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Determinants of COVID-19 Vaccination Behavior in Pregnant Women in the Talang Health Center, Tegal Regency

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Abstract

COVID-19 is a Global Pandemic. One of the efforts to overcome COVID-19 is vaccination. The lowest group of vaccine recipients in Tegal Regency was pregnant women (0.02%). COVID-19 was the biggest cause of maternal mortality in 2021 in Tegal Regency (59.1%). The lowest vaccination coverage wat at Talang Community Health Center (8.3%). The strategy for bringing vaccination sites closer has been carried out through the SERPUNG program, supported by sufficient availability of vaccine doses. However, these efforts have not increased coverage, so there is a possibility that behavioral determinants are the cause of the low vaccination coverage. This study aims to determine the determinants of COVID-19 vaccination behavior in pregnant women at Talang Health Center area. This type of research is an analytic survey using a cross sectional approach. The research sample was 100 pregnant women. The sampling technique is Proportionate Stratified Random Sampling. Bivariate analysis (Somers'd and Lambda test) showed that the variables that had no relationship were knowledge (p=0,176), education level (p=0,532), occupation (p=0,794), parity (p=0,826), ANC visit (p=0,393), information access (p=0,525), supported from community leaders (p=0,574), supported from health workers (p=0.192), while the related variable is family support (p= 0.003). Multivariate analysis was performed on the variables resulting from the bivariate analysis with p<0.25. The results show that family support is related to COVID-19 vaccination behavior, with an exp value (2.654) = 14.2, it means that respondents have a tendency to behave well by 14.2 times compared to respondents who do not have family support.

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INTRODUCTION

The World Health Organization has designated COVID-19 as a global pandemic. The Government of Indonesia has issued Presidential Decree No. 11 of 2020 concerning public health emergencies (COVID-19). COVID-19 cases in Indonesia are ranked 13th in the world with 4,215,104 positive cases and 141,939 deaths. In Central Java, the cumulative cases of positive confirmation were 624,507 people with 40,579 deaths on September 30, 2021 (Statistik Kasus COVID-19 Jawa Tengah, 2021). The efforts to overcome COVID-19 need to be carried out massively, considering that the pandemic has a major impact on social and economic life (Kemenkes, 2021a).

The government has decided a COVID-19 vaccination policy as an effective intervention to break the chain of disease transmission (Kemenkes, 2021a). Vaccines are biological products containing antigens, those are living or dead microorganisms that are attenuated and when it has been given to a person will cause active specific immunity against certain diseases (Kemenkes, 2021b). The purpose of administering the COVID-19 vaccine is to reduce the transition/transmission period of COVID-19, reduce morbidity and mortality, achieving herd immunity and protecting the community from COVID-19 in order to remain socially and economically productive (Kemenkes, 2021b).

The national vaccination target is 208,265,720 people. National vaccination coverage (based on data 30 September 2021) shows the first dose of 91,079,001 doses (43.73%) While the vaccination coverage in Central Java for the first dose is 12,382,959 doses (43.10%). Tegal Regency was ranked 23 out of 35 regencies/cities for the coverage of the first dose of 378,754 doses of vaccination (30,87%). The lowest group of vaccine recipients in Tegal Regency were pregnant women, with the coverage of the first dose of vaccination 126 doses(0.02%)
(vaksin.kemkes.go.id/#/detail_data,2021,coron ajatengprov.go.id/vaksin,2021,.KPC-PEN,2021).

The availability of vaccine doses is very adequate, including for the types of sinovac (14,632 doses), astrazeneca (676 doses), moderna (4,312 doses) and sinopharm (110 doses) (KPC-PEN, 2021). However, vaccination coverage in Tegal Regency has not yet reached the 50% target. One of the efforts to increase vaccination coverage is through the SERPUNG (Serbu and Kepung) program by bringing vaccination sites closer to the Village Hall. Based on the data above, the lowest group of vaccine recipients in Tegal Regency were pregnant women and the lowest vaccination coverage for pregnant women wasat at Talang Health Center area (8.3%) (Dinkes Kab.Tegal, 2021). Pregnant women are very at risk of contracting COVID-19 and it can result in death. This is indicated by the increase in the MMR in Tegal Regency (Dinkes Kab.Tegal, 2021).

The MMR in Tegal Regency from 2019 before the pandemic was 44.5 per 100,000 live births (12 cases) to 104 per 100,000 live births (28 cases) in 2020 and up to 30 September 2021 there were 22 cases of maternal death. One of the causes of maternal death in 2020 was COVID-19 by 17.9% (5 cases of COVID-19 from 28 cases of death) and it increased in 2021 by 59.1% (13 cases of COVID-19 from 22 cases of death). It shows that most of the causes of maternal death was COVID-19 (Dinkes Kab.Tegal, 2021).

Pregnant women are a vulnerable group and are susceptible to health problems such as infections, due to immune response mechanisms and changes in body physiology (Nurdianto, 2020). The earlier the case of infection, the bigger the impact on the occurrence of miscarriage (Briet et al, 2020). Pregnant women exposed to COVID-19 are at risk for fetal distress, miscarriage, premature delivery, impaired fetal growth and premature rupture of membranes (Qiancheng et al, 2020). China's National Health Commission stated that from December 8, 2019 to March 20, 2020, in 50 Wuhan hospitals, there were a total of 118

pregnant women exposed to COVID-19 (Chen et al, 2020).

The willingness of the community to receive vaccination is closely related to the determinants of behavior formation. There are three factors, such as predisposing, enabling and reinforcing factors. No single behavior is caused by only one factor. Any plan that can shape behavior must consider these three factors (Green, 1991). However, this study was limited to factors such as knowledge, level of education, occupation, parity, ANC visit, information access, family support, supported from community leaders and supported from health workers related to COVID-19 vaccination behavior in pregnant women.

The purpose of this study is to determine the determinants of COVID-19 vaccination behavior, the factors related to COVID-19 vaccination behavior in pregnant women at Talang Health Center area, Tegal Regency.

METHOD

This research is an analytical survey research using a cross sectional approach. The total population is 969 pregnant women who live around Talang Health Center, Tegal Regency. The number of sample is 100 pregnant women using the minimum sample size formula. Sampling using the Proportionate Stratified Random Sampling technique. The inclusion criteria is pregnant women who live around Talang Health Center area. Meanwhile, the exclusion criteria were pregnant women with confirmed COVID-19, pregnant women whose vaccinations were delayed or not given based on the results of the COVID-19 vaccination screening for pregnant women.

The independent variables in this study are knowledge, education level, occupation, parity, ANC visit, information access, family support, community leaders support and health workers support. The dependent variable is the behavior of COVID-19 vaccination in pregnant women.

The research instrument used a closed questionnaire. Validity and reliability tests were conducted on 30 pregnant women on Pagedangan Village. Data analysis techniques consisted of univariate analysis (frequency distribution), bivariate analysis (Somers'd and Lambda test) and multivariate analysis (ordinal logistic regression test).

RESULTS AND DISCUSSION

The results of the univariate analysis in table 1 shows that most of the respondents have good knowledge of 86 (86%), the education level of most respondents with basic education is 48 (48%), most of the respondents' occupations are not working as many as 71 (71%), the number of living children who most of the respondents were primiparous (having 1 child) 41 (41%), ANC visits most of the respondents said they had, according to the standard 96 (96%), access to information was mostly a little bit 54 (54%), the family support of the respondents was mostly The majority played a role in 58 (58%), community leaders support most of the respondents played a role in the amount of 79 (79%), health workers support is the most respondents played a role in the amount of 87 (87%) and the COVID-19 vaccination behavior of the majority of respondents behaved well in the amount of 72 (72%).

Tabel 1. Univariate analysis results

Knowledge	Amount	%
Not enough	1	1
Enough	13	13
Good	86	86
Total	100	100

Level of Education	Amount	%
Not Joining school	0	0
Basic Education	48	48
Middle Education	46	46
Higher Education	6	6
Total	100	100

Work	Amount	%
Doesn't Work	71	71
Work	29	29
Total	100	100

Parity	Amount	%
Nullipara	28	28
Primipara	41	41
Multipara	30	30
Grandemultipara	1	1
Total	100	100

Visit ANC	Amount	%
Never	0	0
Never, not up to standard	4	4
Ever, up to standard	96	96
Total	100	100

Access Information	Amount	%
A little	54	54
Enough	43	43
Many	3	3
Total	100	100

Family support	Amount	%
No role	8	8
Have a role	34	34
Quite a Role	58	58
Total	100	100

Community Leaders Support	Amount	%
No role	2	2
Have a role	19	19
Quite a Role	79	79
Total	100	100

Healthcare Support	Amount	%
No role	1	1
Have a role	12	12
Quite a Role	87	87
Total	100	100

COVID-19 Vaccination Behavior	Amount	%
Bad	10	10
Enough	18	18
Good	72	72
Total	100	100

The results of the bivariate analysis in table 2 shows that the variables that have a relationship with COVID-19 vaccination behavior in pregnant women are family support (p=0,003), while the variables that have no relationship are: knowledge (p=0,176), education level (p=0,532), occupation (p=0,794), parity (p=0,826), ANC visits (p=0,393), access to information (p=0,525), community leaders support (p=0,574) and health workers support (p=0,192).

Tabel 2. Bivariate Analysis Results

Variabel	Vaccination Behavior						Total		Score -*p*
	Bad		Pretty Good		Good				
	F	%	F	%	F	%	F	%	
Knowledge									
Not enough	0	0	0	0	1	100	1	100	
Enough	1	7.7	1	7.7	11	84.6	13	100	0.176
Good	9	10.5	17	19.8	60	69.8	86	100	
Level of education									
Not joining school	3	6.3	9	18.7	36	75	48	100	
Basic Education	6	13	9	19.6	31	67.4	46	100	0.532
Middle Education	1	16.7	0	0	5	83.3	6	100	
Work									
Doesn't Work	8	11.3	13	18.3	50	70.4	71	100	0.794
Work	2	6.9	5	17.2	22	75.9	29	100	
Parity									
Nullipara	5	17.8	4	14.3	19	67.9	28	100	
Primipara	3	7.3	6	14.7	32	78	41	100	0.826
Multipara	2	6.6	8	26.7	20	66.7	30	100	
Grandemultipara	0	0	0	0	1	100	1	100	
Visit ANC									
Never	0	0	0	0	0	0	0	0	
Never. not up to standard	1	25	1	25	2	50	4	100	0.393
Ever. up to standard	9	9.4	17	17.7	70	72.9	96	100	
Access Information									
A little	8	14.8	8	14.8	38	70.4	54	100	
Enough	2	4.7	9	20.9	32	74.4	43	100	0.525
Many	0	0.0	1	33.3	2	66.7	3	100	
Family support									
No role	3	37.5	3	37.5	2	25	8	100	
Enough Role	3	8.8	9	26.5	22	64.7	34	100	0.003
Enough Role	4	6.9	6	10.3	48	82.8	58	100	
Support Community Leaders									
No role	1	50	0	0	1	50	2	100	
Enough Role	1	5.3	5	26.3	13	68.4	19	100	0.574
Enough Role	8	10.1	13	16.5	58	73.4	79	100	
Healthcare Support									
No role	0	0	0	0	1	100	1	100	
Enough Role	2	16.7	4	33.3	6	50	12	100	0.192
Enough Role	8	9.2	14	16.1	65	74.7	87	100	

The result shows that there is no COVID-19 vaccination (p=0,176). This is in line relationship between knowledge and behavior of with research (Gamelia dkk, 2016) that

knowledge is not related to husband's behavior in caring for pregnant women (p=1,000) and is strengthened by research (Soeratinoyo dkk, 2021) knowledge is not related to COVID-19 prevention measures (p=0,624). Knowledge is very important to impart, although increasing knowledge does not always lead to changes in behavior (Green dalam Shiddiq, S., Wahyu, A., & Muis, 2014).

The result shows that there is no relationship between education level and COVID-19 vaccination behavior (p=0,532). This is in line with the research results (Carbone et al, 2021) that pregnant women who are willing to be vaccinated against COVID-19 have nothing to do with education (p=0,07). This is confirmed by research (Thaha et al, 2015) that the level of education (p=0,468) is not related to the behavior of exclusive breastfeeding. The higher a person's education, the easier it is to receive information, and the more knowledge he has (Wawan, 2010). However, in this case the COVID-19 vaccination is a new thing and there are many negative perceptions, so that even highly educated people still have doubts about vaccination.

The result shows that there is no relationship between work and COVID-19 vaccination behavior (p=0,794). This is in line with research (Carbone et al, 2021) that willingness to vaccinate against COVID-19 is not related to work (p=0,31). This is reinforced by research results (Ernawati et al, 2020) that the timeliness of vaccination is not related to the type of work (p=1,000). A person's interaction in a work relationship has a quality relationship that is certainly different from interactions with family. Although in terms of quantity, interaction time at work is more than with family, the quality of interaction with family is higher.

The result shows that there is no parity relationship with COVID-19 vaccination behavior (p=0,826). This is in line with research (Yuliani, 2019) that there is no relationship between maternal parity and measles rubella vaccination coverage (p=0,401). This is reinforced by research results (Setyorini dkk, 2019) that there was no relationship between mother's attitude and parity (p=0,254). Study (Pertiwi & Ayubi, 2022) also showed that there was no relationship between COVID-19 vaccination status with primigravida and multigravida groups (p=0,211). The parity variable in this case describes the experience of a mother in giving birth to a child. This is different from the experience of COVID-19 vaccination which is a new experience for every pregnant woman, with varied behavioral determinants.

The result shows that there is no relationship between ANC visit and COVID-19 vaccination behavior (p=0,393). It is possible for pregnant women to receive little information about COVID-19 vaccination when they make ANC visit. It can happen because some health workers still have doubts about the COVID-19 vaccination service. This is in line with the research result (Astuti dkk, 2021) that the wrong perception is caused by a lack of communication from health workers to convince the public about the effectiveness of the COVID-19 vaccine. This is reinforced by research results (Bouder F et al, 2015 in Paterson et al, 2016) that some health professionals feel unprepared to answer questions or engage in discussions with those who are unwilling to be vaccinated.

The result shows that there is no relationship between information access and COVID-19 vaccination behavior (p=0,525). This is in line with research (Milian dkk, 2022) that the active use of social media has no impact on the level of anxiety in receiving the COVID-19 vaccine. This is confirmed by research (Irmasari dkk, 2022) that immunization visit during the COVID-19 period had not related to access the information. Individual skepticism about the COVID-19 vaccine largely depends on the amount and type of information available. When people receive misinformation (negative content), they tend to question the safety of the vaccine and perceive it as a high risk (Guess, Nyhan, O'Keffe & Reifler, 2020., Betsch, Renkewitz, Betsch, & Ulshofer 2019 dalam Honora et al, 2021).

The result shows that there is a relationship between family support and

COVID-19 vaccination behavior (p=0.003). This is in line with research (Hutomo dkk, 2021) that there is a relationship between family support and participation in the second dose of COVID-19 vaccination (p=0.031). This is confirmed by research (Young, 2010 in Isni, 2016) that family support has a significant influence on decision making. The family is the main unit that is interrelated with one another, influencing each other between family members (Bronson, 2016 in Widantari dkk, 2021).

The results shows that there is no relationship between community leaders' support and COVID-19 vaccination behavior (p=0,574). This is in line with research (Aprilianingtyas & Indarjo, 2022) that there is no relationship between the support of community leaders and COVID-19 prevention behavior (p=0.483). This is confirmed by research (Winarti, 2020 in Aprilianingtyas & Indarjo, 2022) that there is no relationship between the support of community leaders and community compliance with the policy of Large-Scale Social Restrictions (p=0.981). This can happen due to other factors that are dominant in shaping behavior, one of which is family support. As explained above, behavior is the resultant result between the stimulus (external factor) and the response (internal factor) for person who behaves. (Notoatmodjo, 2005).

The result shows that there is no relationship between health workers support and behavior of COVID-19 vaccination (p=0,192). It is not in line with research (Raidanti, 2019) which stated that there was a relationship between health workers support on the implementation of TT immunization (p=0,001). This could be due to his research on TT immunization, which is a special program for pregnant women and is one of the ANC service standards, so that health workers are more enthusiastic about encouraging pregnant women to be immunized with TT. This is different from the COVID-19 vaccination which is not included in the ANC service standard and the target is not only pregnant women. This is reinforced by research result (Bouder F et al, 2015 in Paterson et al, 2016) that some health professionals feel unprepared to answer questions or engage in discussions with those who are unwilling to be vaccinated.

The multivariate analysis used was ordinal logistic regression analysis. In the early stages of analysis, the independent variables that will be included are selected first. The independent variables included in the multivariate analysis are the variables which in the bivariate analysis have a value of p<0,25 (Dahlan, 2011). The independent variables were knowledge (p=0,176), family support (p=0,003), support from health workers (p=0,192).

The result of the multivariate analysis table.4 shows that only family support variables are significantly related to the behavior of COVID-19 vaccination, with an *exp* value (2,654) = 14.2, which means that respondents who have family support have a tendency to behave well in COVID-19 vaccination by 14,2 times compared to respondents who do not have family support.

Family support plays an important role in encouraging a person's intention to participate in activities. This is in accordance with the theory that individuals also need social support, it is family support (Sunartyasih, 2012 in Umayana & Cahyati, 2015). This opinion is supported by research (McNeil et al, 2019) of 1,560 maternal respondents who indicated that 89% of mothers were willing to have their children vaccinated. The decision of mothers who want their children to be vaccinated first is through a discussion process in their families about considering the risks and benefits of vaccination. It means that there is an evaluation process (well-consideration), in line with research (Rogers, 1974 in Notoatmodjo, 2007) that before a person adopts a new behavior, within that person a sequential process occurs starting from awareness, interest, evaluation, trial dan adoption.

Tabel 4. Multivariate Analysis with Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.
Threshold	[behavior = 1]	-2,911	,467	38,855	1	,000
	[behavior = 2]	-1,442	,347	17,225	1	,000
Location	[know =1]	17,003	,000	.	1	.
	[know =2]	1,391	,870	2,558	1	,110
	[know =3]	0[a]	.	.	0	.
	[family =1]	-2,654	,858	9,570	1	,002
	[family =2]	-,999	,519	3,711	1	,054
	[family =3]	0[a]	.	.	0	.
	[health workers =1]	18,002	,000	.	1	.
	[health workers =2]	-,120	,717	,028	1	,867
	[health workers =3]	0[a]	.	.	0	.

Family support is a process throughout the life of a person who is able to apply various intelligence and reason, so as to improve family adaptation (Elmiani, 2014). It means that trust in the institution of the family is still strong, because the family is the place where all the cycles of a person's life stages take place. So that the influence is very strong in shaping a person's behavior. If the family get better support, his/her behavior will be better (Suryani & Arini, 2020).

CONCLUSION

The conclusion of this study is that there is no significant relationship between the variables of knowledge, education level, occupation, parity, ANC visit, information access, community leaders support and health workers support and COVID-19 vaccination behavior. The family support variable has a significant relationship. Family support plays an important role in encouraging a person's intention to participate in activities. Forms of family support for pregnant women include: empathy, willing to listen to their opinions, providing information and advice, suggesting, accompanying, providing, giving financial support for transportation or others. It is really needed by family members in acceptance of COVID-19 vaccination.

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