Parental Factors Related to COVID-19 Prevention Behavior in Children with Intellectual Disability: Partial Least Square Structural Equation Modeling

Zumrotul Chairijah[1,*], M. Zen Rahfiludin[2], Ani Margawati[3] and Annastasia Ediati[4]

[1]*Doctoral Program of Public Health, Faculty of Public Health, Diponegoro University, Indonesia*

[2]*Department of Public Health, Faculty of Public Health, Diponegoro University, Indonesia*

[3]*Department of Nutrition Science, Faculty of Medicine, Diponegoro University, Indonesia*

[4]*Faculty of Psychology, Diponegoro University, Semarang, Indonesia*

Abstract: Efforts to prevent COVID-19 in children with intellectual disability require the role of parents. Even though the vaccine has been implemented, the most important effort is to implement health protocols. Implementing health protocols cannot be separated from knowledge, attitudes, intentions, subjective norms, and social support from parents. This research aims to determine the influence of knowledge, attitudes, intentions, subjective norms, and social support on the COVID-19 prevention behavior of parents of children with intellectual disability. This type of research is descriptive correlational research, and the developed model is validated using the partial least squares structural equality modeling (PLS-SEM) approach based on data collected from 100 parents of children with intellectual disabilities taken using purposive sampling at Semarang Municipal Special Schools.The study results show that parental characteristics, namely education, influence attitudes, which can ultimately affect parental intentions. Parental education also affects social norms, namely social support and subjective norms, which can determine COVID-19 prevention behavior. Parental education is a priority in public health strategies because it can directly shape attitudes, intentions, and social norms that can improve the health of children with intellectual disabilities. Health programs and education for parents must be focused and carried out consistently and continuously.

Keywords: Children's intellectual disability, COVID-19 preventive behavior, theory of planned behavior.

1. INTRODUCTION

Corona virus disease 2019 (COVID-19) is one of the causes of death globally, ranking third in 2020 and second in 2021 [1]. More than 760 million cases and 6.9 million deaths have been recorded worldwide since 2019, but the actual number may be more than recorded [2]. In the United States, COVID-19 has attacked more than 1 million people and died from March 2020 to 2022 [2]. 15% of cases in the United States are suffered by people with intellectual disability, higher than those without intellectual disability, namely 7.9% [3]. African countries with COVID-19 in dormitories have a higher incidence than non-dormitory residents [3-5]. Indonesia cannot be separated from the COVID-19 incidence, with Jakarta being the largest center for COVID-19. Second place is West Java, third is East Java, fourth is East Kalimantan, and Central Java is in fifth place [6]. The incidence of COVID-19 in the city of Semarang is at the top in Central Java.

Everyone has the same opportunity to get COVID-19, including children with intellectual disability [7-9]. The incidence of COVID-19 in children still ranks at the top of the Asian level [10. Globally, vulnerable populations, including persons with disabilities, are often marginalized, economically disempowered, experience poor social conditions, and lack access to health care, education, and social services [11,12]. Various efforts have been made to overcome these events so people can avoid this outbreak [13, 14]. Prevention efforts are important so as not to be affected, even complications of COVID-19 [15]. One of the efforts to prevent the transmission of COVID-19 is to implement health protocols. However, teaching health protocols to children with intellectual disability is not an easy matter, requiring the role of parents with more frequent intensity. Parents' ignorance of health protocols is the cause of the unsuccessful prevention of COVID-19 in children with intellectual disability.

Several theories of health behavior are used to study preventive behavior. During a pandemic, preventive measures are crucial for shielding susceptible populations and the general public from harm and preventing the virus from spreading across the population [16, 17]. A theoretical approach to behavioral research offers a potential way to investigate the factors that influence various preventive and professional actions in public health [18-20]. The theory of planned behavior (TPB) is one such theory that is frequently and effectively applied in social behavioral research and public health [21,22].

*Address correspondence to this author at the Doctoral Program of Public Health, Faculty of Public Health, Diponegoro University, Indonesia;
E-mail: zumrotulnwu@gmail.com

According to the theory of planned behavior, an individual's purpose to conduct determines their behavior, which is influenced by a number of internal and external circumstances. Factors are behavioral behaviors, subjective norms, and perceived behavioral control. The first aspect, attitudes, shows how a person feels about their behavior and whether or not they have positive or negative opinions about it. Subjective norms, the second aspect, describes how significant others are believed to demand things of you and how motivated you are to live up to them. The third component is perceived behavioral control or the judgment of how simple or complex the behavior is to carry out [23-25].

While there is substantial research on COVID-19 prevention and its impact on communities, there is a significant gap in understanding the specific behaviors and challenges faced by parents of children with intellectual disabilities who have real specific challenges in implementing prevention measures. The existing literature often overlooks the unique barriers these parents face and how their perceptions, attitudes, and behaviors impact their ability to implement health protocols effectively. This research aims to find out what factors influence the behavior of parents of children with disabilities in preventing COVID-19based on the TPB theory.

2. MATERIALS AND METHODS

2.1. Design and Participants

This type of research is descriptive correlational. Respondents were parents who had children with mild intellectual disabilityat Semarang Municipal Special Schools, using a purposive sampling technique.The total sample is 100 respondents. Data collection was carried out directly from respondents. Instrument trials were carried out in three Special Schools in Semarang Regency. The research was conducted from October 2021 to January 2022.

2.2. Research Tool

This research instrument is a structured questionnaire created by the researcher, which consists of six parts. The first section contains the characteristics of the respondents, including age, education, gender, history of COVID-19, and history of vaccines. The second part includes twelve knowledge questions with correct (B) and incorrect (S) answer choices, with poor and good categories. The third section contains fifteen parental attitude questions with answer choices: strongly agree (SS), agree (S), disagree (KS), and disagree (TS), with negative and positive attitude categories. The fourth section contains twelve questions about parental intentions, with answers to the questions of strongly agree (SS), agree (S), disagree (KS), and disagree (TS), with the categories of poor intentions and good intentions. The fifth section contains fifteen questions about parental behavior with answer choices of never (TP), sometimes (KD), and often (SR) with poor and good categories. The sixth section contains twelve parental subjective norm questions with answer choices of strongly disagree (STS), disagree (TS), agree (S), neutral (N), and strongly agree (SS) with poor and good categories. The seventh section contains twelve social support questions with answer choices of strongly disagree (STS), disagree (TS), neutral (N), agree (S), and strongly agree (SS).

2.3. Model Development

Partial Least Square Structural Equation Modeling (PLS-SEM) was used for this study. A hypothetical model was established for conducting PLS-SEM analysis based on existing health behavior change models and theories of the Theory of Planned Behavior (TPB). "Characteristics" are treated as the exogenous variable; in PLS-SEM, the term "exogenous variable" is used instead of the independent variable. "Attitude", "subjective norms", and "perceived behavior control" were treated as the first-level endogenous variables or mediators. Instead of dependent variables, the PLS-SEM analysis uses the term "endogenous variables". "Intention" is treated as a second-level endogenous variable or mediator. "Covid-19 prevention behavior" was selected as an outcome." Characteristics" is a latent variable with three measurable variables, namely age with a scoring of 1=young, 2=mature, and 3=old, education with a scoring of 1=basic, 2=intermediate, and 3=high and sex with scoring 0=man and 1=women. "Attitude" with scoring 0=negative and 1=positive, and "intention" were single-measured variables with scoring 0=not good and 1=good. "Subjective norms" is a latent variable with two measurable variables, namely subjective norms and social support, with scores 0=not good and 1=good. "Perceived behavior control" is a latent variable with three measurable variables, namely knowledge with a score of 0=not good and 1=good, covid status with a score of 0=covid-19 and 1=non covid-19, and vaccine status with scoring 0=non vaccine and 1=vaccine. "Covid-19 prevention behavior" with scoring 0=not good and 1=good.

Table 1: Descriptive Statistics

Variables	f	%
Age		
Young	8	8
Mature	72	72
Old	20	20
Education		
Basic	27	27
Intermediate	54	54
High	19	19
Sex		
Man	17	17
Women	83	83
Attitude		
Negative	51	51
Positive	49	49
Subjective norms		
Not good	16	16
Good	84	84
Social supports		
Not good	58	58
Good	42	42
Knowledge		
Not good	9	9
Good	91	91
Covid status		
Covid-19	14	14
Non covid-19	86	86
Vaccine status		
Non vaccine	15	15
vaccine	85	85
Covid-19 prevention behavior		
Not good	32	32
Good	68	68

3. RESULTS

3.1. Descriptive Analysis

The majority of parents are mature, 72 respondents (72%). The majority of parents' education had intermediate education, with 54 respondents (54%). Most parents of children with disabilities are women, 83 (83%). Some parents have a negative attitude towards Covid-19, as many as 51 respondents (51%). Most parents had good subjective norms, 84 respondents (84%). Some parents do not provide good social support, as many as 58 respondents (58%). Most parents have good knowledge about Covid-19, 91 people (91%). The majority of parents do not have a history of Covid-19, 86 respondents (86%). 85 respondents (85%) have received the vaccine, and the majority of parents have good Covid-19 prevention behavior, 68 respondents (68%).

3.2. Measurement Model Assessment

The following metrics were used to evaluate the outer model in this study: common method variance (CMV) severity, convergent validity and discriminant validity of each construct, and internal consistency and reliability of each item. The values of average variance extracted (AVE), composite reliability, and Cronbach's alpha are provided in Table **2**. recommended that composite reliability and Cronbach's alpha be used to evaluate the constructions' reliability. Measurements of two theoretically related constructs are related to each other to the extent that the construct has convergent validity. As can be seen in Table **2**, the AVE values fall

Table 2: Reliability and Validity Results

Constructs	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE
Characteristics	Education	1.000	1.000	1.000	1.000
Attitude	Attitude	1.000	1.000	1.000	1.000
Subjective norms	Social supports	0.915	0.410	0.530	0.760
	Subjective norms	0.629	1.000	1.000	1.000
Intention	Intention	1.000	1.000	1.000	1.000
Covid-19 prevention behavior	Behavior	1.000	1.000	1.000	1.000

between 0.62 and 1.00, exceeding the suggested threshold value of 0.5. All constructions have factor loading values greater than 0.7, which suggests that they are appropriate. Based on the specified criteria, the results mentioned above validate the model's convergent validity and dependability.

3.3. Structural Model Assessment

The inner model was evaluated by utilizing Smart-PLS software to blindfold 500 resamples and perform a bootstrapping technique. The standard beta (β), t-value, p-value, R2 (coefficient of determination), and Q-square (Q2) values were acquired.

Based on Table **3**, attitude influences intention with a p-value of 0.000. Characteristics influence parents' attitudes towards preventing COVID-19 with a p-value of 0.030. Characteristics influence subjective norms with a p-value of 0.030, and subjective norms influence COVID-19 prevention behavior with a p-value of 0.000.

Figure **1** shows that characteristics and attitudes have a 42.2% influence on parents' intentions to prevent COVID-19 and characteristics and subjective norms have a 16.1% influence on COVID-19 prevention behavior.

4. DISCUSSION

Education level also affects how preventive habits are used. Higher educated parents are more likely to adopt preventative measures against COVID-19, like frequent hand washing, mask use, and social isolation. This is especially important for children with intellectual disability, who might need more protection because of underlying medical issues [26]. Parental experiences and hardships during the epidemic have an impact on their attitudes toward vaccination and preventive measures. Accessing care and resources was reported to be extremely difficult for caregivers of children with impairments, which may have an impact on their attitudes toward preventative health care. These

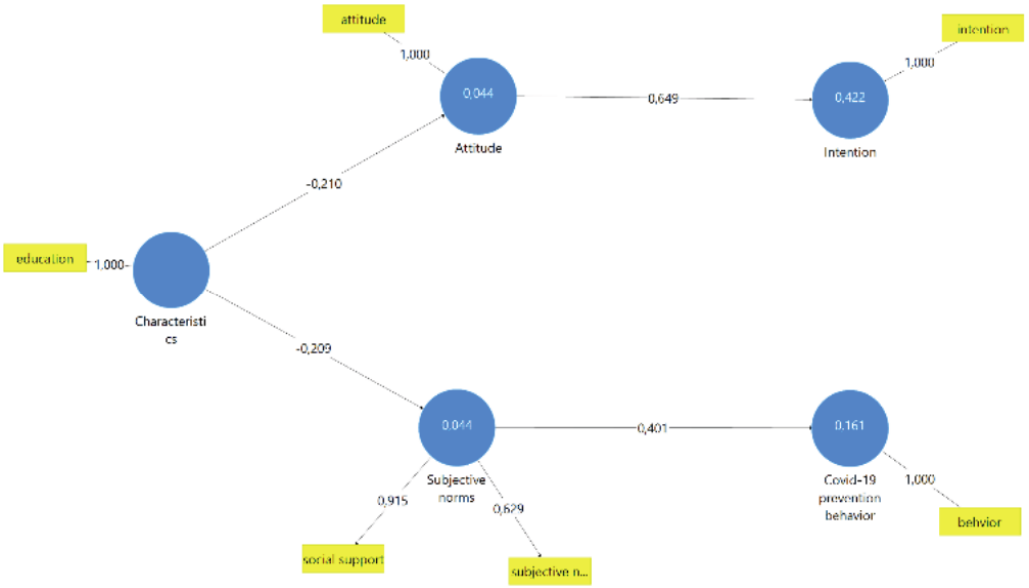

Figure 1: Significance of inner model and results of path coefficient.

Table 3: Path Coefficients

Relationship	Original sample	Standard deviation	T statistics	P-values	Decision
Attitude -> Intention	0.650	0.080	8.630	0.000**	Supported
Characteristics -> Attitude	-0.210	0.090	2.220	0.030*	Supported
Characteristics ->Subjective norms	-0.210	0.100	2.120	0.030*	Supported
Subjective norms -> Covid-19 prevention behavior	0.400	0.080	4.940	0.000**	Supported

** p < 0.001; * p < 0.05

attitudes are also shaped by parents' perceptions of the risk posed by COVID-19 and their need to protect their children immediately [27,28].

In particular, during the COVID-19 pandemic, social support is essential to the well-being of caregivers for children withintellectual disability. Frequently, caregivers depend on unofficial support networks, such as friends, family, and local resources, to cope with the distinct obstacles they encounter. Research has indicated that parents who experience more social support have lower levels of stress and anxiety, which can improve their capacity to put preventive measures in place for their kids.The information that is available to parents and the social support they get also influence their perspectives. People who have access to trustworthy information about COVID-19 initiatives and who perceive their communities as supporting them are more likely to view these interventions favorably. On the other hand, false information or a lack of support might cause people to doubt the efficacy of vaccinations and other health interventions [29,30].

The perception of societal pressure to participate in specific behaviors or subjective norms has a major impact on caregivers' intentions to use COVID-19 preventive measures. Caregivers are more inclined to emphasize health measures if they believe that their peers and community members do the same. This is especially important for kids with disabilities since parents may feel more pressure to shield their weaker kids [26].

Integrating COVID-19 prevention strategies into public health approaches for children with intellectual disability can serve as a model for addressing other health challenges faced by this population. This approach can be used to provide interventions for a variety of health issues in children, especially children with intellectual disability. By focusing on education, support, and community engagement, public health programs can create a comprehensive framework that addresses the unique needs of children with intellectual disability, thereby improving overall health outcomes.

5. CONCLUSION

Parental education can influence parents' attitudes toward preventing COVID-19 in children with disabilities. Parents' attitudes can ~~also~~ influence parents' intentions in preventing the occurrence of COVID-19 in children with intellectual disabilities. Parental education can ~~also~~ influence the social views and norms that exist in the family. Social norms in the family can influence the prevention of COVID-19 in children with intellectual ~~disabilities~~ because they need help from those closest to them to maintain their health.

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ETHICALAPPROVAL

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CONFLICTSOFINTEREST

No Conflict of Interest

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