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ATTITUDE AND BEHAVIOR TOWARDS COVID-19 CONTROL AMONG HIGH SCHOOL STUDENTS IN SURABAYA AND SIDOARJO, INDONESIA

Muhammad Nuh Ihsan[1], Ahila Meliana[1], Nurina Hasanatuludhhiyah[2] iD, Visuddho Visuddho[1], Abdul Khairul Rizki Purba[2], Annete D'Arqom[2]

[1]Medical Program, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia,
[2]Department of Anatomy, Histology, and Pharmacology, Universitas Airlangga, Surabaya, Indonesia

ABSTRACT

Morbidity and mortality due to Covid-19 tend to be milder in adolescents. Nevertheless, their perception, attitude, and behavior towards Covid-19 deserve attention since they would also contribute to the success of Covid-19 control. Therefore, the aim of this study was to examine the perceived severity, susceptibility, attitudes, and behavior toward Covid-19 among high school students. This was a cross-sectional study conducted in five schools in Surabaya and Sidoarjo. Questionnaires were given online to teachers who then forwarded them to high school students. Data were taken from July to October 2021. Attitude and behavior were examined using the scoring previously tested. The data were then analyzed using Mann-Whitney U and Spearman's correlation tests. The significance level was set at p<0.05. More than 50% of students had good preventive behavior, the most frequent one was wearing masks (87.3%), followed by washing hands (73%). The behavior was correlated with their attitude (r= 0.285, p=0.000). Fifty-three percent of the respondents felt they would experience mild symptoms if they were infected with Covid-19. Most students perceived that they were susceptible to getting infected with Covid-19. Significant results were obtained using the Mann-Whitney test on gender toward attitudes and behavior (p<0.05). There were significant correlations between the mother's educational level (r=0.164, p=0.001) and the father's educational levels (r=0.120, p=0.013) with attitude toward Covid-19 control policies. Female students in Surabaya and Sidoarjo have better behavior in dealing with the Covid-19 pandemic. Parents' educational level plays a role in influencing the student's attitude toward Covid-19 control.

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INTRODUCTION

SARS COV-2 was discovered in Wuhan, Hubei province, China, in January 2020[1]. This virus had spread so widely to Asia Pacific countries including Indonesia. At the time of this study, there were around 6.7 million cases of Covid-19 in Indonesia with around 160,000 deaths[2]. The number of Covid cases in Surabaya was recorded at around 144,000 cases with around 3,000 deaths[3]. This disease causes quite severe pneumonia. The symptoms caused by Covid-19 are quite varied, including coughing, shortness of breath, vomiting, diarrhea, and fever. The mechanism for spreading the Covid-19 virus can be through respiration as a result of inhaling Covid particles which are released into the air in the form of aerosols, fecal-oral due to ingesting the virus through the mouth, and eyes when exposed to the virus[1].

Based on prevention strategies according to WHO, how to prevent the transmission of Covid infection includes maintaining the sanitation of both hands and the air we breathe, using good PPE, disposing of trash properly, and keeping away from contacting and spreading droplets[4]. The Indonesian government had carried out several programs related to the prevention of Covid-19 including social distancing, regional PSBB (large-scale social restrictions), and social safety net. Social distancing was carried out based on the president's order by utilizing individual awareness to prevent transmission of Covid-19 by maintaining a minimum distance of 1 meter, avoiding crowds, and carrying out work-from-home, worship from home, and study at home activities. Regional PSBB was carried out if social distancing activities were felt to be less than optimal to prevent transmission of Covid-19. The social safety net is a program to deal with deteriorating economic conditions[5].

Government programs related to social distancing and PSBB had been implemented in the community to reduce the incidence of Covid-19 infection. However, the incidence of infection still occurred. This was possible for several reasons, including community disobedience and the many violations in society[6]. Based on PSSB violation cases in Jakarta, there were 18,974 violation cases[7]. The large number of incidents of violations was due to a potential lack of understanding and trust in the community. The lack of understanding and trust can be an indication of the lack of acceptance of Covid-19 and behaviour. This is inconsistent with "new normal" life as a new habit of life resulting from the Covid-19 pandemic[8].

All ages are at risk of contracting Covid-19. However, the young age group, primarily the adolescents, can be a source of transmission of Covid-19 infection. Groups under 20 years are more susceptible to Covid-19 infection and among those aged 10-19 years 79% tend to experience asymptomatic symptoms[9]. Sufficient education is needed for the establishment of social distancing and PSBB programs to raise awareness among adolescents[10]. Education can be provided by providing material related to the dangers of Covid-19 and its prevention. This education can be done at school or at home. Education aims to provide understanding to increase acceptance of Covid-19 pandemic and encourage "new normal" behavior as a prevention of Covid-19 transmission, and to increase understanding of the effect on adherence in carrying out health protocols[11]. The effectiveness of education in achieving "new normal" behavior can be

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influenced by several factors, including sociodemographic factors and under-standing related to Covid-19[12]. Therefore, this study aimed to find out the effect of sociodemographic factors on behavior and acceptance attitudes to prevent transmission of Covid-19 from high school students in Surabaya and Sidoarjo, Indonesia.

MATERIALS AND METHODS

Study design and population

This study was a quantitative cross-sectional study design using an online survey on the https://app.surveyplanet.com/ website with due observance of CHERRIES principles[13]. This research was conducted from July to October 2021. High school students aged 15-18 years living in Surabaya and Sidoarjo from 5 schools that were selected based on convenience sampling agreed to participate in the study. The minimum sample size calculated by http://www.raosoft.com/samplesize.html was 377, with 5% margin of error, and 95% confidence level. There were 432 participants included in this study. Each student participated in the study voluntarily. This study was approved by the Ethical Committee of the Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia (No. 136/EC/KEPK /FKUA/2021).

Questionnaire

Information for consent and the purpose of the research were given in the first page of the questionnaire, Participants were given an explanation about it. Participants' socio-demographic conditions were collected including age, gender, domicile, school, class, major, economic

level, and father's and mother's last education. Covid-19 preventive behavior was evaluated to identify the practice of washing hands with soap and water or hand sanitizer, wearing masks, physical distancing, avoiding crowds, and limiting mobility. During Covid-19, students' attitudes toward social limitations were assessed by confirming the acceptability of online learning, PSBB, PSBM, and the prohibition of mass entertainment activities.

Table 1. Sociodemographic characteristics of studied students according attitude and behavior

Sociodemographic variables		N	%
Age	15	131	(30%)
	16	71	(16%)
	17	194	(45%)
	18	36	(8%)
Sex	Male	165	(38%)
	Female	267	(62%)
Class	10	150	(35%)
	11	39	(9%)
	12	243	(56%)
Major	Mathematics and natural science	410	(95%)
	Social science	22	(5%)
Economic level	Below average	41	(9%)
	Average	370	(86%)
	Above average	21	(5%)
Father education level	Elementary school	24	(6%)
	Junior high school	22	(5%)
	Senior high school	171	(40%)
	Associate/bachelor	176	(41%)
	Master/doctoral	39	(9%)
Mother education level	Elementary school	19	(4%)
	Junior high school	30	(7%)
	Senior high school	188	(44%)
	Associate/bachelor	168	(39%)
	Master/doctoral	27	(6%)

Scorings were made for examining attitude toward Covid-19 control policies and Covid-19 preventive behavior. Perceived Covid-19 severity was measured through a question whether they would perceive to have a mild, moderate, or severe symptoms if they had Covid-19. Perceived Covid-19 susceptibility was determined by asking the respondents how was their

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possibilities of getting Covid-19. The questionnaire items were pre-tested for ascertaining their validity and reliability.

Data collections

To collect data, we asked the school principals for study consent. Afterwards, the questionnaire was given to the teachers who forwarded it to their students.

Statistical analysis

Statistical descriptive analysis was performed and the results were provided in a percentage table. Mann-Whitney U test and Spearman correlation test were performed. The data were analyzed by using the SPSS-17 application. The statistical test results were significantly different if the p-value was $p < 0.05$.

Table 2. Descriptive analysis of attitude, severity, and susceptibility responses of study participants

Attitude questions	N (%)		
	Disagreed	Neutral	Agreed
Your attitude towards online learning policies (learning from home)	73 (16.9)	311 (71.8)	48 (11.1)
Your attitude towards large-scale social restrictions (PSSB)	72 (16.6)	233 (53.8)	127 (29.3)
Your attitude towards the imposition of restrictions on community activities (PPKM)	113 (26.1)	219 (50.6)	100 (23.1)
Your attitude towards closing cinemas and entertainment venues	58 (13.4)	183 (42.3)	191 (44.1)
Your attitude towards limiting visits to malls and restaurants	67 (15.5)	205 (47.3)	160 (37)
Your attitude towards closing houses of worship or restrictions on religious activities	222 (51.3)	172 (39.7)	38 (8.8)
Perceived severity question	N (%)		
	Mild	Moderate	Severe
In your opinion, if you are infected with Covid-19, you will experience the symptoms	232 (53.6)	179 (41.3)	21 (4.8)
Perceived susceptibility question	N (%)			
	Impossible	Low	Moderate	High
In your opinion, what are the chances that you will get an Covid-19 infection	33 (7.6)	151 (34.9)	213 (49.2)	35 (8.1)

DISCUSSION

This study demonstrates attitudes, behavior, perceived susceptibility, and perceived severity among high school students and their correlations to sociodemographic factors during the second wave of Covid-19 in Indonesia. This study showed that there was an influence of differences in gender and parental educational level on health practices of attitudes and behavior toward Covid-19 and prevention and control among high school students in Indonesia. In this study, it was found that the attitude of adolescents still tended to be neutral toward health protocols. Additionally, most adolescents disagreed with social restrictions in terms of worship, online learning, and PPKM when compared to those who agreed. In addition, more than 50% of the students believed that Covid-19 infection's symptoms were mild. In line with our study, a research in Italy showed adolescents have a perception getting of mild symptoms from

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the Covid-19 infection[14]. They may be considering Covid-19 as a common cold virus[15].

Even though 79% of Covid cases at the age of 10-19 were asymptomatic[9], there was a necessity to emphasize that adolescents might contribute to being agents of Covid-19 transmission, resulting in never-ending outbreaks. This study illustrated that attitude was related to the mother and father's educational level. The students' mother education of below undergraduate level had a lower average attitude score. The finding in this study confirmed a previous research that maternal educational level and gender influenced student attitudes[16]. Parents may contribute to developing the students' attitudes. Increased education from students' parents potentially improves students' attitudes in accordance with the protocol during the Covid-19 pandemic.

The present study showed students felt more susceptible to being infected with Covid-19. Similarly, 57.4% of students in Canada[17] felt they were susceptible to being infected with Covid-19. This trend arises due to the opinion that the Covid-19 virus is widely spread and infects everyone. This is associated with the high ability of transmission and replication of the Covid-19 virus[18].

Adolescents have a tendency to gain new experiences by interacting with many people leading to high social interaction. Adolescent receives a lot of information about Covid-19 and less implemented the practice of Covid-19 which might encourage to increasing perceived susceptibility to Covid-19[19]. Our results showed that susceptibility to Covid-19 infection influenced attitudes towards social distancing protocols and perceptions of the severity of Covid-19 symptoms. It would be recommended to increase severity and susceptibility perceptions to achieve good practice to reduce Covid-19 transmission.

Table 3: Descriptive analysis of behavior responses of study participants

Behavior questions	N (%)			
	Never	Seldom	Occasionally	Always
In this 1 week, how is your behavior related to using masks correctly (covering your mouth and nose) in public spaces or at home (if needed, for example there is a family who is positive for Covid)	10 (2.3)	8 (1.8)	36 (8.3)	378 (87.3)
In this 1 week, how is your behavior related to washing your hands properly (following the WHO standard, namely washing your hands 6 steps), using soap with running water or an antiseptic	2 (0.5)	19 (4.4)	95 (21.9)	316 (73)
In the past 1 week, how have you behaved in public places, in terms of keeping a distance of at least 1 meter and not shaking hands	7 (1.6)	27 (6.2)	119 (27.5)	279 (64.4)
In this 1 week, how would you behave in terms of staying away from crowds in public places	5 (1.2)	34 (7.9)	116 (26.8)	277 (64)
In this 1 week, how do you behave in terms of reducing mobility	5 (1.2)	30 (6.9)	150 (34.6)	247 (57)
In this 1 week, how do you behave in terms of avoiding eating together in public places	20 (4.6)	37 (8.5)	111 (25.6)	264 (61)

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Table 4: Statistical analysis of sociodemographic characteristics against the mean of attitude and behavior scores

Sociodemographic variables		Attitude score				Behavior score			
		Mean	SD	r	P-value	Mean	SD	r	P-value
Age	15	12.23	0.32			18.12	0.18		
	16	11.94	0.20	-0.072	0.135*	18.10	0.26	0.013	0.781*
	17	12.03	0.40			17.99	0.17		
	18	12.41	0.25			18.11	0.38		
Sex	Male	11.39	0.19	-	0.000**	17.40	0.19	-	0.000**
	Female	12.60	0.17			18.46	0.12		
Class	10	12.07	0.23			18.02	0.17		
	11	13.13	0.44	-0.019	0.690*	18.49	0.23	0.024	0.613*
	12	12.02	0.17			18.01	0.15		
Major	Mathematics and natural science	12.18	0.14	-	0.228**	18.06	0.11	-	0.956**
	Social science	11.36	0.58			18.05	0.47		
Economic level	Below average	11.41	0.41			17.93	0.36		
	Average	12.21	0.14	0.062	0.202*	18.07	0.12	0.008	0.870*
	Above average	12.19	0.77			18.14	0.40		
Father education level	Elementary school	12.21	0.53			17.96	0.48		
	Junior high school	11.95	0.63			18.18	0.38		
	Senior high school	11.68	0.20	0.120	0.013*	17.91	0.18	0.053	0.270*
	Associate/bachelor	12.48	0.22			18.14	0.16		
	Master/doctoral	12.64	0.34			18.36	0.31		
Mother education level	Elementary school	11.79	0.75			17.58	0.54		
	Junior high school	11.23	0.48			17.83	0.45		
	Senior high school	11.75	0.19	0.164	0.001*	17.95	0.16	0.088	0.386*
	Associate/bachelor	12.70	0.22			18.27	0.17		
	Master/doctoral	12.56	0.55			18.07	0.42		

*Analyzed using spearman correlation test ** Analyzed using Mann-Whitney U test

Table 5. Correlation test between perceived severity, perceived susceptibility, attitude, and behaviour

Variables	Susceptibility		Severity		Attitude		Behavior	
	r	p value	r	p value	r	p value	r	p value
Susceptibility	1	-	-	-	-	-	-	-
Severity	0.100	0.038*	1	-	-	-	-	-
Attitude	0.136	0.005*	0.023	0.629	1	-	-	-
Behavior	0.019	0.699	-0.082	0.090	0.285	0.000*	1	-

*Significant level at $p<0.05$; analyzed using spearman correlation test.

This paper showed most of the students had good behavior towards the Covid-19 protocol. Most of the students used mask and wash their hands frequently, kept their distance, stayed away from crowds and eating together, and reduced mobility. Our results conformed a research in Iran. Students were more likely to keep their distance and maintain good sanitation[20]. In this study, the behavior of reducing mobility had the lowest value. This indicated that mobility becomes an important subject to be improved through government regulation and health promotion. A major finding in this study was that gender differences influenced behavior levels. Female students were better in behavior than males. It was consistent with other studies that have shown women to behave better in mask-wearing situations[21] and staying away from crowds[22]. This was related to the tendency of men to take more risky behavior. Another supporting reason was that the level of knowledge influenced behavior during the Covid-19 pandemic[23]. Previous

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studies exhibit higher knowledge in females rather than males[21]. Sex differences should be considered in enhancing Covid-19 knowledge. In this study, it was found that the attitude of acceptance was related to behavior. In high school, students' attitudes may play a role in achieving good behavior.

CONCLUSION

The Covid-19 virus outbreak was spreading widely and attacked all ages. High school students were one of the populations exposed to the Covid-19 virus. To reduce transmission rates, behavioral and attitude factors were emphasized. The research results indicated that most high school students in Surabaya and Sidoarjo complied with the Covid-19 protocol, especially in terms of handwashing and mask use. Education and supervision of behavior and attitudes need to be improved, especially for male students. Student attitudes and behaviors should be influenced by the parent's educational level.

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CONFLICT OF INTEREST

All Authors have no conflict of interest.

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AUTHOR CONTRIBUTION

All authors have contributed to all process in this research, including preparation, data gathering and analysis, drafting and approval for publication of this manuscript.

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