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Predictors of Contraceptive Use Intention Among Early-Married Women in Three Sub-Districts of Central Java, Indonesia

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Abstract

Early marriage is a persistent public health problem in rural Central Java, Indonesia, where adolescent pregnancy rates exceed the national average. Contraceptive use intention among early-married couples is a key factor in delaying first pregnancy and reducing maternal and neonatal mortality. This study aimed to identify dominant predictors of contraceptive use intention among early-married women in three sub-districts with the highest early marriage prevalence in Central Java, using a combined theoretical framework of the Theory of Reasoned Action (TRA) and the PRECEDE-PROCEED model. A cross-sectional explanatory study was conducted between August and September 2012 among 168 wives aged under 20 years across three purposively selected sub-districts. Variables were operationalized according to the PRECEDE-PROCEED domains: predisposing (knowledge, attitude), enabling (income), and reinforcing factors (spousal, family, and healthcare worker support), as well as cultural norms. Data were collected via structured interviews and analyzed using Chi-square tests and multiple logistic regression. Most respondents (75.6%) intended to use contraception. Four independent predictors were identified: family support (OR=4.565; 95%CI: 1.820–11.547), healthcare worker support (OR=4.515; 95%CI: 1.810–11.261), household income (OR=4.027; 95%CI: 1.616–10.033), and cultural environment (OR=3.951; 95%CI: 1.571–9.938). When all four factors were concurrently present, the predicted probability reached 87.19%. Family support was the strongest determinant, consistent with the reinforcing factor domain of the PRECEDE-PROCEED model. These findings provide empirical support for applying the integrated TRA–PRECEDE-PROCEED framework to adolescent reproductive health programs in rural Indonesia.

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Introduction

Adolescent reproductive health represents a strategically vital domain that commands substantial attention at both national and international policy levels. Early marriage, operationally defined as a matrimonial union occurring prior to the attainment of 18 years of age, constitutes one of the foremost risk factors that compromises the reproductive well-being of young women. At the global scale, approximately 650 million women entered marriage before age 18, with the preponderance of such cases occurring in developing nations, including Indonesia (UNICEF, 2021). Notwithstanding the legislative reinforcement of minimum marriage age requirements through Law Number 16 of 2019, which sets 19 as the minimum age of matrimony for women, the practice of early marriage persists as a multidimensional problem, particularly in rural communities. A multi-level analysis of demographic and health survey data across nine high-fertility sub-Saharan African countries similarly confirmed that early marriage remains a persistent, structurally embedded phenomenon shaped by education, household wealth, and residence, underscoring that this is not a problem unique to any single region but a global determinant pattern warranting context-specific investigation (Belachew et al., 2022).

Data from the Indonesian Demographic and Health Survey (SDKI) indicate that the median age at first marriage among women aged 25–29 years is 19.8 years (BKKBN, 2021), suggesting that approximately half of Indonesian women married before their twentieth birthday. This demographic condition bears direct consequences for the elevated prevalence of adolescent pregnancy, which in turn carries serious obstetric complication risks encompassing preeclampsia, anemia, low birth weight (LBW), preterm labor, and ultimately maternal as well as neonatal mortality (WHO, 2020). The World Health Organization estimates that the risk of pregnancy-related mortality among adolescents aged 15–19 years is approximately twice as high as that observed among women aged 20–24 years.

Consistent with this concern, a cross-sectional study among adolescents in West Java found that demographic factors, including age and educational level, were significantly associated with reproductive health behavior, reinforcing the argument that adolescent reproductive vulnerability in Indonesia is shaped by an interaction of individual and structural determinants rather than knowledge alone (Solehati et al., 2022). This pattern of vulnerability is not confined to Indonesia; a qualitative investigation of adolescent girls' perspectives on child marriage similarly identified limited awareness of its long-term reproductive health consequences, alongside strong familial and community pressure, as central drivers of early union across diverse settings (Naghizadeh et al., 2021).

Several regencies and municipalities in Central Java Province have consistently been identified as having disproportionately high rates of early marriage relative to the national average. In particular, certain rural sub-districts within the province record substantially higher adolescent pregnancy burdens, with the percentage of women aged below 20 years who experienced pregnancy reaching 31.66% in 2023, corresponding to 19,407 documented pregnancy cases in the same age cohort (Dinas Kesehatan Provinsi Jawa Tengah, 2023). It is important to note that the primary dataset utilized in the present study was originally collected in 2012; however, these data are re-examined and reanalyzed in the context of the current study, conducted in 2026, to establish a longitudinal empirical baseline against which more recent epidemiological trends may be assessed. Throughout the period from 2009 to 2012, maternal deaths involving women below the age of 20 were

consistently documented in these areas, averaging 2–5 cases per year of total registered maternal deaths.

The Family Planning (KB) Program constitutes one of the foundational pillars of safe motherhood policy, designed to mitigate adolescent pregnancy risks through the facilitation of pregnancy delay and the promotion of contraceptive utilization. Nevertheless, family planning participation rates among early-wedded couples in high-prevalence sub-districts of Central Java remain critically low. Data from BKKBN indicated that certain rural sub-districts in the province recorded among the highest proportions reaching 3.5% of women of reproductive age (15–19 years) who were non-participants in family planning and expressed a desire for immediate pregnancy, exceeding comparable figures from surrounding areas. This condition is widely attributed to the interplay of multiple determinants, including knowledge levels, attitudes, social support structures, cultural norms, and access to health services.

Intention is the central theoretical construct in the Theory of Reasoned Action (TRA), serving as the primary predictor of behavioral enactment. Contraceptive use intention is shaped by an individual's attitudinal disposition toward the behavior in question and by the subjective norms originating from the social environment (Ajzen, 2020). Complementarily, the PRECEDE-PROCEED model developed by Lawrence Green affirms that health behavior is simultaneously determined by predisposing factors encompassing knowledge, attitudes, values, and cultural norms; enabling factors, which include service accessibility and income levels; and reinforcing factors, represented by familial, spousal, and healthcare worker support (Green & Kreuter, 2005). A recent systematic review confirmed that the PRECEDE-PROCEED model continues to demonstrate strong utility across diverse public health domains, with the majority of applied studies reporting effective outcomes when predisposing, reinforcing, and enabling constructs were addressed jointly rather than in isolation, lending contemporary empirical support to the model's continued applicability beyond its original chronic-disease intervention contexts, including reproductive health (Yang et al., 2025). The integration of these two frameworks offers a comprehensive explanatory architecture that addresses both the individual cognitive dimensions and the multi-level social-structural determinants of contraceptive behavior, a theoretical synthesis that remains underutilized in the Indonesian reproductive health literature.

Despite growing attention to adolescent reproductive health in Indonesia, empirical investigations that simultaneously examine predisposing, enabling, and reinforcing determinants of contraceptive use intention within an integrated TRA–PRECEDE-PROCEED framework among early-married populations remain comparatively scarce. Most existing studies have examined individual-level or single-domain predictors in isolation, limiting their capacity to inform comprehensive intervention design. The present study contributes to this gap in three substantive ways: first, it operationalises a dual-framework integration of TRA and PRECEDE-PROCEED that has not previously been applied to early-married populations in Indonesian rural settings; second, it employs a multivariate analytical design across three sub-districts selected based on the highest documented early marriage prevalence in Central Java, thereby enhancing the generalisability of findings to comparable high-risk contexts; and third, while the primary data originate from 2012, the reanalysis conducted in 2026 allows for a comparative temporal perspective that illuminates the persistent structural determinants of low contraceptive uptake, underscoring the enduring policy relevance of this inquiry. Accordingly, the present study aims to conduct a multivariate analytical examination of the predictors of contraceptive use intention among early-married women across three sub-districts with the highest early marriage prevalence in Central Java, with the overarching objective of generating a robust empirical foundation for the development of contextually appropriate, multi-level health promotion interventions targeting this high-risk population.

Materials and Methods

Study Design

This study employed a quantitative explanatory design with a cross-sectional approach to examine predictors of contraceptive use intention among early-married women. The cross-sectional framework enabled simultaneous measurement of all independent and dependent variables at a single point in time, facilitating both bivariate and multivariate analyses to determine the relative contribution of each predictor. The study variables were conceptually organized according to the three domains of the PRECEDE-PROCEED model, predisposing, enabling, and reinforcing factors in conjunction with the Theory of Reasoned Action, which positions intention as the proximal determinant of health behavior.

Study Setting and Participants

The study was conducted between August and September 2012 across three sub-districts in rural Central Java Province, Indonesia, namely Gabus, Karangrayung, and Ngaringan, purposively selected for having the highest recorded prevalence of early marriage, according to data from the Regional Office of Religious Affairs (URAIS) of the respective administrative regions. The study population comprised wives from newly married couples in which the bride was under 20 years of age at the time of marriage. Total sampling was applied, yielding 168 participants distributed across the three sub-districts (Gabus: n=66; Karangrayung: n=50; Ngaringan: n=52). Participants were eligible if they: (1) were married during the study period and aged below 20 years; (2) were not pregnant at the time of data collection; (3) resided permanently within the study sub-districts; and (4) provided written informed consent.

Data Collection and Measurement

Primary data were obtained through structured interviews administered by trained enumerators using a validated questionnaire. Content validity was established through expert judgment by the research supervisors prior to data collection, ensuring that each item adequately represented its intended construct. Construct validity was subsequently assessed through item-total correlation testing across all seven constructs; the majority of items met the validity criterion, and the few items that did not were retained only where judged substantively important to the construct, while non-essential invalid items were removed. Instrument reliability was assessed using Cronbach's alpha, with all constructs demonstrating good internal consistency ($\alpha = 0.709–0.934$): knowledge ($\alpha = 0.934$, 25 items), attitude ($\alpha = 0.877$, 15 items), spousal support ($\alpha = 0.847$, 13 items), family support ($\alpha = 0.893$, 9 items), healthcare worker support ($\alpha = 0.767$, 8 items), cultural norms ($\alpha = 0.897$, 18 items), and contraceptive use intention ($\alpha = 0.709$, 5 items).

Variables were operationalized across three PRECEDE-PROCEED domains: predisposing factors (knowledge regarding contraception and pregnancy deferral, attitudes toward contraceptive use); enabling factors (household income as a proxy for access to family planning services); and reinforcing factors (spousal support, family support, and healthcare worker support). Cultural norms were additionally measured as a contextual determinant. Sociodemographic characteristics including age, education, and employment status were recorded as covariates. Intention to use contraception served as the dependent variable. All variables were assessed using a Likert-type scale and subsequently dichotomized into favorable and unfavorable categories based on the median score of each variable's distribution.

Statistical Analysis

Data were analyzed in three sequential stages using the Statistical Package for the Social Sciences (SPSS), version 20.0. Univariate analysis was performed to describe the frequency distribution of all study variables. Bivariate analysis using the Pearson Chi-square test ($\alpha = 0.05$) was

conducted to identify variables significantly associated with contraceptive use intention. Variables with p-values <0.25 in bivariate analysis were subsequently entered into a multiple logistic regression model to identify independent predictors and estimate their adjusted odds ratios (ORs) with 95% confidence intervals (95% CIs). The logistic regression model enabled estimation of the joint probability of contraceptive use intention when all dominant predictors were assumed to be favorable simultaneously. Ethical approval for this study was granted by the Health Research Ethics Committee, Faculty of Public Health, Diponegoro University (Approval No. 06/EC/FKM/2013, dated 25 January 2013).

Results and Discussions

Results

Respondent Characteristics

Table 1 presents the frequency distribution of respondent characteristics among the 168 study participants.

Table 1. Frequency Distribution of Respondent Characteristics (n=168)

Characteristic	Category	n	%
Age	< 17 years	55	32.7
	≥ 17 years	113	67.3
Education	Primary (SD)	53	31.5
	Secondary (SMP/SMA)	78	46.4
	Higher Education	37	22.0
Employment	Employed	158	94.0
	Not Employed	10	6.0
Income	> Regional Minimum Wage (≥ Rp 785,000)	103	61.3
	< Regional Minimum Wage (< Rp 785,000)	65	38.7

The majority of respondents were aged 17 years or older (67.3%), had completed junior or senior secondary schooling (46.4%), were in active employment (94.0%), and had a household income exceeding the regional minimum wage (61.3%). These sociodemographic characteristics reflect the broader profile of early-married women in rural Central Java, where employment is predominantly in the informal agricultural sector, and educational attainment remains constrained by early school dropout associated with early marriage.

Distribution of Research Variables

Table 2 presents the frequency distributions of the independent and dependent research variables, organized by the PRECEDE-PROCEED domains.

Table 2. Frequency Distribution of Research Variables (n=168)

Variable	Category	n	%
Knowledge	Good	146	86.9
	Poor	22	13.1

Attitude	Positive	133	79.2
	Negative	35	20.8
Spousal Support	Supportive	86	51.2
	Non-supportive	82	48.8
Family Support	Supportive	94	56.0
	Non-supportive	74	44.0
Healthcare Worker Support	Supportive	108	64.0
	Non-supportive	60	36.0
Cultural Factors	Supportive of Delay	92	55.0
	Non-supportive	76	45.0
Contraceptive Use Intention	Intends to Use	127	75.6
	Does Not Intend	41	24.4

Notably, despite the high proportions of respondents demonstrating good knowledge (86.9%) and positive attitudes (79.2%), which represent the predisposing factor domain, the reinforcing factor domain showed more modest levels of support: family support was present in only 56.0% of cases, and spousal support in 51.2%. This distributional pattern suggests that social reinforcing factors, rather than individual predisposing factors, may constitute the more limiting determinant of contraceptive use intention in this population.

Bivariate Analysis Results

Table 3 presents a consolidated summary of Chi-square test results examining the relationship between each independent variable and contraceptive use intention.

Table 3. Summary of Bivariate Analysis Results (Chi-square, α=0.05)

No.	Independent Variable	p-value	Interpretation
1	Age	0.263	Not significant
2	Education	0.275	Not significant
3	Employment	0.964	Not significant
4	Income	0.038*	Significant
5	Knowledge regarding pregnancy delay and contraception	0.095	Not significant
6	Attitude toward pregnancy delay and contraception	0.672	Not significant
7	Spousal support for pregnancy delay and contraception	0.020*	Significant
8	Family support for pregnancy delay and contraception	0.002*	Significant

9	Healthcare worker support for pregnancy delay and contraception	0.000*	Significant
10	Cultural norms regarding pregnancy delay and contraceptive use	0.004*	Significant

**Significant at α=0.05*

Variables within the predisposing factor domain, knowledge (p=0.095) and attitude (p=0.672), as well as all sociodemographic variables, did not attain statistical significance. In contrast, all reinforcing factors and the enabling factor (income) demonstrated significant associations, a pattern consistent with the PRECEDE-PROCEED proposition that reinforcing and enabling factors exert stronger proximal influence on health behavior than predisposing factors alone in socially embedded populations.

Multivariate Analysis Results (Multiple Logistic Regression)

Five variables with p-values < 0.25 in the bivariate analysis were entered into the multiple logistic regression model: household income, spousal support, family support, healthcare worker support, and cultural factors. The analytical outcomes are presented in Table 4.

Table 4. Multiple Logistic Regression Results: Determinants of Contraceptive Use Intention

Variable	B	S.E.	Wald	Sig.	OR (Exp B)	95% CI
Income	1.393	0.466	8.944	0.003	4.027	1.616–10.033
Spousal Support	0.386	0.462	0.699	0.403	1.471	0.595–3.634
Healthcare Worker Support	1.507	0.466	10.449	0.001	4.515	1.810–11.261
Family Support	1.523	0.471	10.440	0.001	4.565	1.820–11.547
Cultural Factors	1.374	0.471	8.523	0.004	3.951	1.571–9.938
Constant	-3.879	0.593	42.727	0.000	0.021	-

Four variables were confirmed as statistically significant predictors of contraceptive use intention: family support (OR=4.565; p=0.001), healthcare worker support (OR=4.515; p=0.001), household income (OR=4.027; p=0.003), and cultural environment (OR=3.951; p=0.004). Spousal support, in contrast, did not remain statistically significant in the multivariate model (p=0.403). The probability of contraceptive use intention when all four dominant factors are simultaneously present as supportive conditions was calculated to be 87.19%, derived from the formula $P(x) = 1/[1+e-(-3.879+1.393+1.507+1.523+1.374)] = 1/[1+e-1.918] = 0.8719$. This probability estimate reinforces the cumulative benefit of addressing multiple determinants simultaneously within an integrated intervention framework. Notably, the 95% confidence intervals for all four significant predictors excluded unity (family support: 1.820–11.547; healthcare worker support: 1.810–11.261; income:

1.616–10.033; cultural factors: 1.571–9.938), indicating stable and precise effect estimates despite the relatively wide intervals attributable to the moderate sample size. This pattern of multiple concurrent reinforcing and enabling factors driving contraceptive intention is consistent with a multi-level analysis of intention to use contraceptives among reproductive-age women across high-fertility sub-Saharan African countries, which similarly identified household-level and community-level factors as stronger correlates of intention than individual predisposing characteristics alone (Negash et al., 2023).

Discussions

Contraceptive Use Intention Among Early- Married Couples

The findings of this investigation demonstrate that 75.6% of respondents reported intending to use contraception, a result consistent with the theoretical propositions of the Theory of Reasoned Action, which identifies intention as the most proximal predictor of health-related behavioral enactment (Ajzen, 2020). Notwithstanding this predominantly positive orientation, a substantial minority of 24.4% exhibited insufficient contraceptive use intention, with the majority among them (73%) having not engaged in deliberate discussion of contraceptive use with their husbands. This observation underscores that intra-couple communication is a critical structural barrier that necessitates targeted intervention. A systematic review synthesizing 25 studies at the individual, community, and socio-cultural levels similarly concluded that spousal communication and dynamics are recurring socio-cultural determinants of family planning and contraceptive use across highly diverse settings, lending cross-contextual weight to the present finding (Feriani et al., 2024).

The relatively high prevalence of contraceptive use intention may be attributed to increasing exposure to reproductive health information through family planning socialization programs. Research by Elizawarda et al. (2025) demonstrated that substantive exposure to contraceptive information significantly elevated contraceptive use intention among young women. It must be acknowledged, however, that elevated intention does not automatically translate into observable behavior; the empirically documented intention-action gap is frequently conditioned by socio-cultural and structural factors operating at multiple ecological levels (Huda et al., 2021).

The Influence of Family Support

Family support was identified as the strongest predictor (OR=4.565; p=0.001), indicating that respondents who benefited from strong familial support were 4.5 times more likely to intend to use contraception than those lacking such support. This finding is consistent with the PRECEDE-PROCEED framework, which positions family-derived social support as the most potent reinforcing factor in the formation of health behavior (Green & Kreuter, 2005). Within the strongly patriarchal cultural context characteristic of rural Central Java, the reproductive decision-making of young women is substantially shaped by the authoritative influence of family members, most notably mothers-in-law and parents. This observation is directly corroborated by an analysis of family planning use across Bangladesh, India, Nepal, and Pakistan, which found that the influence of mothers-in-law functions as a significant and independent determinant of contraceptive uptake among young married women in South Asian patriarchal household structures, closely mirroring the family-support dynamic identified in the present study (Pradhan & Mondal, 2023).

From a theoretical standpoint, this finding reinforces the construct validity of the reinforcing factor domain of the PRECEDE-PROCEED model for predicting reproductive health behavior in collectivist cultural settings, extending its applicability beyond its originally Western-developed context. Notably, the magnitude of this association (OR=4.565) considerably exceeds the effect sizes typically reported for reinforcing determinants of contraceptive-related outcomes in the international literature, where household- and community-level correlates generally range between

AOR 1.15 and 3.72 (Negash et al., 2023). This suggests that family support may exert a comparatively stronger influence within the strongly patriarchal, collectivist social structure of this rural Indonesian setting than in the more heterogeneous populations captured by multi-country analyses.

Adhitiah et al. (2025) demonstrated that familial pressure to produce offspring promptly constitutes the primary impediment to contraceptive adoption among young couples; conversely, active family endorsement functions as a catalyst propelling young wives toward contraceptive use intention. Findings by Najib (2018) further corroborate these conclusions, demonstrating that fertility-related family norms exert a statistically significant influence on family planning decisions among young married women. Family-centered interventions including pre-marital counseling programs that actively engage parents and in-laws are accordingly recommended as a foundational component of reproductive health promotion strategies.

The Influence of Healthcare Worker Support

Healthcare worker support constituted the second most significant predictor (OR=4.515; p=0.001). Respondents who received substantive guidance from healthcare professionals demonstrated a 4.5-fold greater likelihood of intending to use contraception. Healthcare providers, and midwives in particular, fulfill the dual role of reinforcing factor and efficacious behavioral change agent, as theorized within the PRECEDE-PROCEED model (Green & Kreuter, 2005). Information communicated by midwives encompasses evidence-based content regarding the risks associated with adolescent pregnancy, including preeclampsia, intrauterine growth restriction, anemia, preterm delivery, and cervical cancer.

Notably, this magnitude is considerably smaller than that reported by Handini et al. (2021) among early-married women in rural East Java, where healthcare worker social support was associated with an odds ratio of 21.89 (95% CI: 6.83–70.17) in bivariate analysis and remained the strongest multivariate predictor at OR=22.07 (95% CI: 4.75–102.43) for contraceptive method use. While both studies concur that healthcare worker support functions as a dominant reinforcing determinant among early-married adolescent populations, the substantially wider confidence interval and larger point estimate in Handini et al. (2021) likely reflect their smaller sample size (n=107 versus n=168 in the present study) and their outcome measure of actual contraceptive use rather than intention, a distinction consistent with the intention–behaviour gap discussed elsewhere in this paper. The convergence in direction across two methodologically similar, geographically proximate Indonesian studies nonetheless strengthens confidence that healthcare worker support is a robust and generalizable reinforcing factor among early-married populations, even though the precise magnitude appears sensitive to sample size and outcome specification.

This study additionally identified that a portion of respondents had received no health education regarding pregnancy prevention from healthcare personnel prior to marriage, which is a significant service gap warranting systematic remediation within the primary healthcare system.

The Influence of Household Income

Household income maintained a statistically significant association with contraceptive use intention in both bivariate (p=0.038) and multivariate analyses (OR=4.027; p=0.003), consistent with its classification as an enabling factor within the PRECEDE-PROCEED framework. Couples with income exceeding the regional minimum wage exhibited a fourfold greater likelihood of intending to use contraception. The relationship between socioeconomic status and family planning utilization has been consistently affirmed in the literature (Sariyati et al., 2020). Adequate financial resources enhance couples' capacity to access contraceptive methods, facilitate healthcare facility visits, and strengthen the motivational basis for deferring pregnancy in the interest of household economic stability.

This enabling-factor pathway is conceptually reinforced by evidence from western Ethiopia, where women's broader empowerment, encompassing economic and household decision-making dimensions, exerted a significant direct effect on family planning utilization via structural equation modeling (Muluneh et al., 2021); as that study reported standardized path coefficients rather than odds ratios, however, its effect size is not directly numerically comparable to the present findings. A more direct magnitude comparison is available from Efendi et al. (2023), who found that economic empowerment (labor force participation) was associated with modern contraceptive use across five ASEAN countries with adjusted odds ratios of only 1.09–2.01, including AOR=1.09 in Indonesia specifically. The substantially larger effect size observed in the present study (OR=4.027) suggests that household income operates as a markedly stronger enabling factor among early-married adolescent women than among the general reproductive-age population typically sampled in national DHS-based analyses, possibly reflecting the more acute financial constraints characteristic of newly formed, economically dependent young households; the income effect observed here may therefore operate partly through enhanced household bargaining power rather than through service affordability alone.

Susanti et al. (2026) further confirmed that economic factors maintain a consistent association with pregnancy delay decisions among young couples in Indonesia, reinforcing the urgency of subsidy programs and affordable contraceptive access for economically marginalized rural communities.

The Influence of Cultural Factors

The cultural environment was confirmed as a significant predictor (OR=3.951; p=0.004), reflecting the pervasive influence of community norms on reproductive behavior prevalent across rural sub-districts of Central Java. Deeply rooted beliefs, including the conviction that women are obligated to become pregnant immediately upon marriage, the association of pregnancy delay with infertility, and the cultural aphorism equating numerous children with divine abundance (banyak anak banyak rezeki), continue to function as formidable barriers.

This finding aligns with emerging evidence using validated fertility norms measures elsewhere in South Asia. Bhan et al. (2023), employing a psychometrically validated Fertility Norms Scale among newly married women in rural Maharashtra, India, found that women reporting high injunctive pro-natal norms, including community pressure to bear children soon after marriage and social sanction for delaying childbirth, were significantly less likely to intend to delay pregnancy (RRR=0.69; 95% CI: 0.50–0.96) than those reporting low pro-natal norms. While that study measured the restraining effect of pro-natal norms rather than the facilitating effect of a supportive cultural environment as in the present study, the two findings are substantively convergent: normative community expectations around early and continuous childbearing exert a measurable influence on reproductive intention among newly married women in patriarchal, rural South and Southeast Asian settings. The comparatively larger effect size observed in the present study (OR=3.951) may reflect differences in how cultural influence was operationalized, namely a composite measure of supportive versus unsupportive cultural environment rather than an injunctive pro-natal norms scale, as well as contextual differences between rural Central Java and rural Maharashtra.

Meaningful transformation of these norms demands a holistic, long-term approach that engages religious leaders and community figures alongside community-based women's empowerment programs, modalities shown to be effective in reshaping norms that obstruct contraceptive use in rural communities (Marlinawati et al., 2019; Handini et al., 2021).

Factors Without Significant Associations

Age, educational attainment, employment status, knowledge, and attitude did not demonstrate statistically significant associations with contraceptive use intention. The absence of a significant relationship between knowledge and intention (p=0.095) is particularly noteworthy given that 86.9%

of respondents exhibited high knowledge levels. This finding is interpretable through the knowledge-action gap construct, which postulates that adequate knowledge does not invariably culminate in commensurate intention when the social environment exerts dominant conditioning influences that supersede individual internal factors (Conner & Norman, 2022). This is consistent with evidence from Pakistan showing that husbands' attitudes toward contraceptive use, rather than women's individual knowledge or intention alone, were the stronger correlate of unmet family planning need, suggesting that spousal-level and household-level dynamics may exert more proximal influence on realized contraceptive behavior than individual predisposing factors, even when the latter appear favorable on their own (Asif et al., 2021).

Within the PRECEDE-PROCEED framework, this pattern confirms that predisposing factors alone are insufficient to drive behavioral intention when enabling and reinforcing conditions remain unfavorable. The theoretical implication is that health interventions must transcend knowledge-centered approaches and adopt a comprehensive orientation that targets social norm transformation, reinforcement of familial support, and the equitable expansion of family planning services. Multi-level socio-ecological intervention frameworks have been demonstrated to achieve superior outcomes compared to individually focused modalities (BPS, 2022).

Study Limitations

Several limitations of this study warrant acknowledgment. First, as this study utilized secondary analysis of previously collected survey data, complementary diagnostic statistics for the logistic regression model such as the Hosmer-Lemeshow goodness-of-fit test, Nagelkerke R^2, variance inflation factors (VIF) for multicollinearity assessment, and the classification table could not be retrieved due to the unavailability of the original raw dataset. Nevertheless, the primary regression estimates (coefficients, Wald statistics, p-values, and odds ratios with 95% confidence intervals) are reported in full. Notably, four of the five variables retained in the multivariate model showed significant associations in both bivariate and multivariate analyses, indicating a coherent and stable pattern of association that partially offsets the lack of formal goodness-of-fit testing. Second, the cross-sectional design precludes causal inference about the temporal relationship between the identified predictors and contraceptive-use intention. Third, data collection relied on self-reported measures, which may be subject to social desirability bias, particularly concerning sensitive topics such as spousal communication and contraceptive attitudes.

Conclusion

This study demonstrates that most early-married women in the study area intend to use contraception, despite generally high levels of knowledge and positive attitudes. Contraceptive use intention was predominantly shaped by reinforcing and enabling factors, namely family support, healthcare worker support, and household income, together with the surrounding cultural environment, while predisposing factors alone did not significantly predict intention. This pattern indicates that, in this socially embedded population, structural and social support systems play a more decisive role in shaping reproductive health behavior than individual knowledge or attitudes. These findings validate the applicability of the integrated TRA–PRECEDE-PROCEED framework beyond its original Western context and underscore the need for family-centered, health-system-based, and community- or culture-norm interventions to strengthen contraceptive use intention among early-married women in rural Indonesia.

Recommendations

At the practice level, Puskesmas and the Regional Health Office should strengthen family-based KB counseling by involving the parents and in-laws of newly married couples, complemented by intensified home visits by midwives. BKKBN should engage religious and community leaders to

transform fertility-promoting cultural norms, targeting extended family networks alongside young couples. The Regional Government should expand contraceptive accessibility for low-income couples through subsidies and integration within the national health insurance scheme. For future research, qualitative studies are needed to explore household contraceptive decision-making dynamics, longitudinal designs to examine the intention–behavior relationship over time, and replication studies across comparable rural sub-districts to validate the generalisability of the integrated explanatory model, ideally accompanied by complete model diagnostic reporting (e.g., goodness-of-fit and classification accuracy) to strengthen methodological rigor.

Declaration of Generative Artificial Intelligence (AI) Use

The author declares that artificial intelligence (AI) tools were used in the preparation of this manuscript. AI tools were used solely to assist in translating the manuscript content between languages (e.g., from Bahasa Indonesia to English), to ensure accuracy and consistency of meaning across different language versions. AI tools were used to improve the clarity, readability, and academic tone of the writing, including grammar correction, sentence restructuring, and vocabulary enhancement, without altering the substantive scientific content.

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