Many factors can influence COVID-19 prevention efforts, including positive attitude, age level, gender, family income, and area of residence.

**3.4 Level of awareness towards the COVID-19**

Students’ awareness of COVID-19 was assessed by obtaining a total score of knowledge, attitude, and practices. The result shows that students’ lowest total score is (54), and the highest score is (100) (Table 5). Six students get the highest score, namely two male students and four female students. The lowest score was only obtained by male student as many as one student.

Based on the table (Table 6), female students’ level of awareness is higher than male students. It can also be shown from female students’ mean score (83.86), while male students (78.12). Students who have a high level of awareness are mostly female students (Figure 1), with 63.2%. Some male students fall into the high level of awareness category, but it does not reach 20%. This result differs from previous research, that gender is not positively correlated with awareness with a t-value of 0.219 [35]. In contrast to other studies, gender is one factor that influences disaster awareness and

education level, and age [36]. The study found (24.2%) students at moderate awareness level category, and (11.5%) female students, and (12.7%) male students. There are no students in the low awareness level category because of their total score of more than 50.

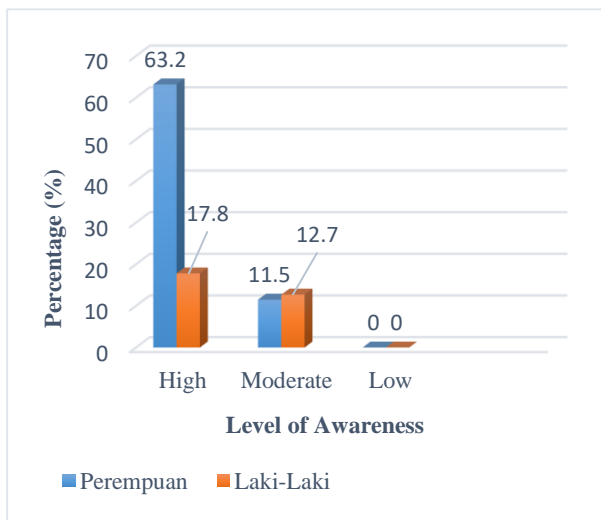
**Table 5.** Level of awareness students

Level of Awareness	Female	Male
High	91 (63.2%)	28 (17.8%)
Moderate	18 (11.5%)	20 (12.7%)
Low	-	-

The results of the measurement of the overall level of student awareness showed the expected results. While, aspects of student knowledge still need special attention. Especially at the clinical symptom points of COVID-19, comorbidities that can aggravate COVID-19, the proper procedure for using masks, and determining the effectiveness of masks as recommended by WHO. Limited student knowledge of COVID-19 can occur due to the lack of access to credible sources of information. The majority of students (50.9%) obtained COVID-19 information from social media. This finding is consistent with previous research in Jordan, where 75% of respondents relied on social media to source information related to COVID-19 [37]. Social media, as we know, it is more vulnerable to unconfirmed information. That can create confusion in determining which information is appropriate.

**Table 6.** Student’s scores of awareness toward COVID-19

Total Score (Awareness)	Female	Male	Awareness Score (Mean±SD)	
			Female	Male
54	0 (0%)	1 (0.6%)	83.86±7.9	78.12±10.9
58	1 (0.6%)	3 (1.9%)		
62	0 (0%)	2 (1.3%)		
66	2 (1.3%)	3 (1.9%)		
70	7 (4.5%)	3 (1.9%)		
75	8 (5.1%)	8 (5.1%)		
79	19 (12.1%)	8 (5.1%)		
83	23 (14.7%)	9 (5.7%)		
87	19 (12.1%)	5 (3.2%)		
91	18 (11.5%)	1 (0.6%)		
95	8 (5.1%)	3 (1.9%)		
100	4 (2.6%)	2 (1.3%)		



**Figure 1** Level of awareness student

Responding to a growing problem regarding the disinformation of COVID-19, the Indonesian government has launched an official website that can be accessed on the Covid19.go.id page. The general public can access information on the development of COVID-19, which is updated periodically on the site. Such a solution has not been sufficient for young

people; a more attractive and informative media is needed to dig up information on COVID-19. Digitalisation in schools important to support online teaching, and game as one of the example [38]. Gamification in learning online can be the alternative to improve student awareness toward COVID-19 [39]. The role of schools to increase student awareness of COVID-19 is very important, apart from family. Schools are strategic media to raise student awareness through demonstrations, simulations, training, and other media such as video tutorials and educational games for COVID-19, such as those launched by the East Java provincial government.

The study's findings can help the authorities raise awareness of COVID-19 in junior high school students in particular. However, in this research, several limitations need to be considered. The instrument used in this study has not been tested for validity and reliability content, then the aspects of attitude and practices are a closed questionnaire. Students can only answer based on the available answer choices, thus allowing them to answer questions about attitude and practices positively on what is expected of them.

#### 4. CONCLUSIONS

Generally, most students are aware of COVID-19. They lack knowledge about severe COVID-19 infection; illness can aggravate COVID-19, transmit COVID-19, wear mask properly, and determine the effectiveness recommendation mask from WHO. Schools must develop more attractive strategies to increase junior high school student knowledge of COVID-19, which is embedded in learning materials.

#### AUTHORS' CONTRIBUTIONS

The first author contributes to making conceptualization and investigated the research. The second and third author contributes to validated and review draft article.

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