



## **Fear of Covid-19 Scale: An Exploratory Study among Young People in Higher Education Institutions**

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### **ABSTRACT**

This study explores some empirical validity of the fear of the Covid-19 scale. The study intends to examine potential validity when the scale is used for young people attending higher education institutions in Indonesia. Researchers invited undergraduate students from five universities in Indonesia. Four hundred forty five participants fully completed the survey within six weeks of data collection. The study was conducted online through an online survey platform where most participants completed the survey within 20 minutes. Two measures were employed, the fear of Covid-19 and the perceived stress scale. The results supported the theoretical measurement model in which fear of Covid-19 and perceived stress scale each represented a unidimensional construct. The Principal Component Analysis (PCA) also found that the fear of the Covid-19 scale generated positive loading factors for its items with an average variance extracted (AVE) higher than 50%. The Pearson's correlation's predictive validity study observed a positive and significant association between fear of Covid-19 and perceived stress. This study has provided initial empirical support for the use of fear of Covid-19 for young people who attend higher education institutions. The fear of the Covid-19 measure was also in line with several studies and the Conservation of Resource theory. People who perceive crisis will experience threats to their resources, and they will be more likely to experience stress if they do not have enough resources to cope with the threats.

**Keywords:** fear of Covid-19; higher education; students; perceived stress; validity

## INTRODUCTION

The Covid-19 crisis has attracted people's attention across the globe. Scientists across many fields put serious endeavours to produce scientific-based actions, medicine, and preventions to contain the spread of the Covid-19 (Nagy et al., 2021; Rousseau & Miconi, 2020; Vindegaard & Benros, 2020). The effect of the Covid-19 pandemic is detrimental to physical and mental health. Many studies have shown that not only the direct impact on physical well-being, Covid-19 situations, including the measures to prevent the spread, have adverse consequences on people's well-being and mental health (Cullen et al., 2020; Gavin et al., 2020; Pfefferbaum & North, 2020; Rousseau & Miconi, 2020; Talevi et al., 2020).

Young people under 25 years of age also experience the mental health consequences of Covid-19. Studies have shown that young people in education institutions struggle to adapt their learning behaviors even though some successfully cope with the crisis (Suleri, 2020; Tang et al., 2021; Yaman et al., 2020). Many of these young people suffer from fear of Covid-19 despite being more likely to survive the infections than their older counterparts (Zhang et al., 2021). However, many current studies show that young people in educational institutions are experiencing fear of Covid-19 and developing anxiety (Alsolais et al., 2021; Asselmann et al., 2020; Burns et al., 2020; Morales-Rodríguez et al., 2021; Rodríguez-Hidalgo et al., 2020).

Considering the importance of understanding the Covid-19 crisis and fear of Covid-19 among young people, particularly in education settings, this study aims to study the use of the fear of Covid-19 scale among university students and examine the scale's predictive validity using the perceived stress scale. By conducting this study, readers will be able to understand the fear phenomenon and consider using a psychometric-sound measure to detect the fear of Covid-19 among young people.

## METHOD

In order to examine the psychometric quality of the scale, participants were recruited from five universities in Indonesia. Participants must be younger than 26 years and enrol in undergraduate courses. Online advertisements were circulated with the help of lecturers, professors, and alumni representatives. Initially, 543 participants responded to the invitations, but only 445 fully completed the survey within six weeks of data collection. The survey was administered online using a popular survey platform, and it could be completed within 20 minutes. The survey included the fear of Covid-19 scale and perceived stress scale. The fear of Covid-19 was developed by Ahorsu et al. (2020) and had seven items (Likert options 1= strongly disagree to 5= strongly agree). The fear of Covid-19 scale and perceived stress scale were adapted from English to Bahasa Indonesia (Brislin, 1970). The scale was considered reliable, with Cronbach's alpha of .83. Cohen et al. (1983) developed the perceived stress scale with Likert options (1= never to 5 very often) and was considered reliable, with Cronbach's alpha of .77.

## RESULTS AND DISCUSSION

### Result

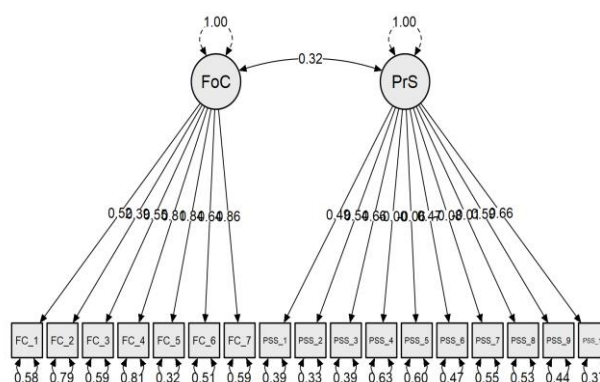
#### 1. Construct validity

This study examined the construct validity of the measurement model for fear of Covid-19. Since the data were collected together with the perceived stress, this study examined whether the scale formed an independent dimension for each measure. The results are presented as follows:

**Table 1**  
**Fit indices**

Index	Value
Comparative Fit Index (CFI)	0.928
Tucker-Lewis Index (TLI)	0.916
Bentler-Bonett Non-normed Fit Index (NNFI)	0.916
Root mean square error of approximation (RMSEA)	0.060
Goodness of fit index (GFI)	0.950
Standardized root mean square residual (SRMR)	0.082
Bollen's Incremental Fit Index (IFI)	0.928
Relative Noncentrality Index (RNI)	0.928

The above results show acceptable fit measures (fit indices were higher than .90 and .95, and RSMSEA and SRMR were lower than .08 and .09, respectively) for the unidimensional of the fear of the Covid-19 and the perceived stress. This suggests that both measures reported different variables in the study.



**Figure 1. measurement model analysis**

Next, we ran a Principal Component Analysis (PCA) to examine the unidimensional of the fear of Covid-19 measure, including variance extracted with a single factor solution. The results showed that the measure could show 50% Average Variance Extracted (AVE) with all items showing factor loadings higher than .40, suggesting a proper and acceptable measure for research purposes. The following table 2 presents the factor loadings of the scale:

**Table 2**  
**Component Loadings**

	PC1	Uniqueness
FoC_1	0.657	0.569
FoC_2	0.490	0.760
FoC_3	0.658	0.567
FoC_4	0.759	0.423
FoC_5	0.842	0.292
FoC_6	0.731	0.465
FoC_7	0.767	0.411

*Note.* Applied rotation method is varimax.

## 2. Descriptive statistics and Bivariate correlations

The following tables 3 and 4 describe the descriptive statistics and correlations among variables in the study:

**Table 3**  
**Descriptive Statistics**

	Age	Gender	Education	Income	Fear of Covid-19	Perceived Stress
Valid	345	345	345	345	345	345
Missing	0	0	0	0	0	0
Mean	24.930	0.316	4.113	1.771	2.790	2.010
Std. Deviation	9.957	0.466	0.692	1.170	0.724	0.424
Minimum	14.000	0.000	1.000	1.000	1.000	0.500
Maximum	64.000	1.000	6.000	5.000	5.000	3.400

**Table 4**  
**Pearson's Correlations**

Variable	1	2	3	4	5	6
1. Age	—					
2. Gender	0.044	—				
3. Education	-0.078	-0.156 **	—			
4. Income	0.313 ***	0.032	0.258 ***	—		
5. Fear of Covid-19	-0.035	-0.108 *	0.015	-0.108 *	—	
6. Perceived stress	-0.176 **	-0.123 *	-0.044	-0.243 ***	<b>0.205 ***</b>	—

\* p < .05, \*\* p < .01, \*\*\* p < .001

The correlation table shows that fear of Covid-19 was positively and significantly associated with perceived stress (0.205, p < .001). In addition, the results also indicated a significant negative correlation between fear of Covid-19 and income (-0.108, p < .05).

## Discussion

This study aims to study the application of the fear of Covid-19 scale for measuring fear of Covid-19 among young people in educational institutions. The results suggested empirical evidence regarding the construct and criteria-related validity for fear of the Covid-19 scale. This study provided early evidence of using a psychometric scale for measuring fear of Covid-19. It is recommended for researchers to investigate this finding further as more evidence is necessary to support the use of the fear of the Covid-19 scale.

There are some critical points related to this study's findings. Firstly, fear of Covid-19 is a common phenomenon and widely occurs among people regardless of the level of their education, age, and social-economic status/ income (Ahorsu et al., 2020; Erbiçer et al., 2021; Li, 2021; Rodríguez-Hidalgo et al., 2020; Siddique et al., 2021). This study has informed us that fear also occurs even for people less vulnerable to viral infections. Young people are affected by the Covid-19 pandemic because it threatens their physical health and mental health, well-being, relationships, and quality of life.

Secondly, this study found a consistent link between fear of Covid-19 and perceived stress. Conservation of Resource theory and its applications (Hobfoll, 2001) have suggested that people strive to avoid threats to their resources, and the unprecedented effects of Covid-19 have threatened many people across groups around the globe. Therefore, people are terrified and seek ways to conserve their remaining resources or gain new support from others.

Thirdly, people's income (i.e., monthly wages) was negatively correlated with fear of Covid-19 and perceived stress. There is a possible tendency that some people with higher monthly income might be more resilient in a Covid-19 pandemic. These people perceive more resources and support from their financial income. Thus, in this crisis, a stable and reliable income (in the form of monthly wages) must be ensured to provide support amid the pandemic. Of course, this does not mean that the fear could be eliminated by providing more income. Other factors could influence the fear and stress related to the Covid-19 pandemic, and financial, social, and psychological supports could be some of them.

## CONCLUSIONS

This study found empirical support for using the Fear of Covid-19 scale for the young people group. The construct validity and predictive validity were both supported. However, this study only provided an early investigation on the fear of the Covid-19 scale, and more empirical studies are expected to develop more robust psychometric evidence for this scale.

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