



Father's Presence in Pregnancy: Linking Husbands' Knowledge and Support to Prevent Fatherless Function

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Abstract. Background: Fatherless function does not only refer to the physical absence of fathers but also to limited paternal involvement during pregnancy. Husbands' knowledge plays a crucial role in shaping supportive behaviors toward primigravida wives. Objective: This study aimed to examine the relationship between husbands' knowledge and their support for primigravida mothers in Magelang District, Central Java, Indonesia. Methods: A cross-sectional study was conducted involving 186 husbands of primigravida women attending antenatal care services at community health centers (*puskesmas*). Data were collected using structured questionnaires measuring husbands' knowledge and multidimensional support, including informational, emotional, appraisal, and instrumental support. Data were analyzed using descriptive statistics and Spearman's rank correlation test. Results: The results showed a significant positive correlation between husbands' knowledge and support ($p = 0.255$; $p < 0.001$), indicating that higher knowledge levels were associated with stronger support during pregnancy. Conclusion: These findings highlight the importance of integrating father-focused educational interventions into antenatal care services to enhance paternal literacy and prevent fatherless function at both family and community levels.

Keywords: husband, pregnancy, knowledge, support, fatherless function

1 Introduction

Father involvement during pregnancy is an essential factor that contributes significantly to maternal and newborn health. Epidemiological evidence suggests that adequate paternal support determines optimal maternal and neonatal outcomes [1]. A father's role encompasses not only physical presence but also emotional, instrumental, and active participation in pregnancy care, which can positively influence family well-being [2]. Limited husband participation may result in what is known as *fatherless function*, a

condition where the father remains physically present but fails to provide emotional and instrumental support [3]. The concept of *fatherless function* includes various manifestations, ranging from lack of attention and engagement to intergenerational effects on child development [4].

Globally, husband involvement in pregnancy has been shown to have a strong positive impact. Paternal support can reduce maternal stress through emotional and practical assistance, encouraging active maternal participation in antenatal care [1, 5]. Husbands with higher knowledge and education levels are more likely to accompany their wives during antenatal visits and participate in birth preparedness [6]. Conversely, insufficient paternal knowledge is associated with an increased risk of preterm delivery and low birth weight [1]. In Indonesia, particularly in Magelang District, Central Java, male participation in pregnancy care faces social and cultural barriers, as well as limited health literacy.

Most antenatal services in community health centers (*puskesmas*) remain mother-centered, while the father's role has yet to be fully integrated into family-based support systems. This makes Magelang a relevant context for studying the relationship between husbands' knowledge and support, and how these factors can contribute to preventing *fatherless function* at the community level.

Despite the growing body of evidence on paternal involvement during pregnancy, empirical studies that specifically examine the relationship between husbands' knowledge and multidimensional support in the Indonesian primary health care context remain limited. Most existing studies focus on maternal outcomes or general male participation, with less attention given to how husbands' knowledge translates into concrete supportive behaviors during a first pregnancy.

This study addresses this gap by analyzing the association between husbands' knowledge and four dimensions of support informational, emotional, appraisal, and instrumental among primigravida couples in Magelang District, Central Java. By focusing on the first pregnancy, this study captures a critical period in which paternal roles and caregiving patterns are initially formed, providing context-specific evidence to inform father-inclusive antenatal care strategies.

This study aims to analyze the relationship between husbands' knowledge and support for primigravida wives and to contribute evidence for designing effective interventions to enhance father involvement during pregnancy.

2 Methods

This study employed a cross-sectional design to analyze the relationship between husbands' knowledge and support for primigravida wives in preventing fatherless function. The design was chosen to assess both variables simultaneously without intervention, providing a snapshot of the current level of paternal involvement during pregnancy. The study was conducted at community health centers (*puskesmas*) in Magelang District, Central Java, Indonesia.

The study population included husbands of primigravida women attending antenatal care (ANC) services at participating *puskesmas*. A total of **186 respondents were recruited using total sampling**. The inclusion criteria were: (1) husbands of primigravida women with gestational age ≤ 36 weeks, (2) willingness to participate and provide informed consent, and (3) ability to communicate in Bahasa Indonesia. The exclusion criteria included husbands who did not live with their wives during pregnancy or had health conditions that prevented participation.

Data were collected using two structured questionnaires. The **Husbands' Knowledge Questionnaire** consisted of 24 items assessing knowledge related to physiological and psychological changes during pregnancy, maternal needs, and pregnancy danger signs. Responses were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with higher scores indicating better knowledge. The **Husbands' Support Questionnaire** comprised 24 items covering four dimensions of support: informational, emotional, appraisal, and instrumental support. Each item was rated on a 5-point Likert scale, with higher scores reflecting stronger support. Support scores were categorized into low, moderate, and high levels using tertile distribution.

Data collection was conducted between **June and August 2025** in collaboration with community health workers and midwives at participating *puskesmas*. After obtaining ethical and administrative approval, respondents were informed about the study objectives, confidentiality, and their right to withdraw at any time. Questionnaires were completed independently by respondents under researcher supervision in designated counseling rooms.

Data were entered and analyzed using statistical software. **Univariate analysis** was used to describe respondents' characteristics, including education, occupation, knowledge level, and support level. **Bivariate analysis** was performed using Spearman's rank correlation (ρ) to examine the relationship between husbands' knowledge and support, with a significance level of $\alpha = 0.05$. Correlation strength was interpreted as follows: 0.00–0.25 (weak), 0.26–0.50 (moderate), 0.51–0.75 (strong), and >0.75 (very strong).

This study obtained **ethical clearance from the Ethics Committee of Moewardi Hospital, Surakarta**. Participants' anonymity and voluntary participation were ensured, and all data were kept confidential and used solely for research purposes.

3 Results

A total of **186 husbands of primigravida women** participated in this study. As shown in **Table 1**, the majority of respondents had a **senior high school education (68.3%)**, followed by elementary to junior high school education (17.7%) and diploma or bachelor's degree (7.5%). Regarding occupation, more than half of the respondents were **private employees (52.2%)**, while the remainder worked in various informal or public sectors.

Table 1. Characteristics and Levels of Husbands' Knowledge and Support (n = 186)

| Variable | Category | Frequency (n:186) | Percentage (%) |
|------------------------|------------------------|-------------------|----------------|
| Education | Elementary–Junior High | 33 | 17,7 |
| | Senior High | 127 | 68,3 |
| | Diploma/Bachelor | 14 | 7,5 |
| | Post Graduate | 12 | 6,5 |
| Occupation | Private Employee | 97 | 52,2 |
| | Others | 89 | 47,8 |
| Knowledge Level | Low | 94 | 50,6 |
| | Moderate | 43 | 23,1 |
| | High | 49 | 26,3 |
| Support Level | Low | 63 | 33,9 |
| | Moderate | 63 | 33,9 |
| | High | 60 | 32,2 |

The distribution of husbands' knowledge and support levels is also presented in **Table 1**. More than half of the respondents demonstrated a **low level of knowledge (50.5%)**, while 23.1% had a moderate level and 26.3% had a high level of knowledge. Similarly, husbands' support levels were relatively evenly distributed, with **33.9% categorized as low, 33.9% as moderate, and 32.3% as high**.

Table 2 shows the result of the Spearman correlation test, indicating a moderate but statistically significant positive relationship between husbands' knowledge and their support toward primigravida wives.

Table 2. Correlation Between Husbands' Knowledge and Support (Spearman Test)

| Variable | ρ (Spearman) | p-value | Interpretation |
|-----------------------------|-------------------|---------|---|
| Knowledge × Husband Support | 0.255 | 0.00044 | Significant positive correlation (moderate) |

The relationship between husbands' knowledge and support was examined using **Spearman's rank correlation test**. As shown in **Table 2**, the analysis revealed a **significant positive correlation** between husbands' knowledge and support for their primigravida wives ($\rho = 0.255$; $p < 0.001$). This finding indicates that higher levels of husbands' knowledge are associated with stronger support provided during pregnancy, although the strength of the correlation was **moderate**.

4 Discussion

The findings of this study indicate a significant positive relationship between husbands' knowledge and their support for primigravida wives ($\rho = 0.255$; $p < 0.001$). This correlation suggests that an increase in husbands' knowledge tends to enhance the informational, emotional, appraisal, and instrumental support received by their wives.

The result reinforces the theoretical understanding that paternal literacy serves as a key factor in shaping supportive behavior during pregnancy.

1. Education and Father Involvement

The majority of husbands in this study had a senior high school education (68.3%) and worked as private employees (52.2%). This finding aligns with numerous studies highlighting paternal education as a major determinant of supportive behavior toward wives during pregnancy. Large cohort studies have demonstrated that a father's education level influences maternal health practices, such as adherence to nutritional supplementation and breastfeeding duration [7, 8]. In the Indonesian context, previous studies reported that husbands with secondary or higher education are more likely to accompany their wives during antenatal care (ANC) visits [9]. Education not only improves cognitive ability but also broadens access to health information and shapes fathers' perception of responsibility in supporting their wives throughout pregnancy [10, 11]. Thus, the respondent profile dominated by men with secondary education reflects the general condition of semi-urban communities, where health literacy remains uneven. This situation highlights the need for context-specific and adaptive educational approaches to increase fathers' understanding and engagement in maternal health.

2. Knowledge and Paternal Support

The distribution of husbands' knowledge low (50.5%), moderate (23.1%), and high (26.3%) demonstrates a substantial knowledge gap regarding fathers' roles during pregnancy. International studies consistently indicate that husbands' knowledge is a strong predictor of paternal involvement. A community-based study in Ethiopia [12] found that higher knowledge about birth preparedness was significantly correlated with planned participation and actual support toward wives. Similarly, [13] emphasized that men's educational needs during the prenatal period include motivation, role awareness, and practical information underscoring the importance of father-targeted educational programs.

The moderate positive correlation observed in this study is consistent with literature suggesting that knowledge is one of the primary determinants of effective social support [7, 10]. According to the *knowledge-behavior model*, greater knowledge enhances self-efficacy and role awareness, which in turn promote tangible supportive behaviors toward partners during pregnancy.

3. Impact of Husband Support on Pregnancy Outcomes

Adequate paternal support not only strengthens the mother's emotional well-being but also contributes to better perinatal outcomes. The *Boston Birth Cohort Study* [14] found that lower paternal support was associated with an increased risk of pre-term birth. Other research further highlights that father involvement during pregnancy and the postnatal period acts as a protective factor against maternal stress and fosters long-term family bonding [7]. The findings from Magelang reinforce these arguments suggesting that improving paternal literacy can serve as a strategic pathway to enhance husband support and reduce the risk of pregnancy complications. Consequently, integrating father education into routine antenatal care and community health programs could have lasting benefits for both maternal and infant health.

Recommendations

Based on the findings of this study and comparison with global literature, the following strategic recommendations are proposed for implementation at the level of primary health services and local policy development:

1. **Integration of Husband Education into Antenatal Services at Puskesmas**
Adapting the findings of Abbaspoor et al. (2023), which demonstrated a significant improvement in mothers' perceived social support following postnatal education programs for husbands, similar initiatives could be implemented in the Magelang context. Couple-based antenatal sessions can be incorporated into routine ANC schedules, focusing on topics such as pregnancy danger signs, maternal nutrition, birth preparedness, and emotional support [15].
2. **Development of Father-Friendly Educational Materials**
Consistent with recommendations by Xue et al. (2018) and Palioura et al. (2023), educational materials should be practical, accessible, and culturally relevant: a) Use infographics, short educational videos, and *micro-learning content* delivered through WhatsApp or social media [10]. b) Provide online modules (*father-friendly modules*) using simple language and real-life examples adapted from Indonesian family contexts [11].
3. **Community and Cross Sector Based Approaches**
Collaboration with community health workers, local leaders, and organizations can extend the reach of male-focused education. The *Ayah Siaga Kehamilan* (Father Readiness Program) can serve as a community-based pilot model at *puskemas* level, targeting improvements in husbands' knowledge and support as measurable indicators of program success [15].
4. **Policy and Further Research**
Local governments and District Health Offices should include father involvement as a key indicator in maternal and child health programs. Future studies are encouraged to apply quasi-experimental or randomized controlled designs to evaluate the effectiveness of husband education interventions on measurable maternal outcomes such as ANC visit frequency, complications, or infant birth weight.

Contextual Implications for Magelang, Indonesia

The relatively low paternal literacy identified in Magelang highlights the urgent need for educational and community-based interventions targeting fathers. Implementing *father classes* within *puskemas* services could be an effective strategy to increase awareness, knowledge, and participation among husbands. As demonstrated by Abbaspoor et al. (2023), short and structured educational programs for husbands can significantly improve mothers' perceived social support and strengthen spousal cooperation during pregnancy. Integrating similar initiatives at the community level has the potential to reduce *fatherless function* and reinforce family-centered maternal care models within Indonesia's primary health system [15].

Strengths and Limitations

This study also contributes valuable empirical evidence to the growing field of paternal involvement research in Southeast Asia. Its strengths lie in the use of validated instruments encompassing four dimensions of support—informational, emotional, appraisal, and instrumental as well as an adequate and representative sample size drawn from multiple *puskesmas*. However, certain limitations should be acknowledged. The cross-sectional design restricts causal inference, and responses were based on self-reported measures that may be influenced by social desirability bias. Additionally, the tertile-based classification used to categorize knowledge and support levels may vary if different cut-off points are applied. Future research employing longitudinal or quasi-experimental designs is therefore recommended to better identify causal relationships and assess the effectiveness of tailored educational interventions on father involvement and maternal health outcomes.

5 Conclusion

This study demonstrated a significant positive relationship between husbands' knowledge and their support for primigravida wives ($\rho = 0.255$; $p < 0.001$). The findings confirm that higher levels of paternal knowledge are associated with stronger emotional, informational, appraisal, and instrumental support provided to pregnant wives. These results underscore the importance of integrating husband-focused education and empowerment programs into antenatal care services to enhance paternal literacy and prevent fatherless function at both family and community levels. Strengthening father involvement through structured educational interventions may serve as an effective strategy to improve maternal well-being and reinforce family-centered maternal care systems in Indonesia. Furthermore, these findings may inform the development of father-inclusive maternal health policies and programs in similar primary health care settings.

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