



Family-Centered Care as A Cadre Empowerment Strategy For Early Detection Of High-Risk Pregnancies in The Community

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ABSTRACT

High-risk pregnancies remain a significant contributor to maternal complications and elevated maternal mortality rates, necessitating early detection efforts that involve communities and families. This community service program aimed to enhance the knowledge and skills of community health cadres in early detection of high-risk pregnancies using a Family-Centered Care (FCC) approach in the working area of Wagir Primary Health Center, Malang Regency. Methods used included health education, training on the use of screening forms, simulation exercises, family education sessions, and on-site mentoring of cadres at integrated health posts (posyandu). Evaluation was conducted using a pretest-posttest design among 64 health cadres. Results showed an increase in the average knowledge score from 54.90 at pretest to 88.75 at posttest. In addition, cadres demonstrated the ability to identify pregnancy risk factors, detect pregnant women in the high-risk category, and coordinate with village midwives for case follow-up. Family involvement in pregnancy monitoring also increased through improved awareness of danger signs and greater support for antenatal care visits. Statistical analysis showed that Family-Centered Care-based training and mentoring are effective in enhancing cadre capacity and family participation in the early detection of high-risk pregnancies. This program can serve as a community empowerment strategy that supports the prevention of pregnancy complications and the sustainable improvement of maternal health.

KEYWORDS

Early Detection; Family-Centered Care; Health Cadres; High-Risk Pregnancy; Community Service

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INTRODUCTION

Pregnancy is a physiological process that requires continuous monitoring to prevent complications that may endanger the mother and fetus. Although the majority of pregnancies proceed normally, approximately 15–20% of pregnant women are at risk of developing complications that require prompt management. Delays in recognizing warning signs and pregnancy risk factors remain among the leading causes of high maternal morbidity and mortality in many developing countries, including Indonesia. Consequently, early detection of high-risk pregnancy represents a critical strategy in the prevention of obstetric complications.

According to data from the Ministry of Health of the Republic of Indonesia, the maternal mortality rate (MMR) continues to pose a major challenge to national health development. Several factors contribute to elevated MMR, including hemorrhage, pregnancy-induced hypertension, infection, and delayed decision-making in seeking medical assistance. These conditions are often exacerbated by insufficient family knowledge regarding pregnancy danger signs and limited community capacity for early risk identification.

Community health cadres serve a strategic role as the frontline of community-based health services. Beyond acting as a bridge between communities and health facilities, cadres perform promotive and preventive functions including monitoring the health of pregnant women. Nevertheless, a preliminary assessment conducted in the working area of Wagir Primary Health Center indicated that many cadres still lacked the capacity to identify pregnancy risk factors and perform simple screening of pregnant women in their respective coverage areas. This limitation could delay the identification of high-risk cases, thereby increasing the likelihood of pregnancy complications.

In addition to cadre capacity, family involvement is also a key determinant of successful pregnancy monitoring. Research consistently shows that decisions to seek healthcare among pregnant women are largely influenced by family members, particularly husbands. However, family participation in pregnancy monitoring remains suboptimal due to limited knowledge about pregnancy danger signs and the importance of routine antenatal care. Therefore, an approach is needed that addresses not only the pregnant women themselves but also the family as part of the health support system.

One applicable approach is Family-Centered Care (FCC). This model positions the family as a partner in the healthcare process by enhancing communication, education, and active family involvement in health-related decision-making. The implementation of FCC at the community level is expected to raise family awareness about the importance of early detection of high-risk pregnancies and to reinforce family support for pregnant women in accessing health services.

Based on the identified challenges, the community service team implemented a cadre empowerment program through high-risk pregnancy early detection training using the Family-Centered Care approach in the working area of Wagir Primary Health Center, Malang Regency. The program aimed to improve cadre knowledge and skills in performing pregnancy risk screening, strengthen family involvement in pregnancy monitoring, and support pregnancy complication prevention through community-based early detection.

MATERIALS AND METHODS

This community service activity was conducted in the working area of Wagir Primary Health Center, Malang Regency, during June–July 2025. The target population consisted of 64 posyandu health cadres from several villages under the health center's supervision. The program employed multiple methods including health education on high-risk pregnancy, training on the use of pregnancy risk





screening forms, simulation of early detection procedures, family education sessions, and field mentoring of cadres at posyandu activities.

Program effectiveness was evaluated using a pretest-posttest design. Knowledge was measured using a structured questionnaire before and after the training. Statistical analysis was conducted to determine the significance of knowledge improvement, with a significance threshold set at $p < 0.05$. The Family-Centered Care approach was operationalized through the inclusion of family members in education sessions, emphasizing their role in monitoring pregnant women and supporting timely referral for high-risk cases.

RESULTS AND DISCUSSION

The cadre empowerment program for early detection of high-risk pregnancy using the Family-Centered Care approach was implemented in the working area of Wagir Primary Health Center, Malang Regency, from June to July 2025. The program involved 64 posyandu cadres from several villages under the health center's coverage area. Program activities consisted of health education on high-risk pregnancy, training on the use of pregnancy risk screening forms, simulation of early detection procedures, family education sessions, and field mentoring at posyandu activities. Evaluation was conducted using a pretest-posttest method to measure knowledge improvement.

Participant characteristics showed that the majority of cadres were aged 31–40 years (40.6%), had completed senior secondary education (56.3%), and had served as cadres for more than five years (43.8%), as presented in Table 1.

Table 1. Characteristics of Participants (n=64)

Characteristics	n	%
Age 20–30 years		
20–30 years	22	34.4
31–40 years	26	40.6
> 40 years	16	25.0
Education Level		
Elementary School	8	12.5
Junior High School	20	31.3
Senior High School / Equivalent	36	56.3
Duration as Cadre		
< 3 years	15	23.4
3–5 years	21	32.8
> 5 years	28	43.8





Table 2. Results of knowledge evaluation showed a significant increase following the training. The mean pretest score of 54.90 increased to 88.75 at posttest, representing an improvement of 33.85 points or approximately 61.7% from the baseline. Statistical analysis yielded a p-value of 0.000 ($p < 0.05$), indicating that the Family-Centered Care-based early detection training was effective in improving cadre knowledge regarding pregnancy risk factors, danger signs, referral mechanisms, and the role of the family in monitoring pregnant women.

Table 2. Pretest and Posttest Knowledge Scores of Cadres (n=64)

Variable	Mean \pm SD	p-value
Pretest	54.90 \pm 8.12	
Posttest	88.75 \pm 5.84	0.000

The program results demonstrated a significant improvement in cadre knowledge following the high-risk pregnancy early detection training with the Family-Centered Care approach. The average knowledge score increased from 54.90 at pretest to 88.75 at posttest. Furthermore, cadres were able to identify pregnancy risk factors using the provided screening forms and communicate screening results to both family members and village midwives. During the field mentoring phase, cadres successfully identified several pregnant women in the high-risk category who subsequently received follow-up care from health workers.

This knowledge improvement aligns with adult learning theory, which posits that the provision of information through education, discussion, demonstration, and hands-on practice enhances participants' understanding and problem-solving capacity in real-world settings. Training that involves active participation enables more effective knowledge transfer compared to one-directional information delivery. According to Notoatmodjo (2018), knowledge is a predisposing factor that influences health behavior formation; therefore, improving knowledge constitutes a fundamental step toward changing community health practices.

These findings are consistent with various studies demonstrating that structured training of health cadres enhances their capacity to fulfill promotive and preventive functions in the community. Trained cadres exhibit greater proficiency in conducting health education, monitoring target populations, and detecting early health problems compared to untrained counterparts. In the context of maternal health, cadre capacity building is particularly important given their proximity to families and pregnant women in the community.

Beyond knowledge improvement, the program also yielded enhanced cadre skills in performing pregnancy risk screening. This was evident in the cadres' ability to identify risk factors and coordinate with village midwives for case follow-up. These outcomes indicate that the training addressed not only cognitive aspects but also the practical skills required for cadre duties. Community empowerment theory suggests that building individual capacity through training and mentoring strengthens the community's ability to independently identify and address health problems.





The Family-Centered Care approach contributed meaningfully to program success. Observational data showed increased family involvement in recognizing pregnancy danger signs, reminding pregnant women of scheduled antenatal visits, and supporting referral decisions when high-risk factors were identified. Theoretically, Family-Centered Care positions the family as a primary partner in the health service process, enabling family members to actively participate in health decision-making and monitoring rather than serving merely as passive recipients of information. Improved family engagement can accelerate decision-making for medical help-seeking and reduce delays in managing pregnancy complications.

According to the program team, success was attributable not only to the training content but also to the mentoring methodology that allowed cadres to practice skills in real situations. This approach fostered greater cadre confidence in performing screening and enhanced program sustainability beyond the service activity period. Additionally, the use of simplified and comprehensible screening forms served as a key facilitating factor in community-level early detection. Accordingly, this Family-Centered Care-based cadre empowerment model has the potential to become an effective and sustainable strategy in supporting the prevention of pregnancy complications and reducing maternal and neonatal mortality at the community level.

Overall, the program results demonstrate that the combination of training, field mentoring, and family involvement effectively improves cadre capacity for early detection of high-risk pregnancies. This model can be replicated in other areas with comparable community characteristics as a means to strengthen community-based maternal health early warning systems.

CONCLUSIONS

The cadre empowerment program through high-risk pregnancy early detection training with the Family-Centered Care approach has been shown to be effective in improving cadre knowledge and skills in screening for high-risk pregnancies. This was evidenced by a significant increase in the mean knowledge score from 54.90 to 88.75 following the training, as well as demonstrated cadre ability to identify and follow up on high-risk cases in coordination with health workers. Furthermore, family involvement in pregnancy monitoring increased, indicating that this program has the potential to serve as a community-based strategy supporting the prevention of pregnancy complications and the sustainable improvement of maternal health.

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Conflict of Interest

The authors declare no conflict of interest, financial or otherwise, in relation to this publication. No commercial products or external parties influenced the design, implementation, or reporting of this community service activity.

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