

The Impact of Paternal Support on Maternal Perception During Pregnancy

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ABSTRACT

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Paternal involvement in maternal health is a critical yet often underexplored factor in enhancing antenatal care (ANC) attendance and pregnancy outcomes. This study aimed to examine how paternal support—across emotional, instrumental, informational, and appraisal dimensions—shapes maternal perception during pregnancy and influences ANC attendance. A quantitative, cross-sectional study was conducted among 38 couples of pregnant women attending Poncol Primary Health Center in Semarang, Central Java, Indonesia. Using the FSDP's structured questionnaire, the study assessed four dimensions of paternal support. Findings revealed that father involvement varied across support types, with higher levels of emotional and instrumental support positively associated with ANC attendance. Moreover, the consistency of perceived support significantly influenced maternal perception. In conclusion, maternal perception of paternal support is closely linked to ANC-seeking behavior and the overall pregnancy experience. Enhancing father engagement through targeted, culturally responsive interventions may foster improved outcomes for both mothers and infants.

Introduction

Indonesia continues to face significant challenges in maternal health, with a maternal mortality rate reaching 189 deaths per 100,000 live births—surpassing the national target of 183 and falling considerably short of the Sustainable Development Goal (SDG) target of 70 by 2030 (Kementerian Kesehatan Republik Indonesia, 2024; World Health Organization, 2023). Despite efforts to improve access and quality of maternal care at the primary health level, gaps remain in ensuring consistent antenatal care (ANC) attendance and positive pregnancy outcomes. One underexplored yet potentially influential factor in maternal health behavior is paternal involvement. Emerging research emphasizes the importance of father support in shaping maternal decisions and behaviors during pregnancy (Ditekemena et al., 2012; Safitri & Elda, 2025;

Royal College of Midwives, 2024). However, the extent to which fathers' support across emotional, instrumental, informational, and appraisal dimensions is perceived by mothers and translates into improved ANC attendance and outcomes remains insufficiently understood (Syam & Musni, 2022; Redshaw & Henderson, 2013). Understanding this dynamic is crucial in designing interventions that not only engage mothers but also strengthen the role of fathers in maternal health (Kementerian Kesehatan Republik Indonesia, 2024; World Health Organization, 2023).

Research increasingly highlights that male involvement, particularly during pregnancy, can significantly influence maternal health behaviors, including antenatal care (ANC) attendance, nutrition, and emotional well-being. Fathers who are engaged and supportive

contribute not only to shared decision-making but also to the continuity of care throughout pregnancy. Paternal support can be understood across four key dimensions: emotional support (providing empathy and reassurance), instrumental support (offering practical help such as transportation or financial assistance), informational support (sharing or facilitating access to health knowledge), and appraisal support (affirming and validating maternal decisions). Each dimension holds potential to impact maternal motivation and access to services, yet the degree to which mothers perceive and respond to this support varies widely depending on socio-cultural, relational, and systemic factors (Ditekemena et al., 2012; Safitri & Elda, 2025; Royal College of Midwives, 2024).

According to the World Health Organization (2016), antenatal care should ideally consist of a minimum of eight contacts to ensure a positive pregnancy experience and reduce adverse outcomes. However, in many low- and middle-income countries (LMICs), including Indonesia, antenatal visit coverage remains uneven. A multi-country analysis by Tikmani et al. (2019) found that regional and socioeconomic disparities significantly influence ANC attendance, suggesting that interventions must be context-specific and address both access and awareness (World Health Organization, 2016; Tikmani et al., 2019). Antenatal care is a critical intervention for maternal health. In Central Java, antenatal visits (K1, K4, K6) show varied trends. While K1 visits achieve full coverage, K4 visits have declined slightly, with a dropout rate of 5.8%. This indicates gaps in maternal healthcare access, particularly among mothers whose pregnancies were identified after the first trimester. Although Central Java surpasses national averages in antenatal coverage, disparities across regions emphasize the need for continued intervention and targeted support (Laksono et al., 2022; Lisnawati et al., 2019). First-time mothers (primigravida) often lack prior experience with pregnancy and childbirth, making them more reliant on family

support, particularly from their husbands. Active paternal involvement can ease the transition into motherhood by offering emotional stability and guidance, thereby encouraging consistent antenatal care (ANC) attendance and promoting overall maternal well-being. Enhancing education and awareness among families about the importance of this support can significantly improve maternal health outcomes.

This study aims to assess paternal support during pregnancy by examining both father and maternal perceptions across four dimensions: emotional, instrumental, informational, and appraisal. It further analyzes how this support patterns influence antenatal care (ANC) attendance and pregnancy outcomes. Understanding the husband's role in maternal health decisions can inform strategies to strengthen support systems and improve maternal and infant well-being.

Methods

Study design and sampling method

This observational cross-sectional study, conducted at *Puskesmas Poncol*, Semarang City from February to April 2024, involved 38 couples selected through consecutive sampling. Inclusion criteria targeted fathers in their first marriage with primigravida wives in the second trimester, and mothers who had attended at least two ANC visits.

Instruments

The Father Support During Pregnancy (FSDP) instrument by Azniah Syam et al. (2022), comprising 10 validated items across emotional, instrumental, informational, and appraisal dimensions, was used to assess paternal support.¹⁰ Responses were measured on a 5-point Likert scale, yielding total scores from 10 to 50; scores ≥ 40 indicated strong support and positive maternal perception, while scores < 40 reflected insufficient support. A total of 38 married couples were selected through consecutive sampling. Inclusion criteria included husbands in their first marriage and wives in the second or third

trimester who had attended at least two ANC visits.

Statistical Analysis

Data were analyzed using SPSS Statistics 25.0. Normality was assessed with the Shapiro-Wilk test, revealing non-normally distributed data. Consequently, Spearman correlation was used for bivariate analysis of ratio-scale variables. Additional tests included Chi-Square and Mann-Whitney. No significant correlations were observed ($p > 0.05$).

Ethical Approval

The study receives ethical approval from the Health Research Ethics Commission (KEPK) of the Faculty of Medicine, Universitas Diponegoro, under approval number 024/EC/KEPK/FK-UNDIP/II/2025.

Result and Discussion

Result

This study examines 38 couples who fulfill the inclusion criteria. Interviews are conducted after their antenatal visits at Poncol Health Center. To minimize bias, fathers and mothers are interviewed separately, ensuring each partner can independently share their perspectives.

Table 1. Spouses Characteristics

Characteristics	Father <i>n</i> (%)	Mother <i>n</i> (%)
Age (year)		
15-20	1 (2,6)	2 (5,3)
21- 30	14 (36,8)	21 (55,3)
31- 40	17 (44,7)	13 (34,2)
41 - 50	5 (13,2)	2 (5,3)
≥51	1 (2,6)	-
(mean, SD) yr	33±8 yr	29,5±5, 8 yr
Gestational age		
Trisemester 2	-	17 (44,7)
Trisemester 3	-	21

		(55,3)
Formal Education		
Elementary	3 (7,9)	1 (2,6)
Junior	7 (18,4)	4 (10,5)
Senior	17 (44,7)	25 (65,8)
Diploma	3 (7,9)	8 (21,1)
Undergraduate	8 (21,1)	
Employment		
None/house wife	-	14 (36,8)
Labour	8 (21,1)	3 (7,9)
Merchant	6 (15,8)	2 (5,3)
Government	2 (5,3)	3 (7,9)
Entrepreneur	22 (57,9)	16 (42,1)
Accompany ANC		
0-5x	20 (52,6)	-
≥ 6x	18 (47,4)	-
Visiting ANC		
1-5 x	-	17 (44,7)
≥ 6x	-	21 (55,3)

Most fathers are aged 31–40 years, with a mean age of 33 ± 8 years. High school serves as the highest education level for 44.7%, and 57.9% work in the private sector. More than half of father (52.6%) accompany their partners to 0–5 antenatal care visits.

The majority of mothers (55.3%) are in their third trimester, with an average age of 29.5 ± 5.8 years. High school is the highest education level for 65.8%, and 42.1% are privately employed. A substantial portion (55.3%) of moms' attend six or more ANC visits.

Table 2. Correlation Factors Related to Frequency of Visits

Variable X	Variable Y	Pearson (r)	p-value
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<i>Gestational age</i>		0,656	0,000
<i>Mother's Age</i>		0,179	0,281
<i>Father's Age</i>		-0,007	0,965
<i>Father Accompany ANC</i>	<i>Frequency of Antenatal Visits</i>	0,839	0,000
<i>Fathers' Total FSDP Score</i>		-0,022	0,897
<i>Mothers' Total FSDP Score</i>		0,865	0,029

The frequency of ANC visits is significantly influenced by several interrelated factors both moms' and fathers'. Gestational age shows a positive correlation with ANC attendance ($r = 0.656$; $p = 0.000$), indicating that women in later pregnancy stages tend to access services more frequently. Paternal involvement, particularly a father's direct participation in ANC visits, is strongly associated with higher maternal attendance ($r = 0.839$; $p = 0.000$). Notably, maternal perception of paternal support—encompassing emotional, instrumental, informational, and appraisal dimensions—also demonstrates a strong correlation with ANC visit frequency ($r = 0.865$; $p = 0.029$), underscoring the influential role of perceived father support in promoting consistent antenatal care.

Table 3. Correlation of Father and Mother Dimensions of Support

<i>Dimension</i>		<i>Mean SD</i>	<i>Min-Max</i>	<i>r Spearman</i>	<i>p-value</i>
<i>Emotional</i>	<i>Father</i>	13,16 ± 1,81	7-15	0,501	0,001
	<i>Mother</i>	13,11 ± 1,93	9-15		
<i>Instrumental</i>	<i>Father</i>	13,39 ± 2,30	5-15	0,534	0,001
	<i>Mother</i>	13,63 ± 2,15	3-15		
<i>Information</i>	<i>Father</i>	8,61 ± 1,67	2-10	0,529	0,001
	<i>Mother</i>	8,21 ± 1,45	4-10		
<i>Appraisal</i>	<i>Father</i>	8,71 ± 1,11	6-10	0,383	0,017

<i>Mothers' Total FSDP Score</i>	8,34 ± 1,41	5-10		
<i>Father's Total FSDP Score</i>	43,87 ± 4,99	27 - 50		
<i>Mother's Total FSDP Score</i>	43,76 ± 4,78	29 - 50	0,529	0,001

The Spearman correlation analysis demonstrates positive and statistically significant associations between paternal support and maternal perception across all four measured dimensions: emotional, instrumental, informational, and appraisal. These results suggest that as fathers engage more consistently in supportive behaviours, mothers are more likely to perceive higher levels of support. The total support score presents varying correlation strengths, from weak to strong, indicating that different forms of support are internalized differently by mothers depending on context and experience.

Table 4. Association Between Paternal Support and Maternal Perception During Pregnancy

		<i>Mother's Perception</i>				
		<i>Good (≥40)</i>	<i>Less (<40)</i>	<i>Total</i>	<i>PR (CI)</i>	<i>p-value</i>
<i>Father's support</i>	<i>Good (≥40)</i>	28	4	32	2,625 (0,840 - 9,201)	0,012
	<i>Less (<40)</i>	2	4	6	—	

The cross-tabulation shows a statistically significant association between father's support and maternal perception ($p = 0.012$). Among mothers with a positive perception (score ≥ 40), the majority (87.5%) report receiving strong paternal support. Conversely, among those perceiving lower levels of support (< 40), 66.7% are also partnered with fathers who scored lower in overall support. The prevalence ratio ($PR = 2.625$; 95% $CI: 0.840-9.201$) suggests that mothers are over twice as likely to have a positive perception when paternal support is strong, although the wide confidence interval indicates variability in effect size.

Discussion

This study highlights the significant role of paternal support in shaping maternal perceptions and influencing ANC attendance. The demographic characteristics of participants provide important context: most fathers are aged 31–40 years, while mothers are predominantly younger, aged 21–30 years. This age distribution may reflect generational differences in communication and caregiving expectations, which can influence how support is expressed and perceived within the couple dynamic (Redshaw & Henderson, 2013). Educational attainment is generally moderate, with the majority of both fathers and mothers having completed senior high school. This level of education may contribute to a basic understanding of maternal health needs, yet may not fully equip couples with the knowledge or confidence to navigate complex health systems or fully engage in shared decision-making).⁵

Employment patterns also shape the support dynamic. Over half of the father work in the private sector or as entrepreneurs, which may offer flexible schedules but also introduce economic pressures that limit consistent involvement. Despite this, nearly half of the fathers accompany their partners to six or more ANC visits, suggesting a strong commitment to physical presence and shared responsibility. This aligns with previous findings that paternal involvement, particularly in the form of attending ANC visits is positively associated with maternal health-seeking behavior and improved pregnancy outcomes (Tokhi et al., 2018; Foglabenchi et al., 2024).

The study's findings further reveal that maternal perception of paternal support is significantly associated with ANC attendance. Mothers who perceive higher levels of emotional, instrumental, informational, and appraisal support from their partners are more likely to attend ANC visits regularly. This supports the conceptual framework that perceived support, not just actual behavior, plays a critical role in motivating maternal engagement with health services (Iskandar & Syam, 2024). The strong

correlation between perceived support and ANC attendance ($r = 0.865$; $p = 0.029$) underscores the importance of fostering not only paternal involvement but also meaningful, affirming interactions that mothers recognize and value.

Moreover, the analysis of support dimensions shows that while all four types: emotional, instrumental, informational, and appraisal, are positively associated with maternal perception, the strength of these associations varies. This suggests that mothers may prioritize or respond more strongly to certain forms of support depending on their individual needs, cultural expectations, or relationship dynamics. For instance, emotional support may be more impactful in reducing anxiety, while instrumental support (e.g., transportation or financial help) may directly facilitate access to ANC services (Comrie-Thomson et al., 2015).

These findings are consistent with global literature emphasizing the benefits of male involvement in maternal care. Studies have shown that when fathers are engaged, women are more likely to initiate ANC early, attend more visits, and experience better psychosocial outcomes (Kementerian Kesehatan Republik Indonesia, 2024; Ditekemena et al., 2012; Bhatta, 2013). However, cultural norms and gender roles can either facilitate or hinder this involvement. In some contexts, men may view pregnancy care as a woman's domain, limiting their participation to financial provision (Kululanga et al., 2011). Addressing these barriers requires culturally sensitive interventions that redefine paternal roles and promote shared responsibility in reproductive health.

In light of these insights, the study reinforces the need for health programs to actively involve fathers, not only as companions but as informed, empathetic partners. Strategies such as couple-based ANC education, flexible clinic hours, and community campaigns that normalize male involvement can help bridge the gap between intention and perception. Ultimately, enhancing paternal support has the potential to improve maternal experiences,

increase ANC utilization, and contribute to better pregnancy outcomes.

Building on the earlier discussion of participant characteristics and perceptions, the Pearson correlation results offer further insight into the relationships between demographic and behavioral variables and antenatal care attendance. Gestational age demonstrates a moderate positive correlation with ANC visit frequency ($r = 0.656$; $p = 0.000$), indicating that as pregnancy progresses into later trimesters, mothers are more likely to attend ANC consistently. This aligns with national trends and reinforces the importance of sustained health system engagement throughout pregnancy stages (Bhatta, 2013).

Interestingly, mother's age has a weak, non-significant correlation with ANC visits ($r = 0.179$; $p = 0.281$), while father's age shows virtually no correlation ($r = -0.007$; $p = 0.965$), suggesting that age alone does not predict engagement or support. This finding underscores the need to focus more on behavior and relational dynamics than demographic factors alone.

A particularly notable finding is the strong positive correlation between fathers accompanying visits and maternal ANC attendance ($r = 0.839$; $p = 0.000$). This suggests that visible, active paternal involvement is a critical predictor of regular maternal healthcare utilization, supporting the idea that partner presence can directly facilitate or encourage care-seeking behavior (Tokhi et al., 2018).

Surprisingly, the father's total FSDP (Father Support During Pregnancy) score does not show a significant correlation with ANC visits ($r = -0.022$; $p = 0.897$), while the mother's perception of paternal support shows a very strong and significant correlation ($r = 0.865$; $p = 0.029$). This emphasizes that it is not merely the father's self-reported support behaviors, but how those actions are perceived and internalized by the mother, that truly influences her engagement with antenatal services. Such a distinction highlights the psychological and relational components of maternal motivation, which may

not always be captured through paternal self-assessment alone (Iskandar & Syam, 2024).

Despite these associations, challenges remain in paternal involvement. Work commitments, limited awareness of the importance of ANC, and cultural norms may hinder fathers from accompanying mothers to check-ups. Traditional perceptions—where pregnancy care is seen as primarily a maternal or female responsibility, may also contribute to lower participation rates. Addressing these barriers through education, workplace policies, and community engagement can foster a more supportive environment for expectant mothers.

As presented in Table 3, the analysis reveals significant positive correlations between the father's and mother's scores across emotional, instrumental, informational, and appraisal support dimensions. Emotional support demonstrates a strong correlation ($r = 0.501$; $p = 0.001$), underscoring how fathers' empathy and reassurance contribute to maternal psychological comfort, especially during late pregnancy stages, when anxiety levels tend to rise.^[12] Instrumental support, including accompanying ANC visits and providing practical assistance, shows the highest correlation ($r = 0.534$; $p = 0.001$), reinforcing the importance of tangible actions in fostering maternal security and readiness for childbirth (Royal College of Midwives, 2024).

Similarly, informational support ($r = 0.529$; $p = 0.001$) indicates that fathers who engage in health-related conversations and share relevant knowledge help mothers feel better prepared—reflecting findings from previous studies on male involvement in maternal care.¹¹ While appraisal support registers the lowest yet still significant correlation ($r = 0.383$; $p = 0.017$), it highlights the role of affirmation and shared decision-making in enhancing maternal self-efficacy.¹³ The total FSDP score also correlates significantly with maternal perception ($r = 0.529$; $p = 0.001$), aligning with literature suggesting that mothers internalize support not just based on quantity, but how it is emotionally experienced and valued (Redshaw & Henderson, 2013; Tokhi et al., 2018).

These findings are consistent with the study's aim, which emphasizes that perceived paternal support—not merely its presence—is a key determinant of maternal engagement with ANC services. As supported by Tokhi et al., meaningful male involvement improves service utilization and maternal outcomes. However, as observed by Foglabenchi et al., cultural norms can mediate how support is received, reinforcing the need for culturally tailored interventions that help fathers engage more effectively and in ways that are visible and validating to mothers. Ultimately, enhancing both the quality and perception of paternal support may lead to safer pregnancies and improved maternal well-being.

Table 4 further reinforces the central finding of this study: maternal perception of paternal support is significantly associated with the quality and consistency of that support. Among mothers who report a positive perception (score ≥ 40), 87.5% are partnered with fathers who also demonstrate high support scores. In contrast, among those with lower perceptions, two-thirds are paired with fathers who score poorly in support. The association is statistically significant ($p = 0.012$), and the prevalence ratio (PR = 2.625; 95% CI: 0.840–9.201) suggests that mothers are over twice as likely to perceive strong support when fathers actively engage across emotional, instrumental, informational, and appraisal dimensions. Within the Father Supporting Dimension, paternal support is categorized into four key aspects:

- **Emotional Support.** Fathers who provide care and affection help reduce maternal stress and anxiety, especially during the third trimester. Active emotional support fosters reassurance and confidence, allowing mothers to feel valued and secure. A strong positive correlation ($r = 0.501$; $p = 0.001$) indicates that greater paternal involvement enhances maternal perception of emotional support, easing concerns during pregnancy (Lundberg & Phoosuwat, 2025; Fisher & Glangeaud-Freudenthal, 2023).

- **Instrumental Support.** Fathers assist practically by helping with household tasks,

accompanying mothers to ANC visits, and providing presence during labor. This dimension shows the strongest correlation ($r = 0.534$; $p = 0.001$), highlighting that tangible support significantly benefits maternal health.²⁰ The *SIAGA* (*Siap Antar Jaga*) program reinforces the importance of paternal readiness for childbirth, addressing delays in emergency care—one of the key contributors to maternal mortality, as identified in Juniarti's study (Juniarti et al., 2012; Ridwan & Shaluhayah, 2018).

- **Informational Support.** Fathers who seek knowledge about pregnancy and childbirth by attending medical consultations, reading educational materials, and sharing relevant information help mothers feel more prepared. This aspect has a strong correlation ($r = 0.529$; $p = 0.001$), though efforts to enhance paternal involvement in pregnancy education remain crucial (Cerqueira & Zangão, 2024; Kotelchuck, 2024).

- **Appraisal Support.** Encouragement, positive reinforcement, and shared decision-making improve maternal psychological well-being. While this dimension shows a moderate correlation ($r = 0.383$; $p = 0.017$), paternal engagement in creating a supportive environment helps mothers navigate emotional and physical challenges more effectively (Kotelchuck, 2024; Liverpool et al., 2021).

This finding aligns with earlier correlation results, where maternal perception—not paternal self-report—showed the strongest relationship with ANC attendance. It underscores that the effectiveness of paternal support is shaped not only by action but by how those actions are received and valued. As Tokhi et al. note, male involvement improves maternal health behaviors when it is visible, affirming, and multidimensional (Tokhi et al., 2018). Redshaw and Henderson emphasize that paternal engagement enhances maternal service uptake and emotional well-being, while the Royal College of Midwives highlights the importance of culturally sensitive strategies to involve fathers meaningfully in maternity care (Royal College of

Midwives, 2024; Syam & Musni, 2022; Tokhi et al., 2018). Foglabenchi et al. further argue that perceptions of male involvement are shaped by gender norms, which influence how support is expressed and interpreted (Foglabenchi et al., 2024). Additional studies confirm that male involvement is associated with improved maternal outcomes, including ANC attendance, skilled birth utilization, and emotional well-being (Alio et al., 2013; Yargawa & Leonardi-Bee, 2015; Mangeni et al., 2012; Gessesse et al., 2024). These findings collectively support the need for targeted interventions that promote father engagement through education, policy, and community-based strategies.

Conclusion

This study affirms the pivotal role of paternal support in promoting maternal well-being and adherence to antenatal care (ANC). Fathers who actively provide emotional, instrumental, informational, and appraisal support positively influence maternal perception and ANC attendance, ultimately contributing to safer, more supported pregnancies. A strong correlation between paternal involvement and maternal perception highlights that meaningful support, not just presence; is essential to improving maternal and fetal health outcomes.

To enhance father involvement, comprehensive strategies such as educational initiatives, supportive workplace leave policies, and culturally sensitive community programs should be prioritized. Raising awareness of the father's role in pregnancy and addressing barriers such as time constraints and traditional norms can foster more inclusive and responsive support systems. Strengthening paternal engagement in this way ensures that expectant mothers receive the emotional and practical care necessary for a healthier pregnancy experience.

Conflicts of Interest

The authors confirm that this study was conducted independently and objectively, with

no conflicts of interest that could influence the findings or conclusions.

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Author Contributions

RNK and RKK conceptualized and designed the study framework, coordinated and carried out the data collection process, and contributed substantively to the initial drafting of the manuscript. RNK and SB led the statistical analysis and interpretation of the collected data. Subsequently, RNK, RKK, and SB collaboratively engaged in reviewing and refining the data analysis, provided critical feedback on the manuscript's content and structure, and collectively approved the final version for publication.

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