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## **Optimization of Health Cadres Role in the Pregnant Women Health Promotion in Sleman Regency, Yogyakarta, Indonesia**

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### **Abstract**

The potential of cadres in improving maternal health is quite high, but there are many factors that influence its role. The aim of this present study is to analyze the determinants that influence the optimization of the role of health cadres in health promotion of pregnant women. The study was conducted in Sleman Regency, Yogyakarta, Indonesia. The research method used is quantitative with a cross-sectional approach. The samples is 269 health cadres. Determinant factors optimizing the role of health cadres include: education (b = 0.91; p = 0.378), knowledge (b = 0.87; p = 0.002), experience (b = 0.37; p = <0.001), attitude (b = 0.32; p = 0.012). Determinant factors of cadre attitudes in health promotion of pregnant women include: education (b = 0.37; p = 0.448), knowledge (b = 0.30; p = 0.024), experience (b = 0.15; p = 0.002). The determinant factor of knowledge about health promotion of pregnant women is education (b = 0.54; p = 0.012). The factors that influence health cadres health role in the pregnant women health promotion are knowledge, experience, and attitudes of health cadres. These factors become a reference for policymakers to make policies that are useful in increasing knowledge, experience, and attitudes of health cadres so that health services become better.

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**Keywords:** education; knowledge; experience; attitude; health cadres.

## **1. Introduction**

Health cadres in Indonesia have an important role in improving public health [1]. Health cadres become a liaison between the community and health workers as well as with health facilities, this also means that health cadres indirectly serve as a liaison between the community and stakeholders, namely the Community Health Center, the Health Service, and even the Ministry of Health [2]. Community empowerment in this case health cadres can increase program acceptance among the community [3]. Health cadres are community members chosen by the community who have the ability to work together in various community activities. Health cadres have similarities with Community Health workers (CHW), or other names for this type of health care provider are village health workers, community assistants, public health promoters, and lay health advisors [4].

According to Bucagu, health cadres play an important role in connecting people with health facilities and providing relevant support for health promotion [5]. While in other health problems, about a quarter of patients (26.5%) were referred to hospitals by community health cadres [6]. Furthermore, health cadres also play a role in reducing child morbidity and mortality [7]. The maternal mortality rate (MMR) in Indonesia is 305 / 100,000 live births, which is the highest in Southeast Asia [8]. The causes of maternal mortality are bleeding (32%), hypertension (26%), infection (5%), circulatory system disorders (5%) and other causes (29%) [9]. Maternal mortality can occur due to complications during labor. To reduce complications, efforts are needed to improve the quality of maternal health. Efforts to reduce MMR were accommodated in the goals of 3 Sustainable Development Goals (SDGs), namely ensuring a healthy life and promoting prosperity for all people of all ages, one of which was reducing MMR in Indonesia to below 70 per 100,000 live births in 2030 [10].

The role of health cadres consists of cognitive, relational and structural dimensions. Cognitive dimensions include caring, trust and belonging between family members, community members, and cadres and health workers. The relational dimension includes cooperation and communication based on shared values. Structural dimensions include social networks, associations, and unity [11]. In addition, health cadres must also be able to mobilize existing groups and community organizations. In connection with this, the development of abilities and skills (capacity building) of health cadres is social capital (social capital) in a community needs to be carried out sustainably [12]. The development of these sustainable skills and abilities enables cadres to be more confident in carrying out their roles, one of which is in promoting the health of pregnant women [13].

Based on preliminary studies conducted in Sleman Regency, it can be explained that various factors that encourage a person to be willing to volunteer in health development and are willing to improve the level of community health include health cadres. The task of the health cadre is a noble task and can add experience and insight into the health field. Health cadres have an effect on their own health and can even share experiences with the community. Health cadres are closer to community leaders and are known by policy makers both at the village, sub-district and district levels. Susanto and his colleagues [14] states that cadres have a high social spirit which is formed by a combination of internal, external motivation, resources, potential and experience of capacity building.

Sharma and his colleagues [15] explained that sociodemographic factors include individual characteristics, professionalism, organizational factors and factors that arise from outside the work environment that have an influence on the role and performance of health cadres. While knowledge is another important component related to role performance. Cadres who have good knowledge tend to have good role performance. Based on the description above, this study aims to analyze the determinants that influence the optimization of the role of health cadres in health promotion of pregnant women in Sleman Regency, Yogyakarta, Indonesia.

## **2. Methods**

### **2.1. Research design**

The design of this study is an analytical survey with quantitative methods supported by qualitative data. This research includes explanative research, using a cross-sectional approach.

### **2.2. Population and sample**

The population in this study were health cadres who were active in 25 Community Health Centers in Sleman Regency, totaling 892 people. The sample in this study were some active health cadres, calculated using the formula from Lemeshow and his colleagues [16], obtained a total sample of 269 active cadres.

The sampling technique in this study was cluster random sampling, the selection of clusters (groups) using multistage cluster random sampling. The sample selection stage begins with grouping the area of the community health center. At this stage 2 community health centers are chosen, namely the community health centers in rural and urban areas, then groups are selected according to the strata of public health centers. The next stage is selected through a group organization (chairman, member) and finally proportionally randomly drawn simple samples.

### **2.3. Instruments and data collection techniques**

The research instrument in this study uses researcher-made questionnaire. The questionnaire was first tested for validity and reliability. Validity tests include: (1) content validity, namely validity that aims to see the content of the instrument that is assessed by experts. The results of the study were analyzed using Aiken validity coefficient with validity criteria, if the coefficient was between 0.00 - 0.4 with the category of unfit for use, 0.4 - 0.8 with the category feasible to use through repairs and 0.8 - 1.0 with categories worth using without improvement, (2) face validity that is using language that is good and right is assessed by practitioners in this case the cadre of public health centers, the assessment results are analyzed descriptively with categories 1.00 - 1.75 are not suitable for use, 1.76 - 2.50 is quite feasible to use, 2.51 - 3.25 feasible to use and 3.26 - 4.00 is very feasible to use, (3) construct validity using CFA (confirmatory factor analysis). The construct is said to be good if the loading factor value is greater than 0.5. Reliability is: (1) internal consistency, and (2) stability. The internal consistency measured quantitatively in this study from each composite variable includes: (1) Item-Total Correlation, the calculation results of each item have item-total correlations  $\geq 0.20$ , (2) Split-Half Reliability, with calculate the cronbach alpha value, the result of calculating the cronbach alpha value is  $\geq 0.60$ .

**2.4. Data analysis techniques**

Data analysis in this study uses path analysis with the help of Amos software. Data analysis in this study consisted of 5 steps: (1) model specification, (2) model identification, (3) model suitability, (4) parameter estimation, and (5) model respecification.

**3. Results**

**3.1. Descriptive analysis**

Descriptive analysis is used to describe the categories of each variable under study. The results of the analysis can be seen in Table 1.

**Table 1:** Frequency distribution of respondents according to research variables

Variable	Criteria	Frequency	Percentage (%)
Education	Elementary School,	66	24,54
	Junior High School		
	Senior High School,		
	Vocational High		
	School		
Knowledge	Diploma I & III	13	4.83
	Undergraduate	24	8.92
	Good	177	65.8
	Good Enough	89	33.1
Experience	Poorly	3	1.1
	Not Good	0	0.00
	<5 Year	93	34.6
	5- <10 Year	59	21.9
Attitude	10- <15 Year	47	17.5
	≥15 Year	70	26.0
	Good	78	29.0
	Good Enough	184	68.4
The Role of Cadres in Health Promotion	Poorly	7	2.6
	Not Good	0	0.00
	Good	42	15.6
Health Promotion	Good Enough	87	32.3
	Poorly	83	30.9
	Not Good	57	21.2

Table 1 shows that the majority of health cadres have high school and vocational education, with the highest level of knowledge in the good category, having less than 5 years of cadre experience, and the highest attitudes towards the promotion of pregnant women in the category. The role of health cadres in health promotion is almost the same as that which is quite good and not good.

**3.2. Results of bivariate analysis**

**Table 2:** Determinants of the role of cadres in promoting the health of pregnant women

Dependent Variable	Independent Variable	r	P
The role of cadres in health promotion of pregnant women	Education	0.5	0.378
	Knowledge	0.18	0.002
	Experience	0.20	<0.001
	Attitude	0.14	0.012
Attitude	Education	0.46	0.448
	Knowledge	0.13	0.024
	Experience	0.18	0.002
Knowledge	Education	0.15	0.012

Based on Table 2 it can be explained that education variable has a relationship to the role of cadres in promoting the health of pregnant women, but not significantly. The higher the score of knowledge the higher the role of cadres in the promotion of health of pregnant women. The higher the experience score, the higher the role of cadres in promoting the health of pregnant women. The higher the attitude score, the higher the role of cadres in the promotion of health of pregnant women. The education variable is related to the attitude of cadres in promoting the health of pregnant women, but it is not significant.

**3.3. Results of path analysis**

Path analysis is used to see how far the influence of independent variables on the independent variables. The results of the analysis can be seen in Table 3.

Based on Table 3 it can be explained that every increase of 1 education unit will increase the role of cadres in the promotion of health of pregnant women by 0.91 units (b = 0.91, SE = 1.03, p = 0.378). Every increase of 1 unit of knowledge will increase the role of cadres in the promotion of health of pregnant women by 0.87 units (b = 0.87, SE = 0.28, p = 0.002). Every increase of 1 unit of experience will increase the role of cadres in the health promotion of pregnant women by 0.37 units (b = 0.37, SE = 0.11, p = <0.001). Every increase of 1 unit of attitude will increase the role of cadres in the promotion of health of pregnant women by 0.32 units (b = 0.32, SE = 0.12, p = 0.012). Every increase in 1 unit of education will improve the attitude of cadres in the promotion of health of pregnant women by 0.37 units (b = 0.37, SE = 0.49, p = 0.448). Every increase of 1 unit of knowledge will improve the attitude of cadres in the promotion of health of pregnant women by 0.30 units (b =

0.30, SE = 0.13, p = 0.002). Every increase of 1 unit of experience will increase the cadre's attitude in health promotion of pregnant women by 0.15 units (b = 0.15, SE = 0.05, p = 0.002). Every increase of 1 education unit will increase cadre knowledge in health promotion of pregnant women by 0.54 units (b = 0.54, SE = 0.21, p = 0.012).

**Table 3:** Results of Path Analysis

Dependent Variable		Independent Variable	b	SE	p	B
<b>Direct Effect</b>						
The role of cadres in health promotion	←	Education	0.91	1.03	0.378	0.05
The role of cadres in health promotion	←	Knowledge	0.87	0.28	0.002	0.18
The role of cadres in health promotion	←	Experience	0.37	0.11	<0.001	0.20
The role of cadres in health promotion	←	Attitude	0.32	0.12	0.012	0.14
<b>Indirect Effect</b>						
Attitude	←	Education	0.37	0.49	0.448	0.04
Attitude	←	Knowledge	0.30	0.13	0.024	0.13
Attitude	←	Experience	0.15	0.05	0.002	0.18
Knowledge	←	Education	0.54	0.21	0.012	0.15
<b>Model Fit</b>						
CMIN	0.39	p = 0.52 > 0.05				
GFI, AGFI, NFI,	0.99	≥ 0.90				
CFI	1.00	≥ 0.95				
RMSEA	0.00	≤ 0.08				

#### 4. Discussion

Most (61.71%) health cadres in this research have a high school education, quite a number (24.54%) of health cadres only have basic education, and few have higher education. However, in Indonesia education is not a requirement to become a health cadre, because the requirements that must be possessed by health cadres is enough to be able to read and write [17]. But education can be important because one way can change one's behavior. Education is a means to accelerate decision making in an effort to improve behavior [18]. According to Pampel and his colleagues [19], the addition of one year of education can reduce mortality by around 8 percent.

The knowledge of health cadres about the health promotion of pregnant women in this research is mostly in the good and quite good category, only 1.1% of health cadres who have knowledge in the poor category. This condition is almost the same as the level of knowledge of health cadres about monitoring development and health promotion of children under five in Mwingi West, Kenya who have an average score  $(6.31 \pm 3,077)$  [20]. Knowledge is important and fundamental owned by health cadres, knowledge is the basic capital in conducting health education [18]. The results of the study illustrate that most health cadres have more than 5 years experience, while those with less than 5 years experience only 34.6%. Health cadres who already have experience are expected to have better knowledge and skills. The experience of health cadres is important because it is a knowledge or skill that someone has known and mastered as a result of an act or work that has been done [21].

The education relates significantly to knowledge about health promotion of pregnant women. This shows that the level of education of a person facilitates the cadre to receive information. In contrast, person with low or less education will be difficult to receive information. The education has a relationship with the role of cadres in promoting the health of pregnant women but is not significant. Education is a major factor in knowledge [18]. Knowledge can improve the ability to identify and solve local health problems [22]. Knowledge relates significantly to the role of health cadres in promoting the health of pregnant women. Cadres who have a good level of knowledge about maternal health will easily convey messages about health to pregnant women. Submission of health messages by health cadres increase knowledge of maternal and newborn care among women and the community [23].

Experience relates significantly to the role of health cadres in promoting the health of pregnant women. This means that high experience can improve the role of health cadres in promoting the health of pregnant women. The results also show that every increase of 1 unit of experience will increase the role of health cadres in the promotion of health of pregnant women by 0.37 units. More experience can lead to creativity so that health cadres have better innovations [24]. Health cadres who help pregnant women more are those who have had a longer cadre work period [21]. The duration of participation of health cadres also has a significant effect on success in empowering acceptability of contraceptives and use of services [25].

Attitudes have a significant influence on the role of health cadres in promoting the health of pregnant women. This means that a good attitude makes the role of health cadres in promoting the health of pregnant women good. Every increase of 1 unit of attitude will increase the role of cadres in the promotion of health of pregnant women by 0.32 units. If a behavior will produce positive consequences then individuals will tend to have a favorable towards the behavior, on the contrary, individuals who have a negative evaluation attitude towards a behavior will tend to have an unfavorable attitude towards the behavior [26]. Education influences attitudes on health promotion of pregnant women but is insignificant. This means that the attitude of health cadres in health promotion is more influenced by factors other than education. Knowledge has a positive and significant effect on attitudes in the promotion of health of pregnant women. This result indicates that high knowledge can improve the attitude of health cadres in promoting the health of pregnant women. The knowledge is a predisposing factor in the formation of behavior [18]. Attitudes cannot be directly seen, but can only be interpreted in advance from closed behavior [27]. A person's knowledge of an object can contain two aspects:

positive aspects and negative aspects. These two aspects will determine a person's attitude, the more positive aspects of the object are known, it will lead to an increasingly positive attitude towards certain objects. Knowledge of health cadres greatly influences the formation of attitudes of health cadres in responding to what they know. Experience has proven to have a significant effect on attitudes in the promotion of health of pregnant women. This means that experience can improve the attitude of health cadres in promoting the health of pregnant women. Attitudes will be more easily formed if the personal experience occurs in situations involving emotional factors.

## **5. Conclusion**

The results of the analysis show that there are three factors that influence the success of the health promotion of pregnant women, namely, knowledge, experience and attitudes of health cadres. These results indicate that the knowledge, experience, and attitudes of health cadres have a positive impact on the health promotion of pregnant women. Knowledge, experience, and attitudes of health cadres are important factors that need to be considered by all health elements. The knowledge, experience and attitude of the health cadres can improve health promotion for pregnant women so as to reduce the mortality rate of pregnant women. These results could become a reference for policymakers to make policies that are useful in improving the knowledge, experience, and attitudes of health cadres.

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