

Original Research

The Relationship between Anxiety and The Behaviour of Parents in Bringing Their Children to be Immunized During the COVID-19 Pandemic



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Article Info	Abstract
Article history: Received: 16 August 2023 Accepted: 29 January 2024	<p><i>Introduction:</i> The COVID-19 pandemic causes fear and concern among parents about contracting COVID-19 if they come to the Posyandu (Integrated Healthcare Centre) or health care facilities for immunization. The purpose of this study was to determine the relationship between anxiety and the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar.</p> <p><i>Methods:</i> This study was a descriptive correlational study with a cross-sectional approach. The sampling technique used was non-probability sampling with a purposive sampling technique. The sample used was 71 parents who have babies and toddlers between the ages of 0-24 months. The data were collected in the work area of Community Health Centre III, South Denpasar for one month, from March to April 2022. The research instruments used were the COVID-19 Pandemic Anxiety Questionnaire and the Immunization Behaviour Questionnaire During the COVID-19 Pandemic.</p> <p><i>Results:</i> Spearman's rank correlation test result showed that there was a significant relationship between anxiety and the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar (p value = 0.000; r = -0.858).</p> <p><i>Conclusion:</i> Health workers are expected to be able to provide information to parents who have babies and toddlers about the importance of getting their children immunized during the COVID-19 pandemic.</p>
Keywords: immunization, immunization behaviour, anxiety, COVID-19 pandemic	

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INTRODUCTION

Changes in the situation during the COVID-19 pandemic caused immunization services in health care facilities to be disrupted [1]. Disruption of the implementation of immunization in health care facilities during the COVID-19 pandemic led to a decrease in immunization coverage [2].

During the COVID-19 pandemic, both basic and advanced immunization coverage experienced a significant decline. The coverage of basic immunization on a national scale has decreased by 17.0% [3]. In addition, further immunization also decreased by 12.9% [4].

One of the provinces in Indonesia that has experienced a decline in the coverage of basic and advanced immunizations is the Province of Bali. Based on data from the Bali Provincial Health Office, the coverage of basic immunization in Bali Province in 2020 decreased by 3.8% from the previous year. The lowest basic immunization achievement was at the Community Health Centre III, South Denpasar. The decline in basic immunization coverage at the Community Health Centre reached 77.7% (Dinkes Bali, 2019, 2020).

The decline in immunization coverage during the COVID-19 pandemic was influenced by several factors. The factor that has the most potential to cause a decrease in child immunization coverage in Indonesia during the COVID-19 pandemic is the anxiety of parents in bringing their children immunized to Posyandu or health care facilities [7]. The anxiety felt by parents is caused by worry of contracting COVID-19.

Several existing research results show that there is a relationship between feelings of anxiety and maternal compliance in giving immunizations to children. Individuals who experience anxiety tend to be five times more at risk for less compliant behaviour in immunizing [8]. However, research by Sari and Utami (2020) states that individuals with mild anxiety levels tend to behave obediently towards Posyandu visits. This statement is reinforced by the research of Aritonang et al. (2020) which states that high anxiety affects the low visits of mothers who have toddlers to Posyandu.

The results of a preliminary study at Community Health Centre III, South Denpasar revealed that four of the 15 parents who filled out the questionnaire did not experience anxiety during the COVID-19 pandemic. Meanwhile, six parents experienced mild anxiety and five other parents experienced moderate anxiety. A total of 10 parents continued to immunize their children during the COVID-19 pandemic and five other parents chose not to immunize their children during the COVID-19 pandemic. In addition, the data obtained showed that five out of 15 parents who filled out the questionnaire experienced anxiety and chose not to immunize their children during the COVID-19 pandemic.

The purpose of this study was to determine the relationship between anxiety and the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar.

METHODS

Study Design and Variable

This study used quantitative methods with a descriptive correlation analysis approach which aimed to describe and determine the relationship between the study variables. This study consisted of two variables, namely: anxiety as the independent variable, and the behaviour of parents in bringing their children to be immunized as the dependent variable.

Setting

This research was conducted in the working area of Community Health Centre III, South Denpasar for one month from March-April 2022.

Participants of the Study

The sampling technique used was non-probability sampling with a purposive sampling technique. The sample size in this study was 71 parents who had infants and toddlers aged 0-24 months in the work area of Community Health Centre III, South Denpasar.

Instruments

The research instrument used to measure parental anxiety during the COVID-19 pandemic was the COVID-19 Anxiety Questionnaire which was adapted from Artanty Mellu in 2020 [11]. This questionnaire consists of 23 question items that include signs and symptoms of anxiety, namely somatic symptoms and psychological

symptoms. The results of the validity test show that the t-count value on the COVID-19 Anxiety Questionnaire ranges from 5.459 to 16.559. The results of the reliability test showed a Cronbach's alpha value of 0.801. The research instrument used to measure the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic was the Immunization Behaviour Questionnaire during the COVID-19 pandemic, which was modified from Nurul Huda in 2009 (Huda, 2009). This questionnaire consists of 33 question items covering behavioural domains, namely knowledge, attitudes, and actions. The results of the validity test showed that the calculated r value ranged from -0.045 to 0.616. The results of the reliability test showed a Cronbach's alpha value of 0.758.

Data Collection and Analysis

Data collection was carried out online through Google Forms and distributed via WhatsApp Group. The data that has been collected is then analysed using a computer program. The statistical test used in this study is the Spearman's Rank Correlation Test.

Research Ethics

This research has received a certificate of ethical conduct from the Research Ethics Commission of Unud Medical Faculty/Sanglah Hospital Number: 1108/UN14.2.2.VII.14/LT/2022.

Additionally, prior to the study, each participant was given a questionnaire with a consent statement on the front page, which was obtained voluntarily after reading a

declaration outlining the complete objective of the investigation. The research participants' confidentiality and privacy were also protected.

RESULTS

The results in this study describe the characteristics of research respondents, describe the anxiety and immunization behaviour of research respondents during the COVID-19 pandemic, and analyze the relationship between anxiety and parental behaviour in bringing children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar.

Table 1 shows the characteristic data from 71 parents who have babies and toddlers aged 0-24 months in the working area of Community Health Centre III, South Denpasar. The mean age of the research respondents was 29 years with the youngest being 21 years and the oldest being 49 years. Most of the research respondents were female, as many as 60 people (85.4%), had the latest education level of high school or equivalent, namely 37 people (52.1%), and had a non-working status, namely 42 people (59.2%).

The results of the analysis related to the anxiety of parents who have babies and toddlers aged 0-24 months in the work area of Community Health Centre III, South Denpasar during the COVID-19 pandemic show that the median score of the research respondents' anxiety scores during the COVID-19 pandemic was 30. The research respondent's lowest anxiety score was 23 and the highest score

was 52. Based on this, it is known that the higher the anxiety score of the research respondents, the higher the feelings of anxiety felt during the COVID-19 pandemic. Anxiety levels during the COVID-19 pandemic were categorized according to the following ranges: 1) score 23-46: mild anxiety; 2) score 47-69: moderate anxiety; and 3) score 70-92: severe anxiety.

Table 2 shows that the most common somatic symptom experienced by research respondents during the COVID-19 pandemic was washing their hands too often. As many as 28,2% of research respondents on questionnaire question number 21 stated that they always wash their hands excessively during the COVID-19 pandemic because they feel anxious about contracting COVID-19 if they don't maintain cleanliness. Another 23,9% in question number 22 stated that they routinely showered more than two times because they were afraid of contracting COVID-19. Meanwhile, the most common psychological symptoms experienced by research respondents during the COVID-19 pandemic were fear and worry about meeting new people. As many as 12.7% of research respondents on questionnaire question number 19 stated that they always felt afraid of contracting COVID-19 if they met new people they did not know. Another 11,3% in questions number 16, 17, and 20 stated they were afraid of being infected with COVID-19, afraid of dying from COVID-19, and afraid of large crowds.

Table 3 shows that most of the research respondents had mild anxiety levels during the COVID-19 pandemic, namely in the male sex as many as 10 parents (90.9%) with an

average anxiety score of 22.09, the last education level was high school / 28 parents (75.7%) with an average anxiety score of 32.95, and 31 parents (73.8%) unemployed with an average anxiety score of 32.90.

Table 4 shows that the median immunization behaviour score of the research respondents during the COVID-19 pandemic was 20. The research respondent's lowest immunization behaviour score was 14 and the highest score was 33. Based on this, it is known that the higher the research respondent's immunization behaviour score, the better the behaviour of research respondents regarding immunization. Immunization behaviour during the COVID-19 pandemic is categorized based on the cut-off point value which refers to the median value according to the following range: 1) score 20: good immunization behaviour; 2) score < 20: immunization behaviour is not good. The average score of the highest immunization behaviour of research respondents is in the knowledge domain, which is 9.83. The attitude domain has an average value of 5.66 and the action domain has an average value of 5.10. Based on this, the knowledge domain has a higher average value than the attitude and action domain.

Table 5 shows that most of the respondents in this study had good immunization behaviour during the COVID-19 pandemic, namely in the male sex (90.9%), with an average immunization behaviour score of 21.73, high school graduates (75.7%), with an average immunization behaviour score of 21.05, and 73.8% did not work, with an average immunization behaviour score of 19.90.

The results of the analysis of the relationship between anxiety and the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of the Community Health Centre III, South Denpasar are presented in Table 6.

Table 6 shows that the results of the Spearman's Rank correlation test on the variables of anxiety and immunization behaviour show a p-value of 0.000 ($p < 0.05$), which means that H_0 is rejected. This shows that there is a significant relationship between anxiety and the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar.

Table 1

Characteristics of Parents of Infants and Toddlers Aged 0-24 Months in the Work Area of Community Health Centre III South Denpasar in April 2022 (n=71)

Variable	Median	Min-Max	Variance
Age	29	21-49	31,533
Variable	Frequency (f)	Percentage (%)	
Gender			
Male	11	15,5	
Female	60	85,4	
Total	71	100	
Level of Education			
Finished Elementary School	2	2,8	
Finished Junior High School	5	7,0	
Finished Senior High School	37	52,1	
Diploma	12	16,9	
Bachelor	15	21,1	
Total	71	100	
Employment Status			
Work	29	40,8	
Doesn't Work	42	59,2	
Total	71	100	

Table 2

Overview of the Anxiety Subscale of Parents of Infants and Toddlers Aged 0-24 Months During the COVID-19 Pandemic Period in the Work Area of Community Health Centre III South Denpasar in April 2022 (n=71)

Indicator	Question	Never	Sometimes	Often	Always
		%	%	%	%
Somatic Symptoms	1 Can't sleep well	69,0	28,2	0	2,8
	3 Sluggish	66,2	25,4	5,6	2,8
	4 Shaking	85,9	12,7	0	1,4
	10 Tense	64,8	32,4	0	2,8
	12 Decreased appetite	4,4	5,6	0	0
	13 Can't hold back BAK	97,2	2,8	0	0
	14 Stomach twists	100	0	0	0
	15 Heart beating fast	93	7	0	0
	21 Wash your hands	5,6	29,6	36,6	28,2
	22 Frequent bath	11,3	40,8	23,9	23,9
23 Take vitamins often	19,7	52,1	11,3	16,9	
Psychological Symptoms	2 Easy to get angry	56,3	39,4	2,8	1,4
	5 Have a bad feeling	67,6	28,2	2,8	1,4
	6 Memory decline	97,2	2,8	0	0
	7 Often forget	95,8	4,2	0	0
	8 Difficult concentrate	91,5	8,5	0	0
	9 Blaming others	70,4	22,5	2,8	4,2
	11 Afraid	54,9	38	5,6	1,4
	16 Fear of contagion	18,3	57,7	16,9	7
	17 Fear of infected	28,2	52,1	8,5	11,3
	18 Fear of death	31	43,7	14,1	11,3
19 Afraid meet people	38	40,8	8,5	12,7	
20 Fear of crowd	28,2	45,1	15,5	11,3	

Table 3

Overview of Anxiety Based on the Characteristics of Parents of Infants and Toddlers Aged 0-24 Months During the COVID-19 Pandemic Period in the Working Area of Community Health Centre III South Denpasar in April 2022 (n=71)

Characteristics of Parents	Anxiety		Mean
	Mild (%)	Severe (%)	
Gender			
Male	90,9	9,1	22,09
Female	66,7	33,3	34,88
Level of Education			
Graduated from Elementary School	0	100	48
Graduated Middle School	80	20	31,20
High School Graduate	75,7	24,3	32,95
Diploma	75	25	33,17
Bachelor	60	40	35,53
Job Status			
Working	65,5	34,5	35,17
Doesn't Work	73,8	26,2	32,90

Table 4

Overview of Immunization Behaviour of Parents of Infants and Toddlers Aged 0-24 Months During the COVID-19 Pandemic Period in the Work Area of Community Health Centre III South Denpasar in April 2022 (n=71)

Variable	Median	Min-Max	Variance
Immunization Behaviour	20	14-33	11,959
Indicator			
	Mean		
Knowledge	9,83		
Attitude	5,66		
Action	5,10		

Table 5

Overview of Immunization Behaviour Based on the Characteristics of Parents of Infants and Toddlers Aged 0-24 Months During the COVID-19 Pandemic in the Work Area of Community Health Centre III South Denpasar in April 2022 (n=71)

Characteristics of Parents	Immunization Behaviour		Mean
	Good Immunization Behaviour	Severe Immunization Behaviour is Not Good	
	%	%	
Gender			
Male	90,9	9,1	21,73
Female	66,7	33,3	20,02
Level of Education			
Graduated from Elementary School	0	100	18,50
Graduated Middle School	80	20	19,80
High school graduate	75,7	24,3	21,05
Diploma	75	25	21,42
Bachelor	60	40	19,33
Job Status			
Working	65,5	34,5	19,90
Doesn't Work	73,8	26,2	21,07

Table 6

Results of Analysis of the Relationship between Anxiety and Immunization Behaviour in Research Participants in the Work Area of Community Health Centre III South Denpasar in April 2022 (n=71)

Spearman's Rank Correlation Test				
Variable	Median	Min-Max	p value	r_s
Anxiety	30	23-52	0,000	-0,858
Immunization Behaviour	20	14-33		

DISCUSSION

Anxiety is an unpleasant feeling that is described by excessive fear and worry [12]. Anxiety that occurs during the COVID-19 pandemic usually arises because of various changes. This is because the COVID-19 pandemic is a new condition for individuals so each individual has the potential to experience anxiety [13]. Individuals who feel anxious usually do not understand about COVID-19. In addition, most people are still not fully able to adapt to the COVID-19 pandemic situation [10].

From the results of research on 71 parents who have infants and toddlers aged 0-24 months in the work area of the Community Health Centre III, South Denpasar related to parental anxiety during the COVID-19 pandemic, it is known that most of the respondents in this study experienced mild anxiety during the COVID-19 pandemic. The results of this study are in line with the research of Sidabuke, Parapat, and Aritonang (2022) which revealed that the majority of parents experienced mild anxiety when bringing their children immunized to the Posyandu during the COVID-19 pandemic, namely 43 parents (65%). Modjo and Sudirman (2022) in their research also stated

that the majority of parents who had babies and toddlers experienced mild anxiety during the COVID-19 pandemic, namely 26 parents (35.6%).

Parents who have babies and toddlers tend to experience mild anxiety during the COVID-19 pandemic because the implementation of immunization is currently implementing the principles of disease control prevention and following technical instructions for implementing immunizations during the COVID-19 pandemic, so parents feel it is safer to bring their children immunized to Posyandu or health care facilities [16]. In addition, parents have also been able to adapt and get used to the COVID-19 pandemic situation which is currently getting better [17].

The anxiety that is felt will affect individual behaviour, especially behaviour related to health [18]. One of them is immunization behaviour. Immunization behaviour is an action taken by parents in fulfilling the completeness of immunization in children [19]. Immunization behaviour is also defined as any form of response or reaction in giving immunizations [20]. Good immunization behaviour can be realized through good knowledge, attitudes, and actions regarding immunization [21]. The

results of the study on 71 parents who had infants and toddlers aged 0-24 months in the work area of Community Health Centre III, South Denpasar related to the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic were good.

The COVID-19 pandemic has had a significant influence on the behaviour of parents in bringing their children to immunization. At the beginning of the COVID-19 pandemic, most parents experienced fear and concern about contracting COVID-19 if they came to the Posyandu or health care facilities for immunization [22]. In addition, the existence of incorrect information about immunizations and rumors related to COVID-19 caused parents to feel anxious and hesitant to get their children immunized [23]. Therefore, many parents delayed or did not even give immunizations to their children at the beginning of the COVID-19 pandemic. Over time, parents are now able to adapt to the situation of the COVID-19 pandemic which is getting better [24]. Parents also feel it is safer to have their children immunized at Posyandu or health care facilities [16]. This proves that the anxiety felt by parents during the COVID-19 pandemic can affect the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic.

Based on the results of Spearman's Rank correlation test on the anxiety variable and immunization behaviour, it is known that the p-value is 0.000 ($p < 0.05$), which means H_0 is rejected. This shows that there is a significant relationship between anxiety and the behaviour of parents in bringing their

children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar. The strength value of the correlation coefficient is -0.858, which means that there is a very strong relationship between anxiety and the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic. In addition, the negative correlation direction means that the higher the anxiety score of parents during the COVID-19 pandemic, the lower the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar.

The results of this study are in line with Rosiska's research (2022) which states that there is a significant relationship between anxiety and immunization visits during the COVID-19 pandemic. The study explained that the anxiety felt by parents during the COVID-19 pandemic was due to fear and concern about contracting COVID-19 if they came to Posyandu or health service facilities for immunization. In addition, the existence of incorrect information about immunizations and rumours related to COVID-19 adds to the doubts of parents in bringing their children immunized to Posyandu or health care facilities [26]. Klevina and Utami (2022) in their research also revealed that there was a significant relationship between anxiety due to the COVID-19 pandemic and parental compliance in bringing their children to be immunized during the COVID-19 pandemic. It can be seen that the majority of parents do not comply with immunization visits because they feel insecure when bringing their

children immunized to Posyandu or health care facilities during the COVID-19 pandemic. In addition, the research of Ericha and Ningsih (2021) obtained similar results which stated that there was a relationship between anxiety and compliance with immunization visits during the COVID-19 pandemic. The results of his research revealed that prolonged anxiety during the COVID-19 pandemic could lead to instability in situations and conditions such as fear and worry about bringing children immunized to Posyandu.

Individuals who are experiencing anxiety tend to be five times more at risk for non-compliant behaviour in giving immunizations to children [8]. However, individuals with mild anxiety levels tend to be obedient to giving immunizations to children [9]. This statement is reinforced by the research of Arintonang et al. (2020) which states that high anxiety affects the low visitation of mothers who have toddlers to Posyandu or health service facilities for immunization. This proves that anxiety can affect a person's behaviour, especially health-related behaviour [29].

IMPLICATION

The implication of this research is that it can be used as a reference for health agencies in providing immunization services to increase immunization coverage during the COVID-19 pandemic. In addition, it can be used as material for consideration by health workers to provide information to parents who have babies and toddlers regarding the importance of getting their children immunized during the COVID-19 pandemic so that there is no

decrease in immunization coverage globally and the occurrence of outbreaks or extraordinary disease events can be prevented by immunization (PD3I outbreak).

The implications of this new normal period are that it is hoped that parents, health workers, health facilities, and health organizations will continue to prioritize providing immunization to children. The current COVID-19 situation in Indonesia shows an increasing trend in cases. For this reason, the Ministry of Health stated that there needs to be efforts to prevent transmission carried out simultaneously by all elements of society. One prevention that can be done for children is immunization. This is because children are vulnerable to contracting disease.

LIMITATION

This research has limitations in the implementation process. Research limitations consist of weaknesses and obstacles during the research process. The weakness of this study is that researchers cannot find out the reasons and opinions of research respondents regarding the answers given to the research questionnaire. The obstacle in this study was that researchers could not control research respondents who suddenly left the group before filling out the research questionnaire and after that, they could not be contacted again.

CONCLUSION AND RECOMMENDATION

The conclusion of this study is that there is a significant relationship between anxiety and

the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic in the work area of Community Health Centre III, South Denpasar.

The anxiety felt by parents during the COVID-19 pandemic was due to fear and concern about contracting COVID-19 if they came to Posyandu or health service facilities for immunization. The COVID-19 pandemic is a new condition for individuals so each individual has the potential to experience anxiety. In addition, most people are still not fully able to adapt to the COVID-19 pandemic situation. The anxiety that is felt will affect a person's behaviour, because a person will act if he feels the negative effects of the situation he is experiencing.

Suggestions for further researchers are that they are expected to be able to develop research by discussing further other factors that influence the behaviour of parents in bringing their children to be immunized during the COVID-19 pandemic, such as perception, motivation, access to health care facilities, and family support.

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CONFLICT OF INTEREST

There are no conflict of interest in this article to publishing.

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