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RESEARCH ARTICLE

How Family and Health Cadres Enable Routine Integrated Antenatal Care (ANC) Attendance Among Pregnant Women: A Descriptive Phenomenological Study in Jombang, Indonesia

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Abstract

Integrated Antenatal Care (ANC) depends on sustained attendance across pregnancy, yet routine participation remains uneven. This study explored how pregnant women interpret family and health cadre support for maintaining routine Integrated ANC at the Jarak Kulon Primary Health Care Center, Jombang. Routine was defined as attending scheduled Integrated ANC contacts (PHC/Posyandu) and rescheduling any missed appointment within the same month. Using descriptive phenomenology, purposive sampling recruited pregnant women residing in the catchment area who had attended Integrated ANC in the current pregnancy, along with health cadres and key family supporters. Data were collected in March 2025 through in-depth semi-structured interviews (10 pregnant women, 4 cadres, 3 family members), supported by participatory observation and document review, and analyzed iteratively using Miles and Huberman's reduction–display–verification procedures with NVivo. Two interrelated themes were identified. Cadre support functioned mainly as informational and instrumental support—education on ANC and danger signs, schedule reminders (including WhatsApp), home follow-up after missed visits, and assistance navigating access constraints. Family support operated primarily as emotional and instrumental support—reassurance, accompaniment, financial prioritization, and household task adjustments that made attendance feasible. Overall, participants described support as strengthening confidence and capability to keep visits on schedule, consistent with House's (1981) social support dimensions.

Keywords: Health cadre support; family support; pregnant women; integrated antenatal care; descriptive phenomenology

Abstrak. Pelayanan Antenatal Terpadu (ANC) memerlukan kehadiran yang berkelanjutan sepanjang kehamilan, namun partisipasi rutin masih belum merata. Penelitian ini mengeksplorasi bagaimana ibu hamil memaknai dukungan keluarga dan kader kesehatan dalam mempertahankan kunjungan ANC Terpadu yang rutin di Puskesmas Jarak Kulon, Jombang. "Rutin" didefinisikan sebagai menghadiri kontak ANC Terpadu yang terjadwal (Puskesmas/Posyandu) dan menjadwalkan ulang setiap kunjungan yang terlewat dalam bulan yang sama. Dengan menggunakan fenomenologi deskriptif, teknik purposive sampling merekrut ibu hamil yang tinggal di wilayah kerja dan telah mengikuti ANC Terpadu pada kehamilan saat ini, serta kader kesehatan dan anggota keluarga pendukung utama. Data dikumpulkan pada Maret 2025 melalui wawancara mendalam semi-terstruktur (10 ibu hamil, 4 kader, 3 anggota keluarga), didukung observasi partisipatif dan telaah dokumen, lalu dianalisis secara iteratif menggunakan prosedur reduksi–penyajian–verifikasi Miles dan Huberman dengan NVivo. Ditemukan dua tema yang saling terkait. Dukungan kader terutama berfungsi sebagai dukungan informasional dan instrumental–edukasi tentang ANC dan tanda bahaya, pengingat jadwal (termasuk WhatsApp), tindak lanjut ke rumah setelah kunjungan terlewat, serta bantuan menavigasi kendala akses. Dukungan keluarga terutama berfungsi sebagai dukungan emosional dan instrumental–penguatan, pendampingan, prioritas pembiayaan, dan penyesuaian tugas rumah tangga sehingga kunjungan menjadi mungkin. Secara umum, partisipan memaknai dukungan sebagai penguat kepercayaan diri dan kemampuan untuk menjaga kunjungan tetap sesuai jadwal, selaras dengan dimensi dukungan sosial House (1981).

Kata kunci: Dukungan kader kesehatan; dukungan keluarga; ibu hamil; antenatal care terpadu; fenomenologi deskriptif

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INTRODUCTION

Integrated Antenatal Care (ANC) is a cornerstone of maternal and newborn health because it enables timely health promotion, early identification of complications, and appropriate referral throughout pregnancy. Global guidance increasingly emphasizes not only access to ANC but also continuity and adequacy of contacts, as the World Health Organization recommends a minimum of eight ANC contacts to improve maternal and perinatal outcomes and women's experience of care (World Health Organization [WHO], 2016).

Despite sustained national efforts to strengthen primary health care, routine attendance to integrated antenatal care (ANC) remains uneven in many low-resource and rural settings. The World Health Organization (WHO) emphasizes ANC not only as a platform for risk detection and preventive interventions, but also as a pathway toward a "positive pregnancy experience," recommending a minimum schedule of eight contacts to improve outcomes and women's care experience (World Health Organization [WHO], 2016; Tunçalp et al., 2017). Yet, qualitative evidence consistently shows that non-adherence is shaped by intersecting barriers across the "three delays" continuum–delays in deciding to seek care, reaching care, and receiving acceptable care–such as time/opportunity costs, distance and transport constraints, sociocultural expectations about women's domestic roles, stigma dynamics, and health-system factors including long waits and negative provider interactions (Tengera et al., 2025). In Indonesia, similar patterns have been documented in rural contexts: continuity of ANC is influenced not only by service availability but also by women's perceived safety and trust in services, household decision-making, affordability, and the practical feasibility of travel and clinic waiting times (Agus & Horiuchi, 2012; Anggraeni et al., 2023; Shikuku et al., 2020; Silaen et al., 2025).

Social support is therefore a theoretically salient lens for explaining why pregnant women do–or do not–sustain routine ANC attendance, because it specifies mechanisms through which interpersonal resources translate into health behavior (e.g., motivation, confidence, and practical capability). House's typology conceptualizes social support as emotional, informational, instrumental, and appraisal support (House, 1981), providing a parsimonious framework to map how support can reduce psychological burden (emotional), improve risk recognition and decision quality (informational), remove logistical barriers such as transport/time/childcare (instrumental), and strengthen self-efficacy and perceived legitimacy of care-seeking decisions (appraisal). Beyond "having support" as a general condition, classic theory differentiates direct effects (support promoting well-being and coping capacity regardless of stress level) from buffering effects (support mitigating the impact of stressors that would otherwise derail health behaviors) (Cohen & Wills, 1985). This distinction is particularly relevant in pregnancy, where women may face cumulative stressors (financial strain, domestic workload, stigma, prior adverse experiences) that can disrupt planning and follow-through for scheduled ANC; buffering support can operate by reducing perceived threat and enhancing perceived coping resources when stressors arise.

Mechanistic elaboration from broader sociological and behavioral theory further clarifies how these functions may influence routine ANC attendance. Thoits (2011) proposes multiple pathways linking ties/support to health, including social influence and social comparison (norms about "good motherhood" and responsible care), social control (encouragement/reminders that structure routines), sense of control and self-esteem (feeling capable and entitled to seek care), and belonging/companionship (reduced isolation and anxiety when attending services). In maternal care settings, these pathways can manifest concretely as family members legitimizing clinic attendance in household decision-making, husbands or relatives accompanying women to reduce safety and stigma concerns, or cadres providing credible advice and service navigation that lowers uncertainty and increases confidence to attend on schedule. At the psychobiological level, social support is also linked to more favorable stress-related physiological profiles (e.g., neuroendocrine and cardiovascular processes), suggesting another plausible route by which supportive environments may protect coping and behavioral continuity during pregnancy (Uchino, 2006).

Pregnancy-specific evidence aligns with these theoretical propositions. A recent qualitative systematic review shows that women often operationalize "support" as an integrated package of reassurance and empathy, trusted guidance for navigating pregnancy risks, and tangible assistance (finances, mobility, and daily responsibilities), which can directly shape both the decision to seek care and the ability to sustain scheduled attendance (Al-Mutawtah et al., 2023). Importantly, barriers to ANC use in LMIC settings are frequently embedded in social relations, gender norms, and household power dynamics–highlighting why an explicitly social-support lens is necessary to move beyond determinant checklists toward lived mechanisms of routine service engagement (Finlayson & Downe, 2013).

Within community-based maternal health systems, support is frequently delivered through both family networks and community actors, and these sources may function through distinct pathways. Social network research illustrates that informational support (e.g., advice credibility, reminders, and navigation guidance) can influence the timing of ANC initiation and subsequent engagement–highlighting that support operates through concrete behavioral channels rather than generic "encouragement" alone (Comfort et al., 2022). Complementing this, evidence from cluster-randomized evaluation in Mali indicates that proactive community health worker home visits can increase ANC utilization and institutional delivery, suggesting that community-level outreach can reduce access frictions (travel, scheduling uncertainty, missed-visit follow-up) while reinforcing continued attendance (Kayentao et al., 2023). In Indonesia, health cadres are positioned as community intermediaries who can extend the reach of primary care by delivering tailored education, reminders, and linkages between pregnant women and services–potentially translating informational and instrumental support into routine integrated ANC attendance (Erviana et al, 2025; Tahir & Anjarwati, 2025). Taken together, these strands justify examining how family and cadre support are experienced and interpreted by pregnant women as enabling (or constraining) "regular" integrated ANC–particularly in local service ecosystems where logistical burdens, household norms, and health-system responsiveness interact.

However, much of the existing literature remains determinant-focused (i.e., identifying "associated factors") and provides limited insight into the lived mechanisms through which family and cadre support enable women to

sustain routine integrated ANC across pregnancy—especially within a specific primary care catchment area where local norms, access constraints, and service organization interact. In response to this gap, the present study applies a descriptive phenomenological approach to explore the forms, meanings, and perceived mechanisms of family and health cadre support that enable pregnant women to undertake routine integrated ANC visits at the Jarak Kulon Primary Health Care Center, Jombang. Guided by House's social support dimensions, this study aims to generate context-sensitive, mechanism-oriented evidence that can inform community empowerment efforts, cadre capacity-building, and family-engagement strategies to improve routine integrated ANC participation at the primary healthcare level.

METHODS

Design and setting

This study employed a qualitative design with a descriptive phenomenological orientation to explore pregnant women's lived experiences and meanings of support received from health cadres and family members in relation to sustaining routine attendance of Integrated Antenatal Care (ANC). This approach was chosen because the study seeks to describe participants' subjective experiences as they are perceived and lived, while encouraging researchers to practice bracketing (epoché) by documenting prior assumptions and maintaining reflexive field notes throughout data collection and interpretation (Creswell, 2020; Moustakas, 1994). The study was conducted in the service area of the Jarak Kulon Primary Health Care Center (PHC), Jombang Regency, where routine Integrated ANC is delivered through monthly clinic/community activities (including the Pregnant Women Integrated Health Post/Posyandu Ibu Hamil) supported by village midwives and health cadres, with home visits for women unable to attend scheduled sessions.

Participants, sampling, and operational definition

Participants were recruited using purposive sampling to ensure information-rich cases aligned with the study objective. The final sample comprised 17 informants, including 10 pregnant women, 4 health cadres, and 3 family members (husbands or biological mothers). Inclusion criteria for pregnant women were: (a) registered and residing in the Jarak Kulon PHC service area; (b) currently pregnant and able to provide informed consent; (c) having experience with Integrated ANC at the PHC/Posyandu within the current pregnancy; and (d) able to communicate in Indonesian/Javanese (as applicable). Suggested exclusion criteria were: (a) severe medical or psychological conditions that could compromise participation; (b) inability to complete an interview; or (c) refusal to be audio-recorded (if recording is required). Health cadres were eligible if they were active cadres supporting maternal programs in the study area and had direct experience assisting pregnant women with ANC engagement. Family participants were eligible if they were identified by pregnant women as a primary support person involved in ANC-related decisions and/or accompaniment. "routine Integrated ANC attendance" defined as attending scheduled Integrated ANC contacts as recommended during pregnancy, with missed appointments rescheduled within at least monthly attendance or no missed scheduled contacts without rescheduling.

Data collection procedures.

Data were collected in March 2025 in the catchment area of the Jarak Kulon Primary Health Care Center (PHC), Jombang Regency, Indonesia. A multi-source approach was applied consisting of in-depth semi-structured interviews, complemented by participatory observation and documentation review to support methodological triangulation. The interviews were conducted with pregnant women (n = 10), health cadres (n = 4), and family members (n = 3) to capture multiple perspectives on support processes and how these shaped routine attendance of Integrated Antenatal Care (ANC).

Semi-structured interview guides were developed based on House's social support dimensions (emotional, informational, instrumental, and appraisal support) and refined through expert consultation and a brief 2 pilot interviews to improve clarity and cultural appropriateness. Interviews were conducted in PHC/private room/participants' homes depending on participant preference and privacy considerations. Each interview lasted approximately 30–60 minutes, was conducted in Indonesian/Javanese, and was facilitated by interviewer, e.g., trained qualitative researcher/midwifery researcher who was not involved in participants' clinical care to minimize social desirability bias. With participants' permission, interviews were audio-recorded and transcribed verbatim. Transcripts were checked against recordings for accuracy, anonymized using codes (e.g., IH1–IH10 for pregnant women; K1–K4 for cadres; F1–F3 for family members), and complemented with field notes documenting contextual details and initial analytic impressions.

Participatory observation was conducted during 2 Integrated ANC/Posyandu sessions and 2 cadre activities/home-visit interactions to document the service flow, cadre–client interactions, support practices (e.g., reminders, accompaniment, counseling), and contextual barriers/facilitators that could not be fully captured through interviews. Observation notes focused on non-identifying interaction patterns and implementation processes rather than personal clinical details. Documentation review included ANC schedule materials, cadre activity logs, PHC/Posyandu registers, maternal–child health handbook entries, reminder materials to contextualize how "routine" attendance was organized and tracked within the local program.

Data analysis.

Data analysis followed Miles et al. (2014) interactive model, consisting of data reduction, data display, and conclusion drawing/verification, and was conducted iteratively alongside data collection. First, researchers immersed themselves in the data through repeated reading of interview transcripts and observation notes. Initial codes were generated to capture meaning units related to forms and functions of support, barriers to routine attendance, and perceived mechanisms linking support to ANC engagement. Codes were then clustered into categories and themes, with House's dimensions used as sensitizing concepts to organize interpretation while allowing inductive subthemes to emerge from participants' accounts.

Next, thematic matrices and displays were developed to compare patterns across participant groups (pregnant women vs cadres vs family members) and across data sources (interviews vs observations vs documents). Finally, conclusions were drawn and continuously verified by returning to the raw data, checking for internal consistency and discrepant cases, and refining themes to ensure they accurately represented participants' lived experiences. Throughout the process, analytic memos were maintained to document decisions, theme development, and reflexive considerations. Data management and coding were conducted using qualitative software Nvivo.

Ethical considerations

All participants provided written informed consent prior to data collection. Participants were informed about the study purpose, procedures, voluntary participation, and the right to withdraw at any time without penalty. To protect confidentiality, identifying information was removed from transcripts and replaced with participant codes. Audio recordings, transcripts, and field notes were stored securely in password-protected files accessible only to the research team. For observations conducted in community settings, privacy was safeguarded by limiting notes to non-identifying implementation and interactional processes and avoiding collection of personal identifiers beyond what was required.

RESULTS OF STUDY

This study was conducted in the service area of the Jarak Kulon Primary Health Care Center, Jombang Regency, which provides maternal health services through routine Integrated Antenatal Care (ANC) programs and the Pregnant Women Integrated Health Post (Posyandu Ibu Hamil). Each month, village midwives, in collaboration with health cadres, conduct health examinations and educational sessions for pregnant women, as well as home visits for those who are unable to attend the integrated health post. The community in this area is characterized by strong social values; therefore, the roles of family support and health cadre support are crucial in enhancing pregnant women's readiness for childbirth.

Characteristics of Respondents

This study involved a total of 17 informants, consisting of 10 pregnant women, 4 health cadres, and 3 family members (husbands or biological mothers). The pregnant women were aged between 22 and 35 years, with gestational ages ranging from 28 to 38 weeks. Most participants had completed secondary education (senior high school) and were housewives. The interviewed health cadres had between 5 and 10 years of experience in assisting pregnant women, while family members played active roles in providing emotional and logistical support. The characteristics of the main informants are presented in the following table:

Table 1. Characteristics of Pregnant Women Respondents

No	Respondent Code	Age (years)	Gestational Age	Highest Education	Occupation	Parity
1	IH1	23	32 weeks	Senior High School	Housewife	1 child
2	IH2	28	28 weeks	Junior High School	Farmer	2 children
3	IH3	25	30 weeks	Senior High School	Housewife	1 child
4	IH4	31	34 weeks	Midwifery Diploma	Private sector	3 children
5	IH5	22	24 weeks	Junior High School	Laborer	1 child
6	IH6	27	35 weeks	Senior High School	Farmer	2 children
7	IH7	24	36 weeks	Senior High School	Housewife	1 child
8	IH8	29	26 weeks	Primary School	Housewife	3 children
9	IH9	33	38 weeks	Senior High School	Housewife	4 children
10	IH10	26	29 weeks	Senior High School	Trader	2 children

Source: *Primary data (2025)*

Table 2. Characteristics of Health Cadre Respondents

No	Respondent Code	Age (years)	Years of Experience as Cadre	Highest Education	Service Area
1	K1	45	10 years	Senior High School	Village A
2	K2	39	8 years	Senior High School	Village B
3	K3	42	5 years	Senior High School	Village C
4	K4	36	7 years	Junior High School	Village D

Source: *Primary data (2025)*

Table 3. Characteristics of Family Respondents (Husbands/Biological Mothers)

No	Respondent Code	Relationship to Pregnant Woman	Age (years)	Education	Occupation
1	F1	Husband	30	Senior High School	Farmer
2	F2	Biological Mother	55	Primary School	Housewife
3	F3	Husband	34	Junior High School	Laborer

Source: *Primary data (2025)*

Qualitative Data Analysis Findings

Based on in-depth interviews with 10 pregnant women, 4 health cadres, and 3 family members (husbands and parents), data were collected through in-depth interviews and field observations. Thematic analysis yielded two main themes: 1. Health cadre support for pregnant women in ANC examinations; 2. Family support for pregnant women in routine Integrated Antenatal Care (ANC) visits.

1. Health Cadre Support in ANC Examinations

Table 4 presents excerpts from interview transcripts with pregnant women (10 respondents) during the pregnancy period approaching childbirth.

Table 4. Interview Transcripts with Pregnant Women Regarding Health Cadre Support

Respondent Code	Interview Excerpts
IH1	"I am constantly reminded by the health cadre. She said that during pregnancy, routine check-ups are important to monitor fetal development. That's why I always attend according to the Posyandu schedule."
IH2	"The health cadre often comes to my house and invites me to the Posyandu. If I don't have transportation, she sometimes gives me a ride."
IH3	"I only realized the importance of ANC examinations after the health cadre explained it during a health education session at the village hall."
IH4	"The health cadre helped me manage my maternal and child health card and examination records, so I am not confused about my next schedule."
IH5	"I used to be reluctant to attend check-ups, but the health cadre explained that irregular check-ups could be dangerous for the baby. Now I attend regularly."
IH6	"The health cadre is very patient; every month she goes around visiting houses to check on pregnant women."
IH7	"The health cadre often sends reminders via WhatsApp about my ANC schedule."
IH8	"When I felt anxious about the cost of check-ups, the health cadre helped communicate with the midwife so I could still receive ANC services without immediate payment."
IH9	"If I have any complaints, I usually talk to the health cadre first before going to the midwife."
IH10	"I feel cared for because the health cadre often asks about my condition and gives me motivation."

Source: *Primary data (2025)*

The interview findings indicate that the majority of pregnant women experienced positive health cadre support in various forms, including emotional, informational, and instrumental support. Emotional support was demonstrated through attention, empathy, and encouragement provided by health cadres when pregnant women experienced discomfort during pregnancy. Informational support was reflected in cadres' efforts to explain the importance of integrated ANC, warning signs of pregnancy complications, and strategies for maintaining maternal and fetal health. Instrumental support was also strongly perceived, such as assisting pregnant women in accessing health facilities and reminding them of upcoming ANC schedules. In this context, health cadres functioned not only as volunteers but also as facilitators, motivators, and companions who bridged communication between healthcare providers and the community. Their active role contributed to improved compliance with routine ANC visits and enhanced pregnant women's self-confidence in facing pregnancy and childbirth.

2. *Family Support in ANC Examinations*

Family support for pregnant women was reflected through motivation, accompaniment during ANC visits, and financial assistance that facilitated access to healthcare services. Husbands played the most dominant role in decision-making processes, particularly regarding the timing of routine integrated ANC visits and the selection of healthcare facilities. In addition, husbands provided emotional support to ensure that pregnant women felt calm and confident throughout pregnancy. This form of support reflects shared responsibility in safeguarding maternal and fetal health, thereby creating a supportive and harmonious family environment.

Table 5. Interview Transcripts with Pregnant Women Regarding Family Support

Respondent Code	Interview Excerpts
IH1	"My husband always accompanies me to the Primary Health Care Center when it is time for a check-up."
IH2	"Even when we don't have enough money, my husband makes sure I can still attend ANC because he says it's important for our child."
IH3	"My mother reminds me of my ANC schedule and tells me not to be lazy because it's for the baby's health."
IH4	"I usually go by myself, but I leave my child with my parents because my husband is working."
IH5	"My family is very supportive when my husband cannot accompany me."
IH6	"My husband always accompanies me to the Primary Health Care Center for check-ups."
IH7	"Even when finances are limited, my husband ensures I can attend ANC and always accompanies me."
IH8	"My mother-in-law always reminds me when it's time for an ANC check-up."
IH9	"I go with my husband."
IH10	"Sometimes I go alone, sometimes with my husband."

Source: *Primary data (2025)*

Family members served as a reinforcing factor that strongly influenced pregnant women's decisions to attend routine integrated ANC visits. The support provided was not only emotional, such as attention, encouragement, and reassurance, but also practical, including accompaniment to healthcare facilities and assistance in meeting pregnancy-related needs. The presence of family members,

particularly husbands and parents, created a supportive environment that enhanced pregnant women's confidence and comfort throughout pregnancy. This support was a key factor in improving adherence to ANC schedules and maintaining maternal and fetal health.

3. Interview Transcripts with Health Cadres

Table 6. Interview Transcripts with Health Cadres (4 respondents)

Respondent Code	Interview Excerpts
K1	"Our task is to register pregnant women, provide health education, and remind them to visit the midwife every month."
K2	"We collaborate with village midwives. If a pregnant woman has not attended ANC, we visit her home."
K3	"Sometimes the challenge is that women are busy working, so we need to patiently remind them repeatedly."
K4	"We also help communicate when pregnant women face financial difficulties so they can still receive ANC services."

Source: *Primary data (2025)*

4. The Role of Health Cadres as a Bridge Between Pregnant Women and Healthcare Providers

Table 7. Interview Transcripts with Family Members (3 respondents)

Respondent Code	Interview Excerpts
F1 (Husband)	"I always accompany my wife during check-ups so she won't feel afraid. I also want to know the baby's condition."
F2 (Biological Mother)	"I remind my daughter to attend ANC and to eat healthy food."
F3 (Husband)	"At first, I thought one or two check-ups were enough, but after the health cadre explained it, I realized that routine ANC is necessary."

Source: *Primary data (2025)*

DISCUSSION

This study highlights that pregnant women's ability to maintain routine Integrated ANC attendance is shaped by how family members and health cadres translate "support" into day-to-day enabling resources. Rather than functioning as a generic facilitator, support appears to operate through specific pathways consistent with House's typology–emotional reassurance, informational guidance, instrumental assistance (time, transport, finances), and appraisal processes that reinforce confidence and perceived appropriateness of attending care (House, 1981).

A key contribution of these findings is clarifying how informational and appraisal support can reduce uncertainty and strengthen perceived capability to keep scheduled visits. In integrated ANC contexts, women often face competing domestic demands, variable risk appraisal, and inconsistent knowledge about the timing and value of recommended contacts. Cadres' reminders, explanations, and navigation support can therefore be interpreted as mechanisms that improve "actionability" of ANC–turning general advice into concrete steps (when to go, what to bring, whom to contact, and what to do after missed appointments). This interpretation aligns with broader evidence that perceived support and supportive guidance can shape health behavior through improved coping capacity, perceived self-efficacy, and reduced decisional ambiguity, especially under resource constraints (Thoits, 2011; World Health Organization, 2016).

Family support, particularly from husbands or close relatives, can be read primarily as instrumental and decision-reinforcing support that lowers the opportunity costs of attending ANC. In many settings, the barrier is not only service availability but the practical feasibility of attending–transportation, accompaniment, childcare arrangements, and household approval for time away from domestic work. When family members share the logistical burden (financing transport, accompanying the mother, or reorganizing responsibilities at home), routine attendance becomes more achievable and socially "legitimate." These mechanisms are consistent with intervention and review evidence indicating that engaging men and families can improve maternal health behaviors when involvement is operationalized as practical support and shared decision-making rather than symbolic endorsement (Tokhi et al., 2018), and with Indonesian reports that household resources and intra-household decision processes shape completion of recommended ANC contacts (Shikuku et al., 2020; Silaen et al., 2025).

Emotional support should be discussed in proportionate qualitative terms as a stabilizing resource that helps women sustain attendance under stressors (fatigue, anxiety, stigma, or prior negative experiences). Classic stress theory distinguishes direct effects of support (improving well-being and coping) from buffering effects (reducing the disruptive impact of stressors that would otherwise derail health behavior) (Cohen & Wills, 1985). In maternal health, qualitative synthesis similarly shows that women often define "support" as reassurance and empathy coupled with trusted guidance and tangible help–an integrated package that can influence both the decision to attend and the ability to attend on schedule (Al-Mutawtah et al., 2023).

At the community level, cadres appear to function as intermediaries who reduce "friction" between the household and the health system–supporting scheduling, follow-up for missed visits, and linkages to services. This role is consistent with broader community health worker evidence suggesting that proactive outreach (including home visits) can improve maternal service uptake by addressing access barriers, reinforcing continuity, and providing problem-solving support close to households (Kayentao et al., 2023). Importantly, this study's implications are not that cadres "cause" higher attendance, but that participants' narratives plausibly position cadres as navigators/advocates who make attendance more manageable within local social realities (Erviana et al, 2025; Tahir & Anjarwati, 2025).

If the manuscript retains examples of digital messaging (e.g., WhatsApp reminders), the discussion should frame these as an extension of targeted client communication rather than a stand-alone digital health claim. WHO guidance recognizes targeted communication as a promising approach when designed for usability, privacy, and equity, and when integrated with routine services (World Health Organization, 2019). Evidence syntheses also suggest that mHealth reminders and messaging can improve ANC utilization in LMICs, although effects vary by

context, intervention intensity, and implementation quality (Rahman et al., 2022; Kante & Målqvist, 2025). Therefore, any digital component should be discussed as a complementary mechanism–reinforcing cadence, reducing forgetfulness, and supporting rescheduling–while acknowledging risks (unequal phone access, message fatigue, confidentiality concerns) and the continuing need for respectful interpersonal care.

Finally, the manuscript's language should remain appropriately qualitative and analytic: the discussion should emphasize interpretive mechanisms (how support is experienced and enacted) and contextual fit (why these mechanisms matter in Jombang's service ecology), rather than using causal-sounding claims such as "substantial influence" or "critical role." Where possible, interpretive statements should be explicitly linked to the analytic outputs (themes/subthemes) and illustrated by a small number of strategically selected quotations, reserving long quotation tables for supplementary materials.

CONCLUSION

This study indicates that sustaining routine Integrated Antenatal Care (ANC) attendance at the Jarak Kulon Primary Health Care Center is best understood as a relational and practical process shaped by everyday support. Participants' accounts suggest that health cadres facilitate routine attendance primarily by providing understandable health information, organizing and reinforcing schedules through reminders, and actively following up when visits are missed. Family members–especially husbands and close relatives–were described as enabling routine attendance mainly through emotional reassurance and tangible assistance such as accompaniment, help with household responsibilities, and financial prioritization for visits. Overall, the findings support a conclusion that routine ANC attendance is not merely an individual compliance behavior but a pattern that is stabilized through coordinated support within households and the community.

Based on these findings, recommendations should focus on operational improvements directly linked to the observed mechanisms of support. First, the primary health care center and cadres should implement a clear reminder and missed-visit follow-up SOP: maintaining an updated roster of pregnant women and scheduled visit dates, delivering standardized reminders before scheduled contacts, documenting missed visits, and applying a stepwise follow-up pathway (message/call followed by a home visit within an agreed timeframe and rescheduling coordination). Second, strengthen cadre capacity through short, focused training on actionable counseling, respectful communication, and consistent follow-up practices, including guidance on safe and ethical use of messaging for reminders when relevant. Third, integrate a brief family-engagement package into routine ANC contacts to translate family support into concrete actions (transport planning, shared scheduling, household task redistribution, and early response planning for danger signs). These steps operationalize shared responsibility and can reduce practical barriers that commonly interrupt routine attendance.

The conclusions should be interpreted within the qualitative scope of the study. Transferability is limited due to the single-site context, purposive sampling, and the specific participant composition; therefore, findings should be framed as context-sensitive mechanisms rather than generalized effects. Trustworthiness is strengthened by the use of multiple participant groups and multiple data sources; however, the manuscript should present these procedures transparently and consistently. Finally, the conclusion should avoid emphasizing "appraisal support" unless it is clearly evidenced as a distinct and recurring element across the analyzed data; if appraisal does not emerge strongly, it should not be highlighted as a central finding.

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DECRALATION

Ethics approval and consent to participate

This study was conducted in accordance with ethical research principles. Ethical approval was obtained from the relevant ethics committee, and informed consent was obtained from all participants prior to data collection.

Artificial Intelligence-Assisted Technology

Artificial intelligence-assisted technology was not used in the data collection, data analysis, or interpretation of the findings in this study.

Consent for publication

Written informed consent for publication was obtained from all participants.

Availability of data and materials

Not Applicable

Conflicts of interest Statement

Written informed consent for publication was obtained from all participants.

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Authors' contributions

NA played a key role in developing the research concept, designing the study, collecting data, and conducting data analysis. They were also responsible for drafting the manuscript and providing final approval. HA provided methodological support and was involved in data analysis. They conducted critical revisions of the manuscript and approved the final version. VER focused on data interpretation and conducted a literature review. Additionally, they contributed to manuscript editing and gave final approval. DTW was responsible for supervision,

validating the findings, conducting a critical review of the manuscript, and providing final approval.

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REFERENCES

Agus, Y., & Horiuchi, S. (2012). Factors influencing the use of antenatal care in rural West Sumatra, Indonesia. *BMC Pregnancy and Childbirth, 12*, Article 9. https://doi.org/10.1186/1471-2393-12-9

Al-Mutawtah, M., Campbell, E., Kubis, H.-P., & Erjavec, M. (2023). Women's experiences of social support during pregnancy in high-income countries: A qualitative systematic review. *BMC Pregnancy and Childbirth, 23*, 782. https://doi.org/10.1186/s12884-023-06089-0

Anggraeni, M. D., Setiyani, R., Triyanto, E., Iskandar, A., Nani, D., & Fatoni, A. (2023). Exploring the antenatal care challenges faced during the COVID-19 pandemic in rural areas of Indonesia: A qualitative study. *BMC Pregnancy and Childbirth, 23*, Article 179. https://doi.org/10.1186/s12884-023-05495-8

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357. https://doi.org/10.1037/0033-2909.98.2.310

Comfort, A. B., El Ayadi, A. M., Camlin, C. S., Tsai, A. C., Nalubwama, H., Byamugisha, J., Walker, D. M., Moody, J., Roberts, T., Senoga, U., Krezanoski, P. J., & Harper, C. C. (2022). The role of informational support from women's social networks on antenatal care initiation: An egocentric social network analysis of pregnant women in Uganda. *BMC Pregnancy and Childbirth, 22*(1), 708. https://doi.org/10.1186/s12884-022-05030-1

Creswell, J. W. (2020). *Qualitative inquiry and research design: Choosing among five approaches*. SAGE Publications.

Finlayson, K., & Downe, S. (2013). Why do women not use antenatal services in low- and middle-income countries? A meta-synthesis of qualitative studies. *PLOS Medicine, 10*(1), e1001373. https://doi.org/10.1371/journal.pmed.1001373

House, J. S. (1981). *Work stress and social support*. Addison-Wesley.

Kante, M., & Målqvist, M. (2025). Effectiveness of SMS-based interventions in enhancing antenatal care in developing countries: a systematic review. *BMJ open*, *15*(2), e089671. https://doi.org/10.1136/bmjopen-2024-089671

Kayentao, K., Ghosh, R., Guindo, L., Whidden, C., Treleaven, E., Chiu, C., Lassala, D., Traoré, M. B., Beckerman, J., Diakité, D., Tembely, A., Idriss, B. M., Berthé, M., Liu, J. X., & Johnson, A.. (2023). Effect of community health worker home visits on antenatal care and institutional delivery: an analysis of secondary outcomes from a cluster randomised trial in Mali. *BMJ Global Health*, *8*(3), e011071. https://doi.org/10.1136/bmjgh-2022-011071

Shikuku, D. N., Tanui, G., Wabomba, M., Wanjala, D., Friday, J., Peru, T., Atamba, E., & Sisimwo, K.. (2020). The effect of the community midwifery model on maternal and newborn health service utilization and outcomes in Busia County of Kenya: a quasi-experimental study. *BMC Pregnancy and Childbirth*, *20*(1). https://doi.org/10.1186/s12884-020-03405-w

Miles, M. B., Huberman, A. M., Saldana, J. (2014). *Qualitative data analysis: A Methods Sourcebook* (4th ed.). SAGE Publications.

Moustakas, C. (1994). *Phenomenological research methods*. SAGE Publications.

Tahir, D., & Anjarwati, N.. (2025). Program Edukasi dan Pendampingan Kesehatan terhadap Perilaku Ibu Hamil dalam Melakukan Pemeriksaan Antenatal Care. *Mega Buana Journal of Innovation and Community Service*, *3*(2), 66–74. https://doi.org/10.59183/ej33sn78

Rahman, M. O., Yamaji, N., Nagamatsu, Y., & Ota, E. (2022). Effects of mHealth Interventions on Improving Antenatal Care Visits and Skilled Delivery Care in Low- and Middle-Income Countries: Systematic Review and Meta-analysis. *Journal of medical Internet research*, *24*(4), e34061. https://doi.org/10.2196/34061

Erviana, E., Page, M., Amin, M., & Tepi, T. (2025). The Role of Family Support in Improving Pregnant Women's Compliance with Antenatal Care in the Totoli Public Health Center Area. *ancasakti ournal f ublic ealth cience nd esearch*, *5*(2), 216-222. https://doi.org/10.47650/pjphsr.v5i2.1866

Silaen, M., Rahayu, S., Aryanti, I., Prasetyo, A., Wahyuni, S., Wahyono, T. T., Sumarno, Mumfangati, T., Irmawan, Saksono, H., Rachmadhani, A., Nur, Y. H., & Marannu, B. (2025). *Health and socio-economic factors as determinants of antenatal care service access in Indonesia. Clinical Epidemiology and Global Health, 33*, 102010. https://doi.org/10.1016/j.cegh.2025.102010

Tengera, O., Meharry, P., Nkurunziza, A., Babenko-Mould, Y., Rugema, J., Rulisa, S., & Nyirazinyoye, L. (2025). Barriers hindering attendance and adherence to antenatal care visits among women in rural areas in Rwanda: An exploratory qualitative study. *PLOS ONE, 20*(5), e0323762. https://doi.org/10.1371/journal.pone.0323762

Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior, 52*(2), 145–161. https://doi.org/10.1177/0022146510395592

Tokhi, M., Comrie-Thomson, L., Davis, J., Portela, A., Chersich, M., & Luchters, S. (2018). Involving men to improve maternal and newborn health: A systematic review of the effectiveness of interventions. *PLOS ONE, 13*(1), e0191620. https://doi.org/10.1371/journal.pone.0191620

Tunçalp, Ö., Pena-Rosas, J. P., Lawrie, T., Bucagu, M., Oladapo, O. T., Portela, A., & Metin Gülmezoglu, A. (2017). WHO recommendations on antenatal care for a positive pregnancy experience–Going beyond survival. *BJOG: An International Journal of Obstetrics & Gynaecology, 124*(6), 860–862. https://doi.org/10.1111/1471-0528.14599

Uchino, B. N. (2006). Social support and health: A review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine, 29*(4), 377–387. https://doi.org/10.1007/s10865-006-9056-5

World Health Organization. (2016). *WHO recommendations on antenatal care for a positive pregnancy experience*. World Health Organization.

World Health Organization. (2019). *WHO guideline: Recommendations on digital interventions for health system strengthening*. World Health Organization.

ADDITIONAL INFORMATION

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