

## Relationship between Perceived Severity and Compliance with COVID-19 Preventive Behavior among Pregnant Women

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### ABSTRACT

Several risk groups, one of which is pregnant women are susceptible COVID-19. Pregnancy is known as a susceptible condition to COVID-19 infection because it could cause immunity decrease. Therefore, it is necessary to comply with COVID-19 preventive behavior. This study aims to analyze the relationship between perceived susceptibility, perceived severity, perceived obstacle, perceived benefit and self-efficacy with COVID-19 preventive behavior among pregnant women in the work area of Sempaja Community Health Center. This was an observational study with cross sectional design. Samples were selected using purposive sampling technique based on inclusion criteria of pregnant women who lived and registered in the determined work area and had gestational age of more than 12 weeks. There were 194 pregnant women involved as the study samples. Data were analyzed using the Spearman Rank Test. The bivariate analysis revealed that there was relationship between self-efficacy (p value of 0.000), perceived barrier (p value of 0.025), perceived benefit (p value of 0.000), and perceived severity (p value of 0.000) with compliance with COVID-19 preventive behavior. However, there was no relationship between perceived susceptibility and compliance with COVID-19 preventive behavior (p value of 0.287). It can be concluded that the better perception of pregnant women, the better compliance with COVID-19 preventive behavior. It is recommended to increase health promotion in order to keep compliance with COVID-19 preventive behavior.

*Pandemi Corona virus disease (COVID-19) rentan menyerang beberapa kelompok berisiko salah satunya ibu hamil. Kehamilan dapat menurunkan imunitas tubuh, sehingga ibu hamil mudah terpapar COVID-19. Kepatuhan menjalankan protokol kesehatan penting bagi ibu hamil. Tujuan studi ini untuk mengetahui hubungan persepsi kerentanan, persepsi keparahan, persepsi hambatan, persepsi manfaat, dan efikasi diri pada ibu hamil terhadap tindakan kepatuhan pencegahan COVID-19. Desain penelitian yaitu cross sectional. Sampel sejumlah 194 ibu hamil dipilih secara purposif dengan kriteria inklusi tinggal dan terdaftar di wilayah Puskesmas Sempaja dengan usia kehamilan >12 minggu. Data dianalisa menggunakan uji Rank Spearman. Analisa bivariat memperlihatkan bahwa self-efficacy (0.000), persepsi hambatan (p value 0,025), persepsi manfaat (p value 0,000), persepsi keparahan (p value 0,000), berhubungan terhadap tindakan kepatuhan pencegahan COVID-19, sedangkan persepsi kerentanan tidak berhubungan (p value 0,287). Disimpulkan bahwa semakin baik persepsi kesehatan ibu hamil, maka semakin baik pula tindakan kepatuhan pencegahan COVID-19. Disarankan untuk melaksanakan kegiatan sosialisasi mengenai COVID-19 pada ibu hamil secara berkelanjutan sehingga kepatuhan pencegahan penularan dapat terjaga.*

## **Introduction**

The COVID-19 pandemic is still happening, the total number of COVID-19 cases reported globally based on WHO and PHEOC data from the Ministry of Health as of December 5, 2021 is 265.684,258 cases with 5,263,719 deaths in 224 countries and 149 countries that have experienced community transmission. The current trend of COVID-19 cases in the world has shown a downward trend, but the total cases have reached more than 150,000,000 people (Ministry of Health, 2021). At the national level, the distribution of the incidence of this disease almost reaches all regions in Indonesia, including the province of East Kalimantan. Pregnant women are one of the groups who are at risk of being infected.

Pregnancy could induce a decrease in partial immunity and physiological changes, these two factors made pregnant women more susceptible to viral infections (Pradana, Casman, & Aini, 2020). Data showed that 536 pregnant women were tested positive for infection and even 3% of them caused death. Data from the Indonesian Obstetrics and Gynecology Association (POGI) are calculated from the first quarter of 2020 to the second quarter of 2021. Among infected pregnant women, 72% were declared exposed at 37 weeks of gestation and 4.5% required special care. This problem also occurred in the city of Samarinda. The Samarinda City COVID-19 Task Force recorded as many as 28 pregnant women exposed to COVID-19 but this data is in the verification process because not all data on pregnant women have been reported. Both sources of data indicate that quite a lot of pregnant women are infected. This fact encourages the need to increase vigilance and preventive effort in pregnant women.

COVID-19 infection during pregnancy has a greater risk of experiencing severe health impacts that can lead to death compared to the general population (Setyawan, Purnomo, Firdaus, & Nugraheni, 2020). The increased risk of miscarriage, stillbirth, premature birth, tachycardia in the fetus and fetal distress is the impact of COVID-19 infection in pregnant women (Karimi-zarchi et al., 2020). In addition, the presence of congenital diseases in pregnant women such as diabetes mellitus, hypertension and heart disease can increase the risk of experiencing severe symptoms with more severe symptoms (Kostania et al., 2021).

Although the pandemic is still ongoing, COVID-19 prevention behavior has not been optimally adhered to. The research of Hardianti, Erlinawati, & Syafriani (2021) shows that some pregnant women have not complied with COVID-19 prevention behaviors, such as when they do activities outside the home, they do not wear masks, rarely wash their hands with hand sanitizer or soap and do not know the impact of COVID-19 on pregnancy. Most pregnant women (80%) do not know about health protocols to prevent COVID-19. Although all mothers are concern about their pregnancy in the pandemic era, this anxiety does not make them comply with health protocols in their daily activities. When doing activities outside the home, some pregnant women do not take precautions such as leaving the house without a mask, not keeping their distance and participating in crowds (Aritonang, Nugraeny and Siregar, 2020).

According to the Health Belief theory, the individual behavior model is formed by four perceptions, namely Perceived susceptibility (perceived vulnerability), Perceived severity (perceived severity of a health problem), Perceived benefits (benefits of a preventive behavior), Perceived barriers

(the existence of barriers to change), Cues to action (source of information driving action), and Self-efficacy (self-confidence to act (Priyoto, 2014). These various perceptions and self-efficacy need to be studied to explain the behavior of pregnant women.

Based on the explanations that have been described, this study aims to determine the relationship between perceptions of pregnant women including perceptions of vulnerability, perceived severity, perceived benefits and barriers, as well as self-efficacy against COVID-19 preventive measures.

## Methods

This observational study applied cross sectional design which aims to identify the relationship between perceived susceptibility, perceived severity, perceived obstacle, perceived benefit and self-efficacy with COVID-19 preventive behavior. The independent variables consisted of perceived benefits and obstacles, perceived vulnerability, perceived severity, as well as self-efficacy with variables. The study site was the work area of Sempaja CHC, Samarinda City, which had the top three highest cases of COVID-19. Based on data, there were 75 pregnant women with high-risk pregnancies. The population in this study involved 376 pregnant women, sampling size was calculated using the Slovin method so that the study samples involved 194 pregnant women. The sampling method applied here was purposive sampling with the inclusion criteria of pregnant women whose place of residence was addressed and recorded in the pregnant woman's register book, gestational age of >12 weeks (second trimester) and had a Maternal and Child Health monitoring book. The study instrument used a questionnaire that had been tested for validity and reliability. The data were not normally distributed, then the data were analyzed using the Spearman Rank test.

## Results

Characteristics of the respondents showed that the majority of respondents had an age range of 21 to 25 years (36.6%). The complete data are presented in table 1 below.

**Table. 1** Socio-Demographic Characteristics of Respondents

Characteristics	Frequency	Percentage
	N	%
<b>Maternal Age</b>		
<20	16	8,2
21-25	71	36,6
26-30	54	27,8
31-35	38	19,6
36-40	12	6,2
>40	3	1,5
<b>Maternal Educational Status</b>		
Not graduated	3	1,5
Elementary	6	3,1
Junior High School	23	11,9
Senior High School	108	55,7
Higher Education	54	27,8
<b>Employment status</b>		
Employee	13	6,7
Entrepreneur	12	6,2
Civil servants	4	2,1
Housewife	130	67
Others	35	18

<b>Gestational age</b>		
Second Trimester (13-24 weeks)	76	39,2
Third Trimester (25-40 weeks)	118	60,8
<b>History of Comorbid before pregnancy</b>		
No comorbid	173	89,2
Anemia	8	4,1
Hypertension	13	6,7
<b>History of comorbid in pregnancy</b>		
No comorbid	189	97,4
Anemia	2	1
Hypertension	3	1,5

Table 1 showed that most of the respondents graduated from senior high school as many as 108 pregnant women (55.7%). Furthermore, most of respondents were housewives (67%). Most of respondents were in the third trimester of pregnancy (60.8%). 13 of the 194 pregnant respondents had hypertension (6.7%) and 8 (4.1%) had anemia before pregnancy. Meanwhile, there were 1.5% and 1% of respondents who had hypertension and anemia as comorbid, respectively.

**Table 2.** Relationship between Perceived Vulnerability and Severity with Compliance with COVID-19 Preventive Behavior

Variable		Compliance with COVID-19 Preventive Behavior				Total		<i>r</i>	<i>p</i>
		Poor		Good		N	%		
		n	%	n	%				
Perceived vulnerability	Poor	1	100	0	0	1	100	0.077	0.287
	Fair	54	45.8	64	54.2	118	100		
	good	24	32	51	68	75	100		
Perception of severity	Poor	13	92.9	1	7.1	14	100	0.276	0.000
	Fair	27	50.9	26	49.1	53	100		
	Good	39	30.7	88	69.3	127	100		
Total		79	40.7	115	59.3	194	100		

As shown in table 2, the statistical tests obtained a p-value of 0.287 with a coefficient (*r*) of 0.077. It was revealed that there was no significant relationship between perceived vulnerability and COVID-19 prevention compliance among pregnant women. Analysis of the relationship between perceived severity and compliance with COVID-19 preventive behavior showed a p-value of 0.000 with a coefficient (*r*) of 0.276. It can be concluded that there was a relationship between perceived severity and compliance with COVID-19 preventive behavior among pregnant women and it was classified as a positive relationship.

**Table 3.** Relationship between Perceived Obstacle, Benefit, and Self-Efficacy with Compliance with COVID-19 Preventive Behavior

Variable		Compliance with COVID-19 Preventive Behavior				Total		<i>r</i>	<i>p</i>
		Poor		Good		N	%		
		n	%	n	%				
Perceived obstacles	poor	0	0	4	100	4	100	0.161	0.025
	fair	74	41.6	104	58.4	178	100		
	good	5	41.7	7	58.3	12	100		
Perceived benefits	poor	29	100	0	0	29	100	0.706	0.000
	fair	48	90.6	5	9.4	53	100		
	good	2	1.8	110	98.2	112	100		
Self-efficacy	fair	23	65.7	12	34.3	35	100	0.308	0.000
	good	56	35.2	103	64.8	159	100		
Total		79	40.7	115	59.3	194	100		

The statistic analysis between perceived obstacle and compliance of COVID-19 preventive behavior showed a p-value of 0.025 with a coefficient (r) of -0.161. It meant that there was a significant relationship between perceived obstacle and compliance with COVID-19 preventive behavior among pregnant women. The value of the r coefficient showed a negative sign, meaning that the more pregnant women perceive more obstacles to carrying out preventive behavior, the lower the compliance.

## **Discussion**

This study revealed that there was no significant relationship between perceived vulnerability and COVID-19 prevention compliance among pregnant women. Such finding could be explained based on a study conducted by Basseti (2020) which stated that all pregnant women regardless of age and parity felt the same susceptibility to being exposed to COVID-19 compared to pregnant women in the pre-pandemic period. Although not statistically significant, if we compare based on the proportion of appropriate compliance with COVID-19 preventive behavior, the percentage of respondents who had a good perceived vulnerability was higher (68%) than respondents who had a fair perceived vulnerability (54.2%).

There was a relationship between perceived severity and compliance with COVID-19 preventive behavior among pregnant women and it was classified as a positive relationship. This meant that the more pregnant women perceived COVID-19 as a severe disease, the more compliance they were to perform COVID-19 preventive behavior. It was found that the greater the perceived risk of a disease, the more likely individual to engage in preventive behaviors (Priyoto, 2014). The study finding is similar with a study conducted by I. M. Harahap et al., (2021) which stated that the perceived severity had a strong relationship with COVID-19 prevention behavior because people perceived COVID-19 as a disease that could lead to death.

This significant relationship between perceived obstacle and compliance with COVID-19 preventive behavior among pregnant women was also found in a study conducted by Febriani (2019) which revealed that there was a positive relationship between perceived obstacle and treatment seeking behavior. It is in line with a study conducted by Fadilah, Pariyana, Apriliya, & Syakurah (2020) which presented that perceived obstacle was related to people's compliance with adaptation to new habits. High level of obstacles will reduce behavior change. On the contrary, low level of obstacle will make it easier for individuals to take preventive action (Hall, 2013).

Likewise, the Rank Spearman's analysis showed that there was a relationship between perceived benefit (p-value = 0.00) and self-efficacy (p-value = 0.00) with compliance of COVID-19 prevention behaviour. The coefficient value (r) showed a positive value, meaning that the better the perceived benefit and self-efficacy, the higher the compliance with COVID-19 prevention behavior. Pregnant women with a high perception of the benefits of disease prevention will adhere to prevention behavior. The compliance is influenced by the individual's acceptance of the perceived benefits if individuals prevent before the severity occurs (Afro, Isfiya, & Rochmah, 2020)

Self-efficacy was related to compliance with COVID-19 preventive behavior. Such finding is linear with a previous study which found that self-efficacy was the main factor that encourage pregnant women compliance with the preventive behavior (Mo et al., 2021). It is also supported by a study conducted by Mehanna, E, & L.P (2021) which revealed that women's self-efficacy was strongly correlated with compliance with COVID-19 preventive behavior. When individuals are more confident in their ability to take preventive action, the more likely they would carry out the behavior. A study conducted by Baringbing (2020) concluded that there was a positive correlation between self-efficacy and the behavior of the COVID-19 health protocol carried out by the community. This indicated that the higher the individual's self-efficacy, the more likely she is to take preventive effort against COVID-19.

### Conclusions

The majority of respondents had good compliance with COVID-19 preventive behavior. There were significant relationship between perceived severity, perceived barriers, perceived benefits and self-efficacy on compliance with COVID-19 preventive behavior among pregnant women. Therefore, it is recommended that health services continuously organize education regarding COVID-19 preventive measures to maintain optimal perceived benefit and self-efficacy among pregnant women.

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