



# The Effect of Social Capital, Community Development, and Alert Village Program on the Preparedness Behavior of Pregnant Women at the Tanjungharjo Health Center, Bojonegoro Regency, Indonesia

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## Abstract

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**BACKGROUND:** The Maternity Planning and Complications in Prevention (MPCP) program aims to reduce maternal and infant mortality rates in Indonesia and it is implemented in Bojonegoro Regency, East Java Province, Indonesia. This program's optimum implication is determined by community participation and cross-sector cooperation.

**AIM:** This study aims to analyze the influence of social capital, community development, and prepared village with MPCP on the behavior of pregnant women's preparedness in Tanjungharjo Community Health Centre, Bojonegoro Regency.

**METHODS:** This is an observational analytical research with a cross-sectional design. The population is the community with 133 respondents selected through simple random sampling. The multiple logistic regression test was used to analyze the data.

**RESULTS:** Community development affects the preparedness behavior of pregnant women with  $p = 0.042$ , OR = 4.926 and prepared village with MPCP with  $p = 0.026$ , OR of 2.688.

**CONCLUSIONS:** Community development is the most influencing factor in the preparedness behavior of pregnant women.

## Introduction

Indonesia's health development goals aim to improve the health status and quality of human resources. This is indicated by efforts to increase life expectancy and reduce infant mortality rates (IMR) and maternal mortality rates (MMRs). These deaths happen partly due to mothers' inability to obtain proper medical help during pregnancy. The Maternity Planning and Complications in Prevention (MPCP) program aims to develop the community's potential to save pregnant women in labor, postpartum women, and newborns. Social capital is an interaction that supports people to build helpful communities and social order.

In Bojonegoro Regency, East Java Province, Indonesia, there was an increasing trend of MMR, where in 2017, there were 100.93 deaths/100,000 live births, and in 2018, there were 157.23 deaths/100,000 live births. The IMR also increases, where in 2017, there were 16.33 deaths/1000 live births, and in 2018, there were 17.35 deaths/1000 births [1].

In 2017, Bojonegoro Regency's 36 community health centers (CHCs) and 376 out of 430 villages

implemented the MPCP. All villages and 28 out of 36 CHCs also actively implemented the alert village program [2]. The MPCP programs have achieved: (1) Data collection and providing stickers as indicators of a pregnant mother's presence by 100%; (2) *Tabulin* (pregnant women's savings for delivery) by 43.9%, (3) village ambulance by 69.3%, and (4) blood donation by 46.7%. One of the CHCs which are still below the target is Tanjungharjo HC, with an achievement rate of 58.33%.

The MPCP program with stickers is expected to grow the potential of the community to save pregnant women, postpartum mothers, and newborns [3] that involve pregnant women, cadres, families, and the community. Its activities include monitoring maternal health by utilizing stickers affixed to every house of pregnant women [4]. This commitment relies on mutual trust between the community, a sense of belonging, and helping each other – known as social capital.

Based on this background, this paper aims to analyze the effect of social capital, community development, and the alert village with MPCP program on the preparedness behavior of pregnant women at the Tanjungharjo CHC, Bojonegoro Regency.

## Methods

This is an observational analytical study that provides information on research variables and an explanation of how they are related. The population of this study was the community (village head, village midwives, village cadres, and third-trimester pregnant women) who participated in the MPCP program at Tanjungharjo CHC, Bojonegoro Regency, Indonesia.

Researchers took samples as the population is large [5], using the formula  $n = N - \frac{N-1}{12}$ , using simple random sampling. The samples include both villages that run the programs well and those that do not. Out of 12 alert villages as the population, the sample was 11 of them. Five pregnant women and five health cadres were chosen randomly from the 11 villages. The samples also included 11 village heads, 11 village midwives, and one head of the community health center. Thus, there were 133 respondents. This research was conducted in September 2020.

## Results

### Social capital

The researchers analyzed the social capital of the village community (the 133 respondents from 11 villages) who participated in the MPCP. It is found that 77.44% of respondents have a high sense of trust, showing that fellow citizens trust the implementation of MPCP. Then, 69.92% have high reciprocity and mutuality; 58.65% have high social networks; 69.17% have a high sense of shared behavioral norms; and 63.16 have a high sense of commitment and belonging. The average social capital is high at 67.67%.

This means that most respondents regard the alert village with MPCP program as a shared norm in the community. They also pay attention to the shared behavioral norms and share good habits to support the preparedness of pregnant women in facing childbirth complications (Table 1).

**Table 1: Social capital in implementing the alert village with Maternity Planning and Complications in Prevention program at Tanjungharjo CMC, September 2020**

Village	High, n (%)	Medium, n (%)	Low, n (%)	Total, n (%)
Tapelan	4 (33.33)	7 (58.34)	1 (8.33)	12 (100)
Tanjungharjo	10 (83.33)	2 (16.67)	0	12 (100)
Wedi	10 (83.33)	2 (16.67)	0	12 (100)
Ngampel	10 (83.33)	2 (16.67)	0	12 (100)
Sembung	5 (41.67)	7 (58.33)	0	12 (100)
Bangilan	9 (75.00)	3 (25.00)	0	12 (100)
Tikusan	10 (83.33)	2 (16.67)	0	12 (100)
Padang Mentoyo	10 (83.33)	2 (16.67)	0	12 (100)
Kalianyar	4 (33.33)	8 (66.67)	0	12 (100)
Sambiroto	8 (66.67)	3 (25.00)	1 (8.33)	12 (100)
Bendo	9 (75.00)	3 (25.00)	0	12 (100)
Average	67.42	31.06	1.51	

It is shown that the average high social capital in implementing the alert village with MPCP program at Tanjungharjo CMC in 11 villages was 67.42%. Five villages have an 83.33% rate of social capital.

### Community development

Community development is a process to improve pregnant women's health conditions using the community's resources. Results of the research found that 66.92% regard that there is a high community organization. Then, 73.68% stated that there is high visioning and 68.42% stated that there is high planning. Finally, 66.17% stated that there is high implementation and evaluation. It is found that the average community development is high (at 68.80%) and the most achieved community development indicator is visioning. This means that part of the effort to mobilize the community in the context of the MPCP program has been fulfilled.

Table 2 shows that the average community development fulfilled in 11 villages is 71.97%. Six villages have a community development fulfillment rate of 83.33% while Kalianyar, only has a fulfillment rate of 66.67%.

**Table 2: Community development in implementing the alert village with Maternity Planning and Complications in Prevention program at Tanjungharjo CMC, September 2020**

Village	Fulfilled, n (%)	Medium fulfillment, n (%)	Unfulfilled, n (%)	Total, n (%)
Tapelan	8 (66.67)	4 (33.33)	0	12 (100)
Tanjungharjo	10 (83.33)	2 (16.67)	0	12 (100)
Wedi	10 (83.33)	2 (16.67)	0	12 (100)
Ngampel	10 (83.33)	2 (16.67)	0	12 (100)
Sembung	8 (66.67)	4 (33.33)	0	12 (100)
Bangilan	10 (83.33)	2 (16.67)	0	12 (100)
Tikusan	7 (58.33)	5 (41.67)	0	12 (100)
Padang Mentoyo	10 (83.33)	2 (16.67)	0	12 (100)
Kalianyar	4 (33.33)	8 (66.67)	0	12 (100)
Sambiroto	8 (66.67)	4 (33.33)	0	12 (100)
Bendo	10 (83.33)	2 (16.67)	0	12 (100)
Average	71.97	28.03	0.00	

### Alert village program implementation

The alert village program implements a delivery planning program for pregnant women that prepare for complications. The research found that 63.91% of the 133 respondents in Tanjungharjo CHC stated that this program is active; 35.34% stated that it is quite active; while 0.75% stated that it is not active (Table 3).

**Table 3: The implementation of the alert village program with Maternity Planning and Complications in Prevention at Tanjungharjo CMC, September 2020**

Indicators	Yes (%)	No (%)
Owns data on pregnant women and funding	130 (97.74)	3 (2.26)
Owns tabulin (pregnant women's savings for delivery)	97 (74.93)	26 (25.07)
Owns village ambulance	129 (96.99)	4 (3.01)
There are blood donors/candidate blood donors	104 (78.20)	29 (21.80)
Average	86.96	13.04

### Preparedness for birth complications

The researchers gave out questionnaires to the 133 respondents concerning the preparedness of

pregnant women in the third trimester in facing labor complications. It is found that 76,69% are ready, while 23,3% are not. Then, the researchers also questioned the respondents on the indicators of the preparedness behavior of pregnant women in facing birth complications (Table 4).

**Table 4: The indicators of the preparedness behavior of pregnant women in facing birth complications at Tanjungharjo Community Health Centers, September 2020**

The indicators of the preparedness behavior	Yes (%)	No (%)
Physical preparedness	133 (100.00)	0
Psychological preparedness	133 (100.00)	0
Preparedness of birth location and birth aid	133 (100.00)	0
Preparedness of birth companion	132 (99.25)	1 (0.75)
Preparedness of birth funds	131 (98.50)	2 (1.50)
Preparedness of transportation	125 (93.99)	8 (6.01)
Preparedness of blood donor candidate	104 (78.20)	29 (21.80)
Preparedness of postpartum contraception	127 (95.49)	6 (4.51)
Average	95.68	4.32

CHC: Community Health Center.

### How these factors influence behavior

The writers present the descriptive cross-tabulation per variable on the influence of social capital, community development, and alert village with MPCP on the preparedness behavior of pregnant women below (Table 5):

**Table 5: The cross-tabulation of social capital and behavioral preparedness of pregnant women at Tanjungharjo Community Health Centers, September 2020**

Social capital	Readiness behavior of pregnant women		Total, n (%)
	Ready, n (%)	Not ready, n (%)	
High	75 (84.30)	14 (15.70)	89 (100)
Medium	26 (61.90)	16 (38.10)	42 (100)
Low	1 (50.00)	1 (50.00)	2 (100)
Total	102 (76.70)	31 (23.30)	133 (100)

It is shown that for people with high social capital, the preparedness behavior of pregnant women is *ready*, amounting to 84.30%. Thus, social capital does not influence the preparedness level of pregnant women, with a different value of 34.30%.

According to Putnam [6], social capital is a value of mutual trust between community members toward their leaders. It involves networks, norms, and social trust that encourage social collaboration (coordination and cooperation) for the common good. It enables the achievement of certain goals [7].

If social capital is understood as a broader social capability regarding inclusiveness, social justice, human rights, and full economic and political participation of citizens, then it is a useful strategy for public health [8]. Social capital is a sociological concept referring to social connections and networks. The term capital refers to social cohesion and private investment in society [9].

The social capital at the Tanjungharjo CHC does not follow theory, as based on research, the trust is high, while the social network and shared norms of behavior are low. Social capital did not affect the readiness behavior of pregnant women.

Notoadmodjo [10] explains that healthy communities tend to have strong social networks. In

essence, social networks as social capital are born from mutually beneficial interactions and can be strengthened through empowerment. This study also shows that the high contribution of village leaders, community leaders, and health workers to mobilize residents results in the people's high sense of belonging to one another, high sense of responsibility for the problems that occur in the village, and high desire to improve the community's quality of life.

### The effect of Desa SIAGA on behavior

The influence of alert village with MPCP on the preparedness behavior of pregnant women can be seen in the Tables 6 and 7:

**Table 6: The cross-tabulation of alert village with Maternity Planning and Complications in Prevention and behavioral preparedness of pregnant women at Tanjungharjo Community Health Centers, September 2020**

Alert village with MPCP	Preparedness behavior of pregnant women		Total, n (%)
	Ready, n (%)	Not ready, n (%)	
Active	72 (84.70)	13 (15.30)	85 (100)
Quite active	30 (68.80)	17 (36.20)	17 (100)
Not active	0	1 (100)	1 (100)
Total	102 (76.70)	31 (23.30)	133 (100)

MPCP: Maternity Planning and Complications in Prevention.

**Table 7: The logistic regression analysis of the effect of community development on behavioral preparedness of pregnant women**

Variable	B	Wald	p	Exp(β)
Desa SIAGA with P4K	0.989	4.926	0.026	2.688
Constant	-4.289	24.682	0.000	0.014

It is shown that the active implementation of alert village with MPCP affects the preparedness behavior of pregnant women, with a different value of 83.50%. The results of the logistic regression show that the effect of the alert village with MPCP implementation on the preparedness behavior of pregnant women obtained  $p = 0.026$ . It means that its implementation does affect the readiness behavior of pregnant women with the odds ratio of 2.688, meaning that the fulfilled alert village implementation had an effect of 2.688 times on the maternity preparedness behavior.

In a study on empowerment in Viet Nam, it was revealed that the participation of mothers and health cadres resulted in changes in empowerment [11]. Community participation is active participation in decision-making, choosing community projects, planning, implementing, monitoring, and controlling them. It is an effective strategy to promote better economic development, improve life quality, and develop public health and the environment [12].

From the results of the study, it is also known that villages with community participation influence the implementation of community development. The implementation of the alert village resulted in changes in empowerment. This program helps pregnant women become more ready in facing childbirth complications. The results of the study also revealed that the lack of

blood donors and tabulin delayed the implementation of the alert village program.

**Multiple logistic regression analysis**

The researchers used multiple logistic regression to study the relationship between several independent variables and one dichotomous dependent variable (Table 8).

**Table 8: Bivariate results for multiple logistic regression**

Variable	$\chi^2$	p
Social capital	8.693	0.003
Community development	13.123	0.000
Alert village with MPCP	7.349	0.002

MPCP: Maternity Planning and Complications in Prevention.

The table above shows that the social capital variable has p = 0.003 on the preparedness behavior of pregnant women. Then, the community development variable has p = 0.000 and the alert village with MPCP has p = 0.002. The above shows the results of a variable test using the enter method to see if there is a significant relationship between the influencing factors (social capital, community development, and alert village with MPCP) on the behavior of pregnant women. It is significant if p < 0.05 was considered. Thus, all variables can be entered into the multivariate analysis.

Multivariate modeling on logistic regression is carried out by selecting important variables, namely, variables that have < 0.05 p-value. The variable output is carried out in stages starting from the variable with the largest p-value. If the excluded variables result in a large change in the coefficient (OR value) of the remaining variables (changed > 10%), then the variable is re-entered into the model. Variable selection is through by ENTER method (Table 9).

**Table 9: First modeling with complete variables**

Variable	B	Wald	p	Exp (B)
Social capital	-0.401	0.293	0.588	0.670
Community development	1.595	4.120	0.042	4.926
Alert village with MPCP	0.989	4.926	0.026	2.688
Constant	-4.289	24.682	0.000	0.014

MPCP: Maternity Planning and Complications in Prevention.

From Table 9, one variable has p > 0.05, namely, social capital. Hence, in further modeling, social capital is removed.

**Discussion**

From Table 10, it can be concluded two subvariables influence the preparedness behavior

**Table 10: Final multivariate model**

Variable	B	Wald	p	Exp (B)
Social capital	-0.401	0.293	0.588	0.670
Community development	1.595	4.120	0.042	4.926
Alert village with MPCP	0.989	4.926	0.026	2.688
Constant	-4.289	24.682	0.000	0.014

MPCP: Maternity Planning and Complications in Prevention.

of pregnant women (p < 0.05), namely, community development with p = 0.042 and alert village with MPCP with p = 0.026. Community development has the largest odds ratio in the multivariate final model with a value of 4.926. It means that community development's implementation has influenced 4.926 times the preparedness behavior of pregnant women.

Based on the B value above, the logistics regression equation model formed is

Preparedness behavior of pregnant women (Ln P/1-P) = -4.289 + 1.595 community development + 0,989 Alert Village with MPCP

Or

Probability = exp (-4.289 + 1.595 community development + 0,989 alert village with MPCP)/1 + exp (-4.289 + 1.595 community development + 0,989 alert village with MPCP).

The logistic regression equation model formed can be used to determine the probability value of respondents on the preparedness behavior of pregnant women based on community development and alert village with MPCP. The constant value in the above equation is -4.289, which means that if the respondents have fulfilled community development and alert village with MPCP, then the respondent will be ready for preparedness behavior [13].

The results of the study do not follow the theory, as social capital does not affect the preparedness behavior of pregnant women. This is because the social networks and shared norms of behavior elements in social capital have the lowest percentage. Meanwhile, the sense of commitment and belonging is still high. Below 64% means low, where the parameters of social capital, namely, trust, norms, and networks are below 64%. This is what causes social capital not to affect the readiness of pregnant women, in contrast with community development and the implementation of alert village with MPCP, all of which have a percentage value of above 64%, thus affecting the readiness behavior of pregnant women.

**Conclusions**

Social capital does not affect the readiness behavior of pregnant women and the odds ratio is 0.670, meaning that high social capital has a 0.670 effect on the preparedness behavior of pregnant women. Community development affects the readiness behavior of pregnant women with the odds ratio of 4.928, meaning that it has an effect of 4.928 times on the readiness behavior of pregnant women. The implementation of alert village with MPCP affects the readiness behavior of pregnant women with the odds ratio of 2.688 meaning that its implementation has



an effect of 2,688 times on the readiness behavior of pregnant women.

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